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14 December 2014

Heather A. Garvie
Fungicide Branch, Registration Division
Office of Pesticide Programs (7505P)
US Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Subject: Sipcam's Opposition to Isagro's Petition to Extend the Exclusive Use Period for Tetraconazole

Dear Ms. Garvie:

This letter responds to the October 17, 2014 letter from Tracy Heinzman, Wiley Rein LLP, to Nicole Williams, Registration Division, Office of Pesticide Programs, on behalf of Sipcam Agro USA, Inc. (Sipcam). Ms. Heinzman submitted her letter in opposition to Isagro USA, Inc.'s (Isagro) May 14, 2014 petition to extend the exclusive use period for tetraconazole data. Isagro's response presents additional information to support its petition.

BACKGROUND

Section 3(c)(1)(F)(ii) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) provides for an extension of the 10 year period for exclusive use for data submitted in support of the initial registration of a pesticide. This section of FIFRA allows a registrant to extend the period of exclusive use by one year for every three minor uses registered by petition within seven years of an original registration if one or more of four criteria are met.

The Environmental Protection Agency (EPA or the Agency) registered Isagro's technical tetraconazole product on August 1, 2005 (EPA Registration No. 80289-1). The Agency registered a Sipcam tetraconazole product on April 14, 2005 (EPA Registration No, 60063-11). The Sipcam registration was the first registration for tetraconazole. Subsequently and as discussed in its petition, Isagro entered into a Post-termination Data Transfer and Access Agreement whereby Sipcam transferred data compensation and exclusive use rights for tetraconazole to Isagro.

The product that is the subject of Isagro's petition is its METTLE® 125 ME Fungicide (METTLE®) product containing 11.6% tetraconazole (EPA Registration No. 80289-8). On August 30, 2011, EPA registered the use of tetraconazole on Crop Group 13-07F (small fruit vine climbing subgroup except fuzzy kiwifruit). Thus, the use of METTLE® on the minor crops in Crop Group 13-07F was registered within seven years of the initial tetraconazole registration.

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On May 14, 2014, Isagro submitted a petition to extend the exclusive use period for tetraconazole data. In the petition, Isagro presented information that its minor use registrations for tetraconazole met two of the four criteria for extending the exclusive use period; namely, there are insufficient efficacious alternatives for the minor uses, and Isagro's tetraconazole-containing METTLE® fungicide plays a significant role in resistance management.

Isagro incorporates its petition by reference, and a copy of the petition is provided in APPENDIX 1 of this letter.

Isagro now responds below to issues raised in Ms. Heinzman's October 17, 2014 letter to EPA.

THE MINOR USES SUPPORTING THE EXTENSION ARE MARKETED

Ms. Heinzman's letter states that "Isagro has failed to provide any evidence that it is actually marketing Mettle® for the minor uses listed in crop group 13-07F". Ms. Heinzman reports that market research performed for Sipcam indicated that METTLE® "was not being used" on any minor use crops in in Crop Group 13-07F in 2013. In addition, Ms. Heinzman says that a technical bulletin from 2009 indicates that METTLE® is for use on grapes, which is not a minor crop. Finally, Ms. Heinzman reports that Isagro's website "does not indicate that it is currently marketing Mettle or any other tetraconazole product for the minor uses".

Concerning the Sipcam market research, Isagro notes that the research was not provided in Ms. Heinzman's letter, and is claimed as Confidential Business Information. Since Isagro does not have access to the Sipcam market research, Isagro cannot refute this information. Market research is based on phone interviews with growers and is not total or exhaustive for all crops grown in the United States. Industry well understands the limitations of these market reports including missing sales for minor crops such as the minor crops in Crop Group 13-07F. In addition, Isagro's METTLE® product is not a restricted use product; any grower can purchase the product for any purpose, in accordance with the approved product label. Minor use crops, by definition, are limited in acres grown and in pesticide product usage. METTLE® is marketed, sold and used for both major and minor crops.

More importantly, regardless of what market research may indicate as a product being used or not used, as Ms. Heinzman states the key is whether Isagro was and is marketing METTLE® for use on the minor crops in question. The answer is clearly "YES".

Registration for the minor crops was initiated by stakeholders through the Inter-Regional Research Project Number 4 (IR-4). Isagro worked closely with the IR-4 to support the registration actions necessary to register these minor crops. Stakeholders and growers have not raised any issues about the availability of the product for their production needs.

Isagro's petition provided copies not only of the EPA stamped approved METTLE® label, but also copies of the Isagro's commercial labels for its one gallon and 30 fluid ounce METTLE®

products. These three labels are again provided to the Agency in APPENDIX 2 of this letter. The EPA stamped approved label and both commercial labels provide use directions for the minor crops in CROP Group 13-07F. The commercial labels are labels used on METTLE® product that was marketed and sold by Isagro. Under FIFRA Section 2(gg) labeling and marketing a pesticide product constitutes "To Distribute or Sell" by having the product in "distribution" and "offered for sale."

On December 14, 2013, Isagro entered an exclusive distribution relationship with the Gowan Company (Gowan) to market and sell tetraconazole-containing METTLE® product. Copies of the EPA approved and commercial labels for the METTLE® product distributed by Gowan are provided in APPENDIX 3. In fact, Ms. Heinzman's letter to EPA includes a copy of the METTLE® label used by Gowan to distribute METTLE®.

As stated above, Ms. Heinzman says that a 2009 Isagro technical bulletin for METTLE® indicates that the product was for use only on grapes, which is not a minor crop on Crop Group 13-07F. Isagro notes that a 2009 bulletin could not legally market the product for use on the minor crops since EPA did not approve such use until 2011.

Again, Ms. Heinzman reports that the Isagro website does not indicate it is currently marketing METTLE® for use on the minor crops in question. It is curious that while providing a copy of the Gowan METTLE® label, Ms. Heinzman apparently missed the fact that the Gowan website provides information about METTLE®, and the Gowan label provided on the website lists the minor crops in Crop Group 13-07F.

In summary, Isagro, prior to 2014, and Gowan, as of January 1st, 2014, in fact, marketed METTLE® for use on the minor crops covered by the Isagro petition.

ISAGRO'S PETITION SATISFIES THE CRITERIA FOR OBTAINING THE EXTENSION

Isagro's petition for extension of the exclusive use period is based on Isagro's position that its tetraconazole-containing METTLE® product meets two of the four FIFRA criteria for extending the exclusive use period. Namely, Isagro's position is that METTLE® meets Criteria I and III which are:

- Criterion I: There are insufficient efficacious alternative registered pesticides available for the minor use; and
- Criterion III: The minor use pesticide plays or will play a significant part in managing pesticide resistance.

Non-gooseberry Minor Uses

This section of the document discusses four of the minor use crops in Crop Group 13-07F. These crops are amur river grape, hardy kiwifruit, maypop, and schisandra berry. The gooseberry minor use is discussed in the next section of this document.

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Ms. Heinzman states that Isagro's petition does not satisfy FIFRA Criterion I that there are insufficient efficacious registered pesticides available for use on the Crop Group 13-07F minor crops.

In its petition, Isagro reported that in addition to METTLE®, it had identified one other registered fungicide commercially labeled against the specific powdery mildew diseases, *Sphaerotheca spp.* and *Erysiphe spp.* for use on the four minor crops. The other product was Syngenta's Abound® (EPA Registration No. 100-1098). As discussed in its petition, Isagro's position was that having only two products registered for use on the minor crops against the two specific powdery mildew diseases demonstrated that there are insufficient registered alternatives. Isagro noted that both products had limitations concerning the number of applications allowed, and that, if the limitations of use were reached for either product, there needed to be another product available to meet grower requirements.

Ms. Heinzman disagrees and argues that Isagro must show that Abound® is "either not efficacious or otherwise provides inadequate control of the pest". As it turns out, this disagreement must be addressed in relation to another product, but not in relation to Abound®.

After re-reviewing the commercial Abound® label (see APPENDIX 4), Isagro realizes that it made a mistake in its petition. While Abound® is registered for control of a powdery mildew disease, it is registered for only one of the two specific powdery mildew diseases for which METLLE® is registered. Mettle® is registered for use against powdery mildew caused by *Sphaerotheca spp.* and *Erysiphe spp.* while according to the product label Abound® is registered for use against powdery mildew caused by *Uncinula necator.* Uncinula necator is an older name that has now been replaced by *Erysiphe spp.* Thus, Abound® is registered for only one of the two powdery mildew diseases for which METTLE® is registered. Isagro apologizes for the incorrect information in its petition.

Ms. Heinzman also states that there are two other fungicide products registered for use on the four minor crops. These products are Syngenta's Vangard® WG Fungicide (Vangard®) (EPA Registration No. 100-828) and Gowan's Torino® Fungicide (EPA Registration No. 8033-103-10163; supplemental distributor product of Nippon Soda's Miltrex 10 SC Fungicide). Commercial Labels for these products are provided in APPENDIX 5 and 6, respectively.

A further review of the Vangard® label shows that while the product is registered for use against powdery mildew on the minor crops in question, the product is not an "efficacious" alternative to the METTLE® product. The Vangard® product is for use against the same powdery mildew disease as the Abound® product (i.e., *Uncinula necator;* now known as *Erysiphe spp*.). Vangard® is not labeled for use against powdery mildew caused by *Sphaerotheca spp.* Again, METTLE® is registered for both fungal diseases. Furthermore, according to its label, Vangard® "suppresses" powdery mildew; it does not control powdery mildew. Thus from either perspective, Vangard® is not an efficacious alternative to METTLE®.

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A review of the commercial label for Torino® shows that the product is registered for use on the four minor crops in the crop group against powdery mildew. No specific powdery mildew disease genera or species is listed. Thus, the Torino® fungicide appears to be marketed as an alternative to Isagro's METTLE® product.

As noted above, Ms. Heinzman apparently would argue that Isagro must show that Torino® is "either not efficacious or otherwise provides inadequate control of the pest" in order to meet Criteria I. Isagro's position is that use limitations for Torino® prevent it from providing adequate season-long control for powdery mildew when used by itself. At least a second product is required to provide adequate season-long control.

The directions for use on the minor crops on the METTLE® label state that applications should begin when conditions are favorable for disease development. Applications should continue at 14 day intervals with a maximum of three applications per season. The Torino® label says that use should begin at the first sign of disease. The recommended spray interval is 14 to 21 days, and only two applications are allowed per season. Additional applications are needed to protect the fruit since the crop is susceptible for a period greater than 42 days (2 applications x 21 day interval). Thus, Torino® cannot provide adequate season-long control for powdery mildew. METTLE® meets Criteria I and satisfies the standard for an extension of exclusive use rights.

In addition, Isagro notes that METTLE® and Torino® are different classes of chemistry with distinctly different modes of action. METTLE is a Fungicide Resistance Action Committee (FRAC) code 3, from the Demethylation Inhibitor Group, whereas Torino is a FRAC code U 6, from the Phenyl-acetamide Group. Having METTLE® registered for use against powdery mildew on the four minor crops in addition to Torino® provides an important resistance management tool since the two products can be rotated. Thus, METTLE® also meets Criterion III; namely, METTLE® plays a significant part in managing pest resistance.

Gooseberry Minor Uses

In its petition, Isagro identified a number of products that were registered for two specific fungal diseases on gooseberries (powdery mildew caused by *Sphaerotheca spp.* and anthracnose caused by *Drepanopeziza spp.*). Isagro focused on the fact that the registered products consisted of two classes of chemistry, and that limitations on product use provided growers with an insufficient number of alternative pesticides. In addition, the limited classes of chemistry would contribute to resistance management problems.

In her letter, Ms. Heinzman noted that Torino® is also registered for use on gooseberries. In addition, she reported that both copper and sulfur products are also registered for use on gooseberries. In other words, Ms. Heinzman argued that there are additional pesticides registered for use which weakens the Isagro position.

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Copper and sulfur are FRAC codes M1 and M2, respectively. They are classified as multi-site contact activity products. Both products have several limitations compared to METTLE®. Both copper and sulfur are protectant products which do not translocate to new growth. During adverse weather conditions, the product is washed from the foliage and fruit and if wet fields prevent reapplication then the crop is left unprotected. METTLE® is absorbed into the foliage and translocates to the growing point to provide protection for treated and untreated plant parts and is less affected by weather compared to copper and sulfur.

According to a Pennsylvania State University Use Guide (see APPENDIX 7a) "Sulfur can lead to phytotoxicity, which simply means plant poisoning. Phytotoxicity of plants may present in several ways. Chlorosis is one symptom, which may manifest as yellow spots or yellowing of a leaf's tip or edges. You may also notice leaf distortion that includes leaf cupping, curling or crinkling. Abnormal growth can also occur and may include a reduction in the size of the fruit, flowers or roots or an increase in growth of the roots or the entire plant." The Use Guide further states "Copper sulfate is readily soluble in water. This high degree of solubility is the fundamental cause of the toxicity problems, which copper sulfate can cause to all fruit crops. Fixed coppers have been developed that are relatively insoluble and therefore less toxic to plants; however, fixed coppers can also result in phytotoxicity under certain conditions. Fixed coppers include basic copper sulfate, basic copper chloride, copper oxides, and copper hydroxide." Additionally, the Cornell University crop profile for gooseberries (APPENDIX 7b) discusses control measures for powdery mildew and the occurrence of phytotoxic responses in some varieties from sulfur applications. Cornell describes this phenomena as "sulfur shy".

Isagro acknowledges that Torino®, copper and sulfur are, in fact, registered for use on gooseberries. While Torino® is registered for use on gooseberries for powdery mildew, it is not registered for use against anthracnose. Using Isagro's BADGE® product (noted in Ms. Heinzman's letter and provided in APPENDIX 8) as a representative copper product, BADGE® is registered for use on gooseberries for anthracnose but not for powdery mildew. Using, United Phosphorous, Inc.'s MICROTHIOL®DISPERSS®product (also identified in Ms. Heinzman's letter and provided in APPENDIX 9) as a representative sulfur product, MICROTHIOL DISPERSS® is registered for use on gooseberries for powdery mildew, but not for use against anthracnose. Additionally, METTLE has a different mode of action and different FRAC classification than the other fungicides identified by Ms. Heinzman. Thus, Torino®, BADGE® and DISPERSS® are partial, but not complete, alternatives for METTLE®

Product Name	Anthracnose	Powdery Mildew	FRAC Group
Mettle	Control	Control	3
Torino	Not labeled	Control	U6
Badge	Control	Not labeled	M1
Microthiol Disperss	Not Labeled	Control	M1

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While the case is not as strong as the position for the other 4 minor crops in Crop Group 13-07F, Isagro believes that both Criteria I and III are met for gooseberries. Limited classes of chemistry and use restrictions for products that must be used for season-long pest management require multiple products. In addition, resistance management programs require multiple classes of chemistry.

CULTIVAR AND HYBRID DISCUSSION

Ms. Heinzman concludes her submission by stating that even if EPA concludes that one of the criteria cited by Isagro has been met, Isagro is entitled to only a one year extension of the exclusive use period. Ms. Heinzman notes that Isagro asked for a two extension based on its view that Crop Group 13-07F included six minor crops (three crops needed for each one year extension). Ms. Heinzman argues that there are only five minor crops and not six such crops in the crop group.

In its petition Isagro took the position that the sixth minor crop in Crop Group 13-07F was "cultivars, varieties and/or hybrids" of the other five minor crops. EPA advised Isagro on July 21, 2014 that the Agency considers cultivars, varieties and hybrids to be variations of the minor crops and not a separate minor crop. Thus, EPA is reviewing the petition based on five minor crops and a potential extension of the exclusive use period for one year and not two years.

CONCLUSION

In conclusion, Isagro submitted a petition to extend the exclusive use period for tetraconazole data. The petition and this response to Ms. Heinzman's letter support the extension of the exclusive use period for a period of one year.

Finally, in response to a question by EPA, Isagro is willing to work with the Agency to add resistance management language to the METTLE ® end-use product label to make the label consistent with PR Notice 2001-5.

Sincerely,

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VIA COURIER DELIVERY

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SUBJECT: PRIA M007: Petition to Extend the Exclusive Use Period for Tetraconazole Data

Isagro Agro USA, Inc. (Isagro) is submitting this petition to extend the exclusive use period for tetraconazole data based in Isagro's registration of minor uses for its end use products containing tetraconazole. Appendix 4 contains an Application for Registration form 8570-1 and copies of the PRIA payment letter and check sent to EPA.

Background

The Food Quality Protection Act of 1996 (FQPA) amended section 3(c)(1)(F) of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to add a new section 3(c)(1)(F)(ii). Section 3(c)(1)(F)(ii) sets forth the criteria for extending the period of exclusive use protection. This section states that the period of exclusivity can be extended one year for every three qualifying minor uses registered within the first seven years of an original registration for which data retain exclusive use protection up to a total of three additional years. In order for EPA to extend the period of data exclusivity the Agency must determine that at least one of four criteria is satisfied. These criteria are:

- There are insufficient efficacious alternative registered pesticides for the use;
- The alternatives to the minor use pesticide pose greater risk to the environment or human health;
- The minor use pesticide plays or will play a significant part in managing pest resistance; or
- The minor use pesticide plays or will play a significant part in an integrated pest management program.

Isagro believes that its registered minor uses meet the first and third criteria; namely, that there are insufficient efficacious alternatives registered for these uses and Isagro's tetraconazole-containing METTLE® fungicide plays a significant role in resistance management.

Isagro Products and Exclusive Use Data

EPA registered Isagro's technical tetraconazole product on August 1, 2005 (EPA Registration No. 80289-1). The Agency registered a Sipcam Agro USA, Inc. (Sipcam) technical tetraconazole product on April 14, 2005 (EPA Registration No. 60063-11). The Sipcam registration was the first registration for tetraconazole.

Isagro and Sipcam Agro USA, Inc. (Sipcam) entered into a Post-Termination Data Transfer and Access Agreement whereby Sipcam transferred data compensation and exclusive use rights for tetraconazole to Isagro. Appendix 1 provides a copy of the document Sipcam submitted to EPA on December 20, 2013 covering the transfer between the two companies.

The Isagro product that is the subject of this petition is Isagro's METTLE® Fungicide containing 11.6% tetraconazole (EPA Registration No. 80289-8). Appendix 2 provides the most recent EPA stamped approved label and the commercial labels for the 1 gallon and 30 fluid ounce METTLE® products. These labels include the use of these products on EPA Crop Group 13-07F (small fruit vine climbing subgroup except fuzzy kiwifruit) and Crop Group 13-07G (low growing berry subgroup). Note that cranberries are not included among the Crop Group 13-07G crops on the METTLE® label. EPA registered the use of tetraconazole on these Crop Groups on August 30, 2011. Thus the minor crop uses covered by these two Crop Groups were all registered within the first seven years of the first tetraconazole registration.

In summary, EPA granted the first tetraconazole registration on April 14, 2005. The 10 year exclusive use period is still in effect. Exclusive use rights for tetraconazole data belong to Isagro. The Agency registered minor crop uses for Isagro's METTLE® tetraconazole product within seven years of the initial tetraconazole registration.

Rationale for Extension of Exclusive Use Period

The basis for Isagro's petition to extend the exclusive use period for tetraconazole data is: (1) there are insufficient efficacious alternative pesticides registered and sold for use on the minor crops that are in EPA Crop Groups 13-07F, and (2) Isagro's METTLE® product plays a significant role in resistance management of fungal diseases that affect the minor use crops in Crop Groups 13-07F and 13-07G.

Crop Group 13-07F

Crop Group 13-07F includes six minor crops; namely, amur river grape, gooseberry, hardy kiwifruit, maypop, schisandra berry, and cultivars, varieties and hybrids of the named crops. Based on the discussion below, Isagro believes that its sale of tetraconazole for these six minor crop uses supports two additional years of exclusive use data rights.

Table 1 in Appendix 3 summarizes product use information, and Table 2 in the same Appendix provides application rate information. The product use and rate information provided in these tables is discussed below. Note that in Table 2 the application rates for propiconazole in Quilt Xcel® are the same propiconazole application rates in Tilt®, and the application rates for myclobutanil in Rally® are the same myclobutanil application rates in two of Albaugh's Sonoma® products. Each of these

products is discussed below, but the rate information in Table 2 is only provided for Quilt Xcel® and Rally®.

Based on data and information available from CDMS, Inc., an industry supported information database, Isagro believes that only its METTLE® product and Syngenta's Abound® (EPA Registration No. 100-1098) are commercially labeled for use on five of the six minor crops in Crop Group 13-07F against the fungal diseases, *Sphaerotheca spp., and Erysiphe spp.* Gooseberries are discussed separately below.

For the five minor crops in Crop Group 13-07F, not including gooseberries, Isagro believes having only two products commercially labeled for use on these crops against *Sphaerotheca spp.* and *Erysiphe spp.* demonstrates that there are insufficient registered alternatives. In addition, both products have limitations concerning the number of applications allowed. If an application limit is reached for either product, there needs to be another product available to meet grower requirements. Again, the insufficient alternative criterion is met. Furthermore, since METTLE® (containing a Group 3 triazole fungicide) and Abound® (containing azoxystrobin which is a Group 11 fungicide) are different classes of chemistry, they provide an important resistance management tool since the two products can be rotated with each other or tank mixed. Thus, Isagro believes that METTLE® meets both the insufficient alternatives and importance as a resistance management tool criteria for the five minor crops.

For the sixth minor crop, gooseberries, both METTLE® and Abound® are commercially labeled for use on gooseberries against two fungal diseases, *Sphaerotheca spp.,* and *Drepanopeziza spp.* In addition, there are additional products that are also commercially labelled for use on gooseberries. Dow Agrosciences' Rally® EPA Registration No. 62719-410), Albaugh's Sonoma® 20EW AG (EPA Registration No. 42750-165), Albaugh's Sonoma® 40WSP (EPA Registration No. 42750-141), and Syngenta's Tilt® (EPA Registration No. 100-617) are also commercially labeled for use against the same two diseases. In addition, Syngenta's Quilt Xcel® (EPA Registration No. 100-1324) is commercially labeled for use against *Sphaerotheca spp.*

Rally® and the two Sonoma® products contain the triazole fungicide, myclobutanil, as an active ingredient. Tilt® contains propiconazole, another triazole fungicide. Quilt Xcel® has two active ingredients, propiconazole and azoxystrobin. Thus, three triazoles (including tetraconazole in Isagro's product) and azoxystrobin are available to meet gooseberry grower needs.

Isagro believes that with the limited number of products and with limitations on number of applications, there is an insufficient number of alternative pesticides. In addition, having two classes of chemistry facilitates resistance management programs. Finally, rotating within the triazole class of chemistry has been shown to reduce the potential for resistance problems. Isagro's METTLE® has the lowest application rates of any of the alternatives including the triazole-containing products. Thus, METTLE® contributes to resistance management while at the same time resulting in lower environmental burden.

In summary, Isagro thinks that METTLE® meets both the insufficient alternatives and the resistance management criteria for all of the minor crops in Crop Group 13-07F including gooseberries. Thus, Isagro asserts that it is entitled to two additional years of exclusive use protection for its tetraconazole data when the total of six minor crops is considered.

Crop Group 13-07G

Because Isagro was able to identify seven commercial product labels that provide use on eight minor crops in Crop Group 13-07G, we are not asking for a time extension based on the minor crops in this Crop Group.

Conclusions

EPA granted the first registration for tetraconazole on April 14, 2005. The Agency registered the minor crop uses included in Crop Groups 13-07F and 13-07G (not including cranberries) for Isagro's METTLE® tetraconazole product on August 30, 2011, and Isagro has sold METTLE® for these uses ever since. These minor crop uses were registered within the first seven years of the initial tetraconazole registration.

Counting the named Crop Group 13-07F minor crops and cultivars, varieties and hybrids of those crops gives a total of six minor uses.

Based on that number of minor use crops supported by METTLE®, based on the importance of the low application rate METTLE® product being registered for use on crops for which there are insufficient efficacious alternatives, and based on the important role tetraconazole-containing METTLE® plays in resistance management, Isagro is entitled to two additional years of exclusive use protection for its tetraconazole data. Thus, Isagro requests that EPA grant its petition for additional exclusive use data protection.

Sincerely,

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Attachments

Table 1 - Use Information

			Product	METTLE	RALLY	SONOMA 20EWAG	SONOMA 40WSP	TILT	ORBIT	ABOUND	FLINT	FONTELIS	PROCURE	QUADRIS TOP	QUILT XCEL
			Active Ingredient/s	Tetraconazole	Myclobutanil	Myclobutanil	Myclobutanil	Propiconazole	Propiconazole	Azoxystrobin	Trifloxystrobin	Penthiopyrad	Triflumizole	Azoxystrobin Difenoconazole	Azoxystrobin Propiconazole
			Manufacturer	ISAGRO	DOW	AGRISTAR	AGRISTAR	SYNGENTA	SYNGENTA	SYNGENTA	BAYER	DUPONT	CHEMTURA	SYNGENTA	SYNGENTA
			EPA Reg. No.	80289-8	62719-410	42750-165	42750-141	100-617	100-702	100-1098	264-777	352-834	400-518	100-1313	100-1324
Crop Group	Crop	Target Disease													
13-07F	Gooseberry	Sphaeroteca spp.		Y	Y	Y	Y	Y	Y	Y					Y
	Gooseberry	Drepanopeziza spp.		Y	Y	Y	Y	Y		Y					
	Amur river grape	Sphaeroteca / Erysiphe spp.		Y						Y					
	Kiwifruit hardy	Sphaeroteca / Erysiphe spp.		Y						Y					
	Maypop	Sphaeroteca / Erysiphe spp.		Y						Y					
	Schisandra berry	Sphaeroteca / Erysiphe spp.		Y						Y					
	cultivars, varieties, and/or hybrids	Sphaeroteca / Erysiphe spp.		Y				Y	Y	Y					
13-07G	Strawberry	Podosphaera aphanis, Sphaeroteca		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	y
	Strawberry	Mycospherella spp.		Y	Y	Y	Y	Y	Y	Y	Y			Y	y
	Strawberry	Phomopsis spp.		Y	Y	Y	Y	Y		Y	Y			Y	
	Blueberry lowbush	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y		Y		Y (No CA)		Y	Y
	Bearberry	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y		Y				Y	Y
	Billberry	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y		Y				Y	Y
	Cloudberry	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y		Y				Y	Y
	Lingonberry	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y	Y	Y				Y	Y
	Muntries	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y		Y				Y	Y
	Patridge berry	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y	Y		Y				Y	Y
	cultivars, varieties, and/or hybrids	Sphaeroteca, Microsphaera, Oidium spp.		Y	Y	Y	Y			Y				Y	Y

Table 2. Application Information – Crop Group 13-07 F

Trade Name	Formulation	g ai/L	lb ai/gal	g ai/L	lb ai/gal	Use Rate (oz/A)	Application Interval (d)	Max Appl. #/Season	Max Use/ Season (oz/A)	PHI (d)	Low Use Rate (oz/A)	lb ai/A	g ai/ha	High Use Rate (oz/A)	lb ai/A	g ai/ha
Rally	40 WSP	myclobutanil				3 - 5	<21	8 to 4	24	14	3	0.075	84	5	0.125	140
			0.40													
Mettle	125 ME	tetraconazole				3 - 5	14 - 21	3 to 2	10	14	3	0.023	26.25	5	0.039	43.75
		125	1													
Quadris Top	2.72 L	difenoconazole		azoxystrobin		12 - 14	10 - 21	5 to 4	56	14	12	0.098 + 0.157	109.76 + 175.84	14	0.197 + 0.183	220.64 + 204.96
		125.83	1.05	200.14	1.67											
		87.48	0.73	251.67	2.1											
Quilt Xcel	2.08 L	propiconazole		azoxystrobin		14	10 to 14	4	56	0	14	0.112 + 0.129	125.44 + 144.48			
		122.24	1.02	141.41	1.18											
Tilt	3.6 L	propiconazole				6	7 to 14	5	30	30	6	0.141	157.92			
		360	3.00													
Procure	480 SC	triflumizole				4 to 8	14 - 21	8 to 4	32	7	4	0.125	140	8	0.25	280
		480	4.00													
Abound	2.08 F	azoxystrobin				10 - 15.5	10 - 14	9 to 5	92.3	14	10	0.163	182	15.5	0.121	135.62
		249.27	2.08													
Flint	50 WG	trifloxystrobin				2 - 3.2	7 - 14	6	19.2	0	2	0.063	70.56	3.2	0.1	112
			0.50													

ACCEPTED
with COMMENTS
In EPA Letter Dated:
AUG 3 0 2011
Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No.
80289-8

GROUP 3 FUNGICIDE

METTLE™
125 ME FUNGICIDE

Active Ingredient:	
Tetraconazole*	11.6%
Other Ingredients	88.4%
Total	100.0%

*1-[2-(2,4-dichlorophenyl)-3-(1,1,2,2,-tetraflurorethoxy)propyl]1H-1,2,4-triazole

Contains 1 lb active ingredient (tetraconazole) per gallon

METTLE 125ME is a trademark of Isagro USA, Inc.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. [If you do not understand this label, find someone to explain it to you in detail.]

FIRST AID	
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have affected person sip a glass of water if able to swallow. • Do not induce vomiting unless told by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For Chemical Emergency Spill Leak Fire Exposure or Accident Call CHEMTREC Day or Night Domestic North America 800-424-9300 International 703-527-3883 (collect calls accepted)	

[See inside booklet for precautionary statements]

EPA Registration No. 80289-8

EPA Establishment No. 5905-IA-01

Manufactured by Isagro SpA for:

Batch code will be placed on the container

ISAGRO USA
Isagro USA, Inc.
430 Davis Drive, Suite 240
Morrisville NC 27560

NET CONTENTS: 30 ounces

26august11 clean

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)
CAUTION / PRECAUCION

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Some materials that are chemical resistant to this product are barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils, and viton ≥14 mils. If you want more options, follow the instructions for category C on an EPA chemical-resistant category selection chart.
Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:
Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product may be toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms adjacent to treatment areas. Exercise caution when making applications of METTLE 125ME and do not apply when atmospheric conditions favor drift or runoff. Do not contaminate water when disposing of equipment wash waters or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instruction and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours for all activities with the exception of 7 days for table grape activities of girdling, cane tying

and cane turning. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves
- Shoes plus socks

GENERAL INFORMATION

METTLE 125ME is formulated as a one pound active ingredient per gallon micro emulsion (ME). The active ingredient in METTLE 125ME is tetraconazole, a triazole fungicide (Group 3) that works by inhibiting demethylation and other processes in sterol biosynthesis. Tetraconazole is a systemic, protectant and curative fungicide and is absorbed quickly into the plant tissue. Optimal disease control is achieved when METTLE 125ME is applied in a regularly scheduled spray program.

Pest Management Strategies

1. **IPM:** Integrate METTLE 125ME into a comprehensive disease and pest management program. Follow cultural practices known to reduce disease development. Consult your local extension specialist, pest control adviser and/or Isagro representative for additional IPM strategies established for your area. Use METTLE 125ME in Agricultural Extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
2. **Tank mixtures:** METTLE 125ME may be used in tank mixtures with fungicides having a different mode of action which are registered/permitted for the same use and are effective against the target pathogen. Tank-mixing METTLE 125ME with other Group 3 fungicides is not recommended. Follow the more restrictive labeling for any tank mix partner. Do not mix with any product which contains a prohibition on tank mixing.

RAINFASTNESS

METTLE 125ME is rainfast 2 hour after application. **Do not** apply if rain is expected within 2 hours of application or disease control may be reduced.

COMPATIBILITY OF MIXTURES

METTLE 125ME is believed to be compatible with most commonly used agricultural fungicides, insecticides, growth regulators, micronutrients and adjuvants. To ensure better results, consult spray compatibility charts available from State Cooperative Extension Service Specialists when comparing tank mixtures and conduct a spray tank compatibility test before mixing this product with other products. To determine the physical compatibility of METTLE 125ME conduct a simple jar test as follows:

1. Add 1 pt. of water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 ml of METTLE 125ME to the quart jar; gently mix until product goes into suspension.
3. Add the proportionate amount of the mix product(s), with agitation. Then dry formulations, then flowables, and then emulsifiable concentrates.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank-mix combination will be uniform and free of suspended particles. The following conditions indicate potential problems with the mixture and it should not be used:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.
6. For best results, use combinations on a small number of plants before treating large areas.

SPRAYER PREPARATION

Before applying METTLE 125ME start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms, must be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. The spray equipment must be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply METTLE 125ME. If two or more products were tank mixed prior to METTLE 125ME application, follow the most restrictive cleanup procedure.

Frequently check all application equipment (pressure, nozzles) to ensure complete coverage of the target crop and accurate rate of pesticide application.

MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, slowly add the METTLE 125ME to the spray tank. Agitation should create a rippling or rolling action on the water surface.
3. If tank-mixing METTLE 125ME with other labeled pesticides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions.
4. No adjuvants should be added to the spray solution.
5. Fill spray tank to desired level with water. Continue agitation until all spray solution has been applied.
6. Mix only the amount of spray solution that can be applied the day of mixing. Apply METTLE 125ME within 24 hours of mixing.

SPRAYER CLEANUP

Clean spray equipment each day following METTLE 125ME application. After METTLE 125ME is applied; use the following steps to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Drain tank completely.
4. Remove all nozzles and screens and rinse them in clean water.

SPRAY DRIFT MANAGEMENT

The interaction of many factors including equipment and weather during application determines the potential for spray drift. Applicators are responsible for considering all of these factors when making application decisions. Where states have more stringent regulations, observe them.

When applying by air, observe drift management restrictions and precautions listed under "AERIAL APPLICATION".

GROUND APPLICATION

Apply product in sufficient water for thorough coverage of vines and fruit. Increase spray volume as vine growth increases. Spray coverage is affected by nozzle type and spacing, sprayer pressure, gallonage per acre (gpa), applicator speed, and other factors.

Airblast (Air Assist) Specific Recommendations for Vineyards: Airblast sprayers deliver the spray mixture into the canopy of vines through a laterally directed airstream. The following drift management practices should by followed when using an Airblast sprayer:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy
- Block off upward pointed nozzles when there is no overhanging canopy
- Use only enough air volume to penetrate the canopy and provide good coverage
- Do not allow the spray to go beyond the edge of the cultivated area (i.e. turn off sprayer when turning at end rows)
- Only spray inward, toward the orchard or vineyard, for applications to the outside rows.

AERIAL APPLICATION

Apply in a minimum of 10 gallons of water per acre. Do not apply under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.

Aerial Spray Drift Reduction Section

Spray Droplet Size: The best drift management strategy is to apply the largest droplets that provide sufficient plant coverage and pest control. Larger droplets reduce drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Spray Droplet Size Control:

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets.

- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.

- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than any other orientations and is the recommended practice.

- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles orientated straight back produce the largest droplets and the lowest drift.

Boom Length: Reducing the effective overall boom length to 70% of the wingspan of fixed-wing aircraft or 80% of a helicopter rotor width may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants.

Application Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, the applicator must compensate for this displacement by adjusting the path of the aircraft or boom on-off. Increase swath adjustment distances, with increasing drift potential (higher wind, height, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Avoid application below 2 mph due to variable wind direction and high inversion potential. Application is not allowed when wind speeds exceed 10 mph due to risk of direct drift to nontarget sensitive crops or locations. **Note:** Wind patterns can be affected by local terrain. All applicators must be familiar with local wind patterns and how they affect spray drift. **Note:** Follow State and local regulations with regard to minimum and maximum wind speeds during aerial application, as they may be more restrictive. Applicators must be familiar with and comply with State and local regulations.

Temperature and Humidity: Applications made during periods of low relative humidity require set-up of equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is typically greatest when conditions are both hot and dry.

Surface Temperature Inversion: Do not apply this product during a local, low level temperature inversion because drift potential is high. Small droplets can be transported in unpredictable directions due to the light and variable winds common during temperature inversions. Temperature inversions are typically characterized by temperatures that increase with altitude and they are common on nights with limited cloud cover and light to no wind. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

GENERAL CHEMIGATION INSTRUCTIONS:

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation system. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other irrigation experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventor (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favor drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add **METTLE 125ME** slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, etc., should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

Sprinkler Chemigation:
The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add **METTLE 125ME** slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, etc., should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

ROTATIONAL CROP RESTRICTIONS

Use the time intervals listed below to determine the minimum required time interval between last Mettle 125 ME application and new crop planting.

Crop	Replant Interval
Soybean, corn, grape, gooseberry, kiwifruit (hardy), maypop, schisandra berry, strawberry, bearberry, bilberry, blueberry (lowbush), cloudberry, lingonberry, muntries, partridgeberry, sugarbeet, peanut and pecan	0 day
All other crops - after application to Subgroups 13-07F and 13-07G	15 days
Small grains after sugarbeet application	40 days
All other crops - after application to sugarbeet	120 days

RESTRICTIONS AND LIMITATIONS

1. **Do not** make more than the specified number of applications of METTLE 125ME to each labeled crop per year.
2. There must be a retreatment interval of at least 14 days between multiple applications of METTLE 125ME
3. A restricted entry interval (REI) of 12 hours is to be followed for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. For early entry into treated areas refer to PPE requirements under the AGRICULTURAL USE REQUIREMENTS section.

Crop Specific Use Rates and Recommendations for: Subgroups 13-07F and 13-07G

Subgroups 13-07F and 13-07G						
Crop	**Target Diseases**	**Product Use Rate per Appliction (fl oz/A)**	**Use Recommendations**	**Maximum Number of Applications per Season**	**Maximum Product Rate per Season**	**Minimum Time from Application to Harvest (PHI)**
Grape	powdery mildew (*Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application at prebloom (12 to 18 inch shoots) and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use a 14 day spray interval when disease pressure is severe or conditions are favorable for powdery mildew.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Grape	black rot (*Guignardia spp.)*	3 to 5 (0.023 to 0.04 lb. ai./A)	Preventive Application: Begin first application at 1 to 3 inches of new shoot growth and continue at 14 day intervals. Use higher rate under heavy disease pressure. When heavy disease pressure requires a shorter application interval, use alternate chemistries in between Mettle applications. Post Infection Application: Apply within 72 hours after the beginning of infection.			
Grape	anthracnose (*Elsinoe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application when new shoots are 1 to 3inches in length and continue on a 14 day schedule.			

Grape	vine diseases following pruning (*Botryosphaeria rhodina, Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora)*	5 (0.04 lb ai./A)	Apply as a directed spray within 24 hours of pruning at 5 oz per acre in 25 to 50 gallons of water ensuring adequate coverage. For additional more detailed use directions read below*	2		
Gooseberry	powdery mildew (*Sphaerotheca* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications at pre-bloom and continue using a 14 day spray interval. Rotate to other chemical if more than 2 applications are needed.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Gooseberry	anthracnose (*Drepanopeziza* spp.)		Begin application when the first leaf unfolds and repeat on a 10 to 14 day spray interval when disease conditions remain favorable.			
Amur river grape Kiwifruit, hardy Maypop Schisandra berry (cultivars, varieties, and/or hybrids of these)	powdery mildew (*Sphaerotheca* spp.; *Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
strawberry	powdery mildew (*Sphaerotheca* spp.) leaf spot (*Mycosphaerella* spp.) leaf blight (*Phomopsis* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application prior to disease development and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use higher application rates and a 14 day spray interval when growing susceptible varieties and/or when conditions	4	20 fluid ounces (0.16 lb ai) per acre	0 days

			are favorable for heavy disease pressure.			
blueberry, lowbush bearberry bilberry cloudberry lingonberry muntries partridge berry (cultivars, varieties, and/or hybrids of these)	(*Sphaerotheca* spp.; *Microsphaera* spp.; *Oidium* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	4	20 fluid ounces (0.16 lb ai) per acre	0 days

Botrytis Suppression
Mettle 125 ME, when applied at 4 to 5 ounces per acre using a 14-day powdery mildew spray schedule, will enhance the activity of registered Botrytis rot fungicides.

***Additional more Detailed Use directions for Applications to Aid in the Control of Listed Vine Diseases Following Grapevine Pruning**

Apply Mettle 125 ME at 5 ounces per acre using a final spray volume of 25 to 50 gallons water per acre to protect against grapevine pruning diseases caused by *Botryosphaeria* spp., *Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora.* An adjuvant such as an organosilicone may be used to increase penetration into the pruned wood surfaces. It is the responsibility of the applicator to verify the crop safety of the adjuvant under the environmental conditions present at the time of application.

Apply Mettle 125 ME within 24 hours of pruning. Regardless of spray volume, it is recommended that a spray dye be used during the application followed by visual inspection to verify thorough coverage of the pruning cuts and susceptible tissue. A second application of Mettle 125 ME is recommended approximately 14 days later if rainfall or high humidity persist resulting in environmental conditions favorable for disease development.

If double pruning of the vineyard is being performed, treatment does not need to be performed after the first, non-selective pruning pass if environmental conditions do not favor infection and disease development into tissue beyond where the final pruning cuts will occur. Under this scenario, apply Mettle 125 ME within 24 hours of making the second pruning cuts. The second application of Mettle 125 ME should be applied 14 days after the first application when rainfall and high humidity favor infection and disease development. If the risk of infection and rapid disease development is high, resulting in development of disease into tissue past where the second pruning cuts will be made, Mettle 125 ME should be applied after the first non-selective pruning cuts followed by a second application after the second and final pruning cuts are made. Again, the use of a spray dye is recommended to ensure thorough coverage of all cut surfaces.

Use Restricions: Do not apply more than 10 oz (0.04 lb ai) Mettle 125 ME per acre per year including applications made for powdery mildew and black rot control.

150415

Crop Specific Use Rates and Recommendations for: Sugarbeets

Sugarbeets			
Disease	Product Use Rate	When to Apply	Special Use Instructions
Cercospora leafspot, Powdery Mildew	13 fl oz/A (0.10 lb. ai./A)	Apply METTLE 125ME when conditions are favorable for Cercospora leafspot or powdery mildew.	Do not apply within 14 days of harvest. Do not make more than one (1) application of METTLE 125 ME per year. **Rotational Crop Restrictions:** Do not plant crops other than grapes, sugarbeets and small grains within 120 days following the last application of METTLE 125ME, with the exception of small grains which may be planted 40 days after the last application and grapes which may be planted 15 days after the last application.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed through storage and disposal.

Pesticide Storage: Store under well-vented, cool and dry storage conditions. Do not store under moist conditions.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Type: This is a nonrefillable container. Do not reuse or refill this container.

Container Disposal: Empty the package completely and triple rinse container (or equivalent) promptly after emptying with water to be used for application. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller,

	or, if allowed by state and local authorities, by burning. If burned stay out of smoke.
Triple Rinsing Instructions:	Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire label before using this product, including this Limitation of Warranty and Liability.

If the terms are not acceptable, return the product at once unopened for a refund of the purchase price.

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Directions for Use, subject to the inherent risks described below, when used in accordance with the Directions for Use under normal conditions.
TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ISAGRO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Buyers and Users of this product must be aware that there are inherent unintended risks associated to the use of this product, independent from the control of Isagro. These risks include, but are not limited to, weather conditions, soil factors, moisture conditions, diseases, irrigation practices, condition of the crop at the time of application, materials which are present in the tank mix with this product or prior to the application of it, cultural practices or the manner of use or application, all risks which are impossible to eliminate. The Buyers and Users should be aware that these factors may cause: ineffectiveness of the product, reduction of harvested yield of the crop (entirely or partially), crop injury or injury to non-target crops or plants or to rotational crops caused by carryover in the soil, resistance of the target weeds to this product. Therefore additional care, treatment and expense are required to take the crop to harvest.

If the Buyer does not agree with the acceptance of these risks, then THE PRODUCT SHOULD NOT BE APPLIED. To the extent consistent with applicable law, by applying this product the Buyer acknowledges and accepts these inherent unintended risks and AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

To the extent consistent with applicable law, i ISAGRO or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product (including claims based in contract, negligence, strict liability, other tort or otherwise). To the extent consistent with applicable law, the exclusive remedy of the User or Buyer and the exclusive Liability of Isagro or Seller shall be the return of the purchase price of the product, or at the election of Isagro or Seller, the replacement of the product.

To the extent consistent with applicable law, this Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

Isagro or its Seller must have prompt notice of any claim so that an immediate inspection of Buyer's or User's can be made. To the extent consistent with applicable law, if Buyer and User do not notify Isagro or Seller of any claims, in proper time, it shall be barred from obtaining any remedy.

To the extent consistent with applicable law, Buyers and Users are deemed to have accepted the terms of this Limitation of Warranty and Liability, which may not be modified by any verbal or written agreement.

Made in U.S.A.

clean 26august11

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GROUP 3 FUNGICIDE

METTLE®

125 ME FUNGICIDE

ISAGRO USA

Manufactured by Isagro SpA for:
Isagro USA, Inc., 430 Davis Drive,
Suite 240 - Morrisville, NC 27560

Active Ingredient:	
Tetraconazole*	11.6%
Other Ingredients	88.4%
Total	100.0%

*1-[2-(2,4-dichlorophenyl)-3-(1,1,2,2,-tetraflurorethoxy)propyl]1H-1,2,4-triazole

Contains 1 lb active ingredient (tetraconazole) per gallon

METTLE is a registered trademark of Isagro USA, Inc.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
[If you do not understand this label, find someone to explain it to you in detail.]

[See inside booklet for precautionary statements]

EPA Registration No. 80289-8 EPA Establishment No. 5905-IA-01

Batch code will be placed on the container

NET CONTENTS: 30 fl. ounces

file: 60586_book_art
folder: 60586_Isagro_204032-10
colors: Black, 3005, 355, Reflex Blue
☐ dp proofed _____

created by customer
alt: 10-24-12 bm
size: 3"(w) x 3.5"(h)

Appendix 2

FIRST AID	
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have affected person sip a glass of water if able to swallow. • Do not induce vomiting unless told by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For Chemical Emergency Spill Leak Fire Exposure or Accident Call CHEMTREC Day or Night Domestic North America 800-424-9300 International 703-527-3883 (collect calls accepted)	

PRECAUTIONARY STATEMENTS
Hazards To Humans and Domestic Animals
CAUTION / PRECAUCION

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Some materials that are chemical resistant to this product are barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils, and viton ≥14 mils. If you want more options, follow the instructions for category C on an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product may be toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms adjacent to treatment areas. Exercise caution when making applications of METTLE 125 ME and do not apply when atmospheric conditions favor drift or runoff. Do not contaminate water when disposing of equipment wash waters or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instruction and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves
- Shoes plus socks

GENERAL INFORMATION

METTLE 125 ME is formulated as a one pound active ingredient per gallon micro emulsion (ME). The active ingredient in METTLE 125 ME is tetraconazole, a triazole fungicide (Group 3) that works by inhibiting demethylation and other processes in sterol biosynthesis. Tetraconazole is a systemic, protectant and curative fungicide and is

absorbed quickly into the plant tissue. Optimal disease control is achieved when METTLE 125 ME is applied in a regularly scheduled spray program.

Pest Management Strategies

1. **IPM:** Integrate METTLE 125 ME into a comprehensive disease and pest management program. Follow cultural practices known to reduce disease development. Consult your local extension specialist, pest control adviser and/or Isagro representative for additional IPM strategies established for your area. Use METTLE 125 ME in Agricultural Extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
2. **Tank mixtures:** METTLE 125 ME may be used in tank mixtures with fungicides having a different mode of action which are registered/permitted for the same use and are effective against the target pathogen. Tank-mixing METTLE 125 ME with other Group 3 fungicides is not recommended. Follow the more restrictive labeling for any tank mix partner. Do not mix with any product which contains a prohibition on tank mixing.

RAINFASTNESS

METTLE 125 ME is rainfast 2 hour after application. **Do not** apply if rain is expected within 2 hours of application or disease control may be reduced.

COMPATIBILITY OF MIXTURES

METTLE 125 ME is believed to be compatible with most commonly used agricultural fungicides, insecticides, growth regulators, micronutrients and adjuvants. To ensure better results, consult spray

compatibility charts available from State Cooperative Extension Service Specialists when comparing tank mixtures and conduct a spray tank compatibility test before mixing this product with other products. To determine the physical compatibility of METTLE 125 ME conduct a simple jar test as follows:

1. Add 1 pt. of water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 ml of METTLE 125 ME to the quart jar; gently mix until product goes into suspension.
3. Add the proportionate amount of the mix product(s), with agitation. Then dry formulations, then flowables, then emulsifiable concentrates, and then adjuvants.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank-mix combination will be uniform and free of suspended particles. The following conditions indicate potential problems with the mixture and it should not be used:
   a) Layer of oil or globules on the mixture's surface.
   b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
   c) Clabbering: Thickening texture (coagulated) like gelatin.
6. For best results, use combinations on a small number of plants before treating large areas.

SPRAYER PREPARATION

Before applying METTLE 125 ME start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms, must be cleaned to ensure no residue from the previous

spraying operation remains in the sprayer. The spray equipment must be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply METTLE 125 ME. If two or more products were tank mixed prior to METTLE 125 ME application, follow the most restrictive cleanup procedure.

Frequently check all application equipment (pressure, nozzles) to ensure complete coverage of the target crop and accurate rate of pesticide application.

MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, slowly add the METTLE 125 ME to the spray tank. Agitation should create a rippling or rolling action on the water surface.
3. If tank-mixing METTLE 125 ME with other labeled pesticides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions.
4. Adjuvants should be added to the spray solution as required.
5. Fill spray tank to desired level with water. Continue agitation until all spray solution has been applied.
6. Mix only the amount of spray solution that can be applied the day of mixing. Apply METTLE 125 ME within 24 hours of mixing.

SPRAYER CLEANUP

Clean spray equipment each day following METTLE 125 ME application. After METTLE 125 ME is applied; use the following steps to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Drain tank completely.
4. Remove all nozzles and screens and rinse them in clean water.

SPRAY DRIFT MANAGEMENT

The interaction of many factors including equipment and weather during application determines the potential for spray drift. Applicators are responsible for considering all of these factors when making application decisions. Where states have more stringent regulations, observe them.

When applying by air, observe drift management restrictions and precautions listed under "AERIAL APPLICATION".

GROUND APPLICATION

Apply product in sufficient water for thorough coverage of vines and fruit. Increase spray volume as vine growth increases. Spray coverage is affected by nozzle type and spacing, sprayer pressure, gallonage per acre (gpa), applicator speed, and other factors.

Airblast (Air Assist) Specific Recommendations for Vineyards: Airblast sprayers deliver the spray mixture into the canopy of vines through a laterally directed airstream. The following drift management practices should by followed when using an Airblast sprayer:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy

- Block off upward pointed nozzles when there is no overhanging canopy
- Use only enough air volume to penetrate the canopy and provide good coverage
- Do not allow the spray to go beyond the edge of the cultivated area (i.e. turn off sprayer when turning at end rows)
- Only spray inward, toward the orchard or vineyard, for applications to the outside rows.

AERIAL APPLICATION

Apply in a minimum of 10 gallons of water per acre. Do not apply under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.

Aerial Spray Drift Reduction Section

Spray Droplet Size: The best drift management strategy is to apply the largest droplets that provide sufficient plant coverage and pest control. Larger droplets reduce drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Spray Droplet Size Control:

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets.

- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than any other orientations and is the recommended practice.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles orientated straight back produce the largest droplets and the lowest drift.

Boom Length: Reducing the effective overall boom length to 70% of the wingspan of fixed-wing aircraft or 80% of a helicopter rotor width may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants.

Application Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, the applicator must compensate for this displacement by adjusting the path of the aircraft or boom on-off. Increase swath adjustment distances, with increasing drift potential (higher wind, height, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Avoid application below 2 mph due to variable wind direction and high inversion potential. Application is not allowed when wind speeds exceed 10 mph due to risk of direct drift to nontarget sensitive crops or locations. **Note:** Wind patterns can be affected by local terrain. All applicators must be familiar with local

wind patterns and how they affect spray drift. **Note:** Follow State and local regulations with regard to minimum and maximum wind speeds during aerial application, as they may be more restrictive. Applicators must be familiar with and comply with State and local regulations.

Temperature and Humidity: Applications made during periods of low relative humidity require set-up of equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is typically greatest when conditions are both hot and dry.

Surface Temperature Inversion: Do not apply this product during a local, low level temperature inversion because drift potential is high. Small droplets can be transported in unpredictable directions due to the light and variable winds common during temperature inversions. Temperature inversions are typically characterized by temperatures that increase with altitude and they are common on nights with limited cloud cover and light to no wind. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

GENERAL CHEMIGATION INSTRUCTIONS:

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation system. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other irrigation experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventor (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favor drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add METTLE 125 ME slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Tank mix partners should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125 ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

Sprinkler Chemigation:

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add METTLE 125 ME slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Tank mix partners should be added

last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125 ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

ROTATIONAL CROP RESTRICTIONS

Use the time intervals listed below to determine the minimum required time interval between last Mettle 125 ME application and new crop planting.

Crop	Replant Interval
Soybean, corn, grape, gooseberry, kiwifruit (hardy), maypop, schisandra berry, strawberry, bearberry, bilberry, blueberry (lowbush), cloudberry, lingonberry, muntries, partridgeberry, sugarbeet, peanut and pecan	0 day
All other crops - after application to Subgroups 13-07F and 13-07G	15 days
Small grains after sugarbeet application	40 days
All other crops - after application to sugarbeet	120 days

RESTRICTIONS AND LIMITATIONS

1. **Do not** make more than the specified number of applications of METTLE 125 ME to each labeled crop per year.
2. There must be a retreatment interval of at least 14 days between multiple applications of METTLE 125 ME.
3. A restricted entry interval (REI) of 12 hours is to be followed for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. For early entry into treated areas refer to PPE requirements under the AGRICULTURAL USE REQUIREMENTS section.

Crop Specific Use Rates and Subgroups 13-07F

Subgroups 13-07F

Crop	Target Diseases	Product Use Rate per Application (fl oz/A)
Grape	powdery mildew (*Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)

Recommendations for: and 13-07G

and 13-07G

Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Begin application at prebloom (12 to 18 inch shoots) and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use a 14 day spray interval when disease pressure is severe or conditions are favorable for powdery mildew.	3	10 fluid ounces (0.08 lb ai) per acre	14 days

Crop Specific Use Rates and Subgroups 13-07F

Subgroups 13-07F		
Crop	**Target Diseases**	**Product Use Rate per Application (fl oz/A)**
Grape	black rot (*Guignardia* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)

Recommendations for: and 13-07G

and 13-07G			
Use Recommendations	**Maximum Number of Applications per Season**	**Maximum Product Rate per Season**	**Minimum Time from Application to Harvest (PHI)**
Preventive Application: Begin first application at 1 to 3 inches of new shoot growth and continue at 14 day intervals. Use higher rate under heavy disease pressure. When heavy disease pressure requires a shorter application interval, use alternate chemistries in between Mettle 125 ME applications. Post Infection Application: Apply within 72 hours after the beginning of infection.	3	10 fluid ounces (0.08 lb ai) per acre	14 days

Crop Specific Use Rates and Subgroups 13-07F

Subgroups 13-07F		
Crop	Target Diseases	Product Use Rate per Application (fl oz/A)
Grape	anthracnose (*Elsinoe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)
Grape	vine diseases following pruning (*Botryosphaeria rhodina, Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora*)	5 (0.04 lb ai./A)

Recommendations for: and 13-07G

and 13-07G			
Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Begin application when new shoots are 1 to 3 inches in length and continue on a 14 day schedule.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Apply as a directed spray within 24 hours of pruning at 5 oz per acre in 25 to 50 gallons of water ensuring adequate coverage. For additional more detailed use directions read below*	2		

***Additional more Detailed Use directions for Applications to Aid in the Control of Listed Vine Diseases Following Grapevine Pruning**

Apply Mettle 125 ME at 5 ounces per acre using a final spray volume of 25 to 50 gallons water per acre to protect against grapevine pruning diseases caused by *Botryosphaeria spp., Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora*. An adjuvant may be used to increase penetration into the pruned wood surfaces. It is the responsibility of the applicator to verify the crop safety of the adjuvant under the environmental conditions present at the time of application.

Apply Mettle 125 ME within 24 hours of pruning. Regardless of spray volume, it is recommended that a spray dye be used during the application followed by visual inspection to verify thorough coverage of the pruning cuts and susceptible tissue. A second application of Mettle 125 ME is recommended approximately 14 days later if rainfall or high humidity persist resulting in environmental conditions favorable for disease development.

If double pruning of the vineyard is being performed, treatment does not need to be performed after the first, non-selective pruning pass if environmental conditions do not favor infection and disease development into tissue beyond where the final pruning cuts will occur. Under this scenario, apply Mettle 125 ME within 24 hours of making the second pruning cuts. The second application of Mettle 125 ME should be applied 14 days after the first application when rainfall and high humidity favor infection and disease development. If the risk of infection and rapid disease development is high, resulting in development of disease into tissue past where the second pruning cuts will be made. Mettle 125 ME should be applied after the first non-selective pruning cuts followed by a second application after the second and final pruning cuts are made. Again, the use of a spray dye is recommended to ensure thorough coverage of all cut surfaces.

Use Restrictions: Do not apply more than 10 oz (0.04 lb ai) Mettle 125 ME per acre per year including applications made for powdery mildew and black rot control.

Crop Specific Use Rates and Subgroups 13-07F

Subgroups 13-07F		
Crop	Target Diseases	Product Use Rate per Application (fl oz/A)
Gooseberry	powdery mildew (*Sphaerotheca* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)
Gooseberry	anthracnose (*Drepanopeziza* spp.)	

Recommendations for: and 13-07G

and 13-07G			
Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Begin applications at pre-bloom and continue using a 14 day spray interval. Rotate to other chemical if more than 2 applications are needed.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Begin application when the first leaf unfolds and repeat on a 10 to 14 day spray interval when disease conditions remain favorable.			

Crop Specific Use Rates and Subgroups 13-07F

Subgroups 13-07F

Crop	Target Diseases	Product Use Rate per Application (fl oz/A)
Amur river grape	powdery mildew (*Sphaerotheca* spp.; *Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)
Kiwifruit, hardy		
Maypop		
Schisandra berry		
(cultivars, varieties, and/or hybrids of these)		
strawberry	powdery mildew (*Podosphaera aphanis*)	3 to 5 (0.023 to 0.04 lb. ai./A)
	leaf spot (*Mycosphaerella* spp.)	
	leaf blight (*Phomopsis* spp.)	

Recommendations for: and 13-07G

and 13-07G

Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Begin application prior to disease development and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use higher application rates and a 14 day spray interval when growing susceptible varieties and/or when conditions are favorable for heavy disease pressure.	4	20 fluid ounces (0.16 lb ai) per acre	0 days

Crop Specific Use Rates and Subgroups 13-07F

Subgroups 13-07F		
Crop	Target Diseases	Product Use Rate per Application (fl oz/A)
blueberry, lowbush	(*Sphaerotheca* spp.: *Microsphaera* spp.: *Oidium* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)
bearberry		
bilberry		
cloudberry		
lingonberry		
muntries		
partridge berry		
(cultivars, varieties, and/or hybrids of these)		

Recommendations for: and 13-07G

and 13-07G			
Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	4	20 fluid ounces (0.16 lb ai) per acre	0 days

Botrytis Suppression

Mettle 125 ME, when applied at 4 to 5 ounces per acre using a 14-day powdery mildew spray schedule, will enhance the activity of registered Botrytis rot fungicides.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed through storage and disposal.

Pesticide Storage: Store under well-vented, cool and dry storage conditions. Do not store under moist conditions.

Pesticide Disposal: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Type: This is a nonrefillable container. Do not reuse or refill this container.

Container Disposal: Empty the package completely and triple rinse container (or equivalent) promptly after emptying with water to be used for application. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller, or, if allowed by state and local authorities, by burning. If burned stay out of smoke.

(continued)

STORAGE AND DISPOSAL *(continued)*

Triple Rinsing Instructions: Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire label before using this product, including this Limitation of Warranty and Liability.

If the terms are not acceptable, return the product at once unopened for a refund of the purchase price.

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Directions for Use, subject to the inherent risks described below, when used in accordance with the Directions for Use under normal conditions.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ISAGRO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Buyers and Users of this product must be aware that there are inherent unintended risks associated to the use of this product, independent from the control of Isagro. These risks include, but are not limited to, weather conditions, soil factors, moisture conditions, diseases, irrigation practices, condition of the crop at the time of application, materials which are present in the tank mix with this product or prior to the application of it, cultural practices or the manner of use or application, all risks which are impossible to eliminate. The Buyers and Users should be aware that these factors may cause: ineffectiveness of the product, reduction of harvested yield of the crop (entirely or partially), crop injury or injury to non-target crops or plants or to rotational crops caused by carryover in the soil, resistance of the target weeds to this product. Therefore additional care, treatment and expense are required to take the crop to harvest.

If the Buyer does not agree with the acceptance of these risks, then THE PRODUCT SHOULD NOT BE APPLIED. To the extent consistent with applicable law, by applying this product the Buyer acknowledges and accepts these inherent unintended risks and AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

To the extent consistent with applicable law, ISAGRO or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product (including claims based in contract, negligence, strict liability, other tort or otherwise). To the extent consistent with applicable law, the exclusive remedy of the User or Buyer and the exclusive Liability of Isagro or Seller shall be the return of the purchase price of the product, or at the election of Isagro or Seller, the replacement of the product.

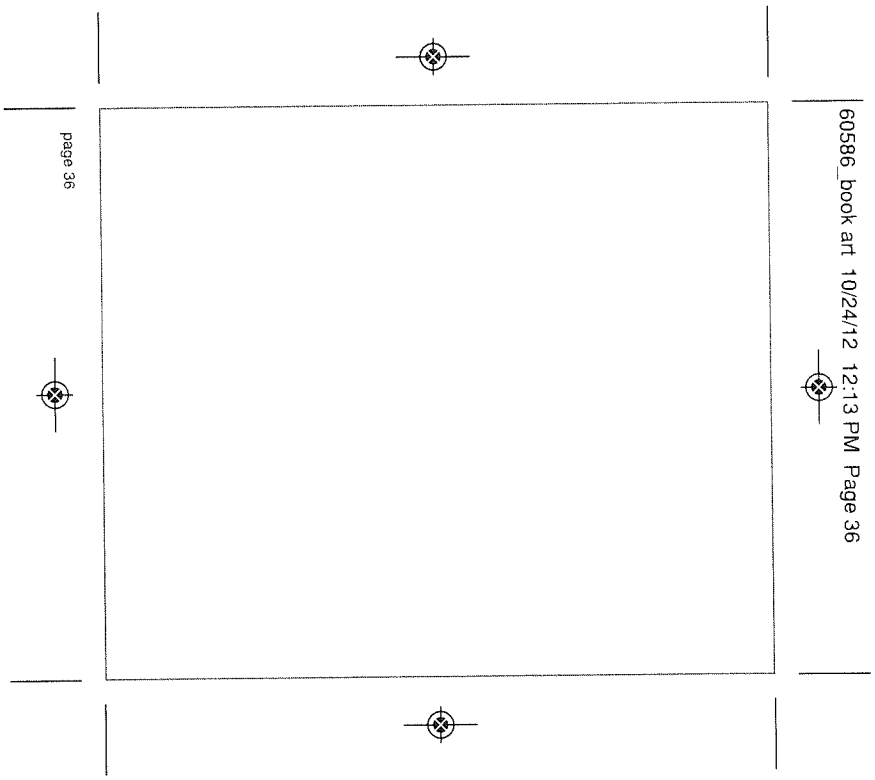
To the extent consistent with applicable law, this Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

Isagro or its Seller must have prompt notice of any claim so that an immediate inspection of Buyer's or User's can be made. To the extent consistent with applicable law, if Buyer and User do not notify Isagro or Seller of any claims, in proper time, it shall be barred from obtaining any remedy.

To the extent consistent with applicable law, Buyers and Users are deemed to have accepted the terms of this Limitation of Warranty and Liability, which may not be modified by any verbal or written agreement.

Made in U.S.A.

ESL 100412 REV102412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GROUP 3 FUNGICIDE

METTLE®

125 ME FUNGICIDE

ISAGRO USA

Manufactured by Isagro SpA for:
Isagro USA, Inc., 430 Davis Drive,
Suite 240 - Morrisville, NC 27560

Active Ingredient:	
Tetraconazole*	11.6%
Other Ingredients	88.4%
Total	100.0%

*1-[2-(2,4-dichlorophenyl)-3-(1,1,2,2,-tetraflurorethoxy)propyl]1H-1,2,4-triazole

Contains 1 lb active ingredient (tetraconazole) per gallon

METTLE is a registered trademark of Isagro USA, Inc.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
[If you do not understand this label, find someone to explain it to you in detail.]

[See inside booklet for precautionary statements]

EPA Registration No. 80289-8 EPA Establishment No. 5905-IA-01

Batch code will be placed on the container

NET CONTENTS: 30 fl. ounces

file: 60587_base_art
folder: 60587_Isagro_204032-10
colors: Black, 3005, 355, Reflex Blue
☐ dp proofed _____

created by customer
alt: 10-24-12 bm
size: 3.5"(w) x 3.5"(h)

60584_book art 10/25/12 12:06 PM Page 1

GROUP 3 FUNGICIDE

METTLE®

125 ME FUNGICIDE

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Manufactured by Isagro SpA for:
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Active Ingredient:	
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CAUTION

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[If you do not understand this label, find someone to explain it to you in detail.]

[See inside booklet for precautionary statements]

EPA Registration No. 80289-8

EPA Establishment No. 5905-IA-01

Batch code will be placed on the container

NET CONTENTS: 1 gallon

file: 60584_book_art
folder: 60584_Isagro_204032-9
colors: Black, 3005, 355, Reflex Blue
☐ dp proofed____

created by customer
alt: 10-24-12 bm
size: 4.625"(w) x 5.125"(h)

page 1

FIRST AID	
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have affected person sip a glass of water if able to swallow. • Do not induce vomiting unless told by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For Chemical Emergency Spill Leak Fire Exposure or Accident Call CHEMTREC Day or Night Domestic North America 800-424-9300 International 703-527-3883 (collect calls accepted)	

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)
CAUTION / PRECAUCION

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Some materials that are chemical resistant to this product are barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils, and viton ≥14 mils. If you want more options, follow the instructions for category C on an EPA chemical-resistant category selection chart.

Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product may be toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms adjacent to treatment areas. Exercise caution when making applications of METTLE 125 ME and do not apply when atmospheric conditions favor drift or runoff. Do not contaminate water when disposing of equipment wash waters or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instruction and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves
- Shoes plus socks

GENERAL INFORMATION

METTLE 125 ME is formulated as a one pound active ingredient per gallon micro emulsion (ME). The active ingredient in METTLE 125 ME is tetraconazole, a triazole fungicide (Group 3) that works by inhibiting demethylation and other processes in sterol biosynthesis. Tetraconazole is a systemic, protectant and curative fungicide and is absorbed quickly into the plant tissue. Optimal disease control is achieved when METTLE 125 ME is applied in a regularly scheduled spray program.

Pest Management Strategies

1. **IPM:** Integrate METTLE 125 ME into a comprehensive disease and pest management program. Follow cultural practices known to reduce disease development. Consult your local extension specialist, pest control adviser and/or Isagro representative for additional IPM strategies established for your area. Use METTLE 125 ME in Agricultural Extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
2. **Tank mixtures:** METTLE 125 ME may be used in tank mixtures with fungicides having a different mode of action which are registered/permitted for the same use and are effective against the target pathogen. Tank-mixing METTLE 125 ME with other Group 3 fungicides is not recommended. Follow the more restrictive labeling for any tank mix partner. Do not mix with any product which contains a prohibition on tank mixing.

RAINFASTNESS

METTLE 125 ME is rainfast 2 hour after application. **Do not** apply if rain is expected within 2 hours of application or disease control may be reduced.

COMPATIBILITY OF MIXTURES

METTLE 125 ME is believed to be compatible with most commonly used agricultural fungicides, insecticides, growth regulators, micronutrients and adjuvants. To ensure better results, consult spray compatibility charts available from State Cooperative Extension Service Specialists when comparing tank mixtures and conduct a spray tank compatibility test before mixing this product with other products. To determine the physical compatibility of METTLE 125 ME conduct a simple jar test as follows:

1. Add 1 pt. of water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 ml of METTLE 125 ME to the quart jar; gently mix until product goes into suspension.
3. Add the proportionate amount of the mix product(s), with agitation. Then dry formulations, then flowables, then emulsifiable concentrates, and then adjuvants.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank-mix combination will be uniform and free of suspended particles. The following conditions indicate potential problems with the mixture and it should not be used:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.
6. For best results, use combinations on a small number of plants before treating large areas.

SPRAYER PREPARATION

Before applying METTLE 125 ME start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms, must be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. The spray equipment must be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply METTLE 125 ME. If two or more products were tank mixed prior to METTLE 125 ME application, follow the most restrictive cleanup procedure.

Frequently check all application equipment (pressure, nozzles) to ensure complete coverage of the target crop and accurate rate of pesticide application.

MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, slowly add the METTLE 125 ME to the spray tank. Agitation should create a rippling or rolling action on the water surface.
3. If tank-mixing METTLE 125 ME with other labeled pesticides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions.
4. Adjuvants should be added to the spray solution as required.
5. Fill spray tank to desired level with water. Continue agitation until all spray solution has been applied.
6. Mix only the amount of spray solution that can be applied the day of mixing. Apply METTLE 125 ME within 24 hours of mixing.

SPRAYER CLEANUP

Clean spray equipment each day following METTLE 125 ME application. After METTLE 125 ME is applied; use the following steps to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Drain tank completely.
4. Remove all nozzles and screens and rinse them in clean water.

SPRAY DRIFT MANAGEMENT

The interaction of many factors including equipment and weather during application determines the potential for spray drift. Applicators are responsible for considering all of these factors when making application decisions. Where states have more stringent regulations, observe them.

When applying by air, observe drift management restrictions and precautions listed under "AERIAL APPLICATION".

GROUND APPLICATION

Apply product in sufficient water for thorough coverage of vines and fruit. Increase spray volume as vine growth increases. Spray coverage is affected by nozzle type and spacing, sprayer pressure, gallonage per acre (gpa), applicator speed, and other factors.

Airblast (Air Assist) Specific Recommendations for Vineyards: Airblast sprayers deliver the spray mixture into the canopy of vines through a laterally directed airstream. The following drift management practices should by followed when using an Airblast sprayer:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy
- Block off upward pointed nozzles when there is no overhanging canopy
- Use only enough air volume to penetrate the canopy and provide good coverage
- Do not allow the spray to go beyond the edge of the cultivated area (i.e. turn off sprayer when turning at end rows)
- Only spray inward, toward the orchard or vineyard, for applications to the outside rows.

AERIAL APPLICATION

Apply in a minimum of 10 gallons of water per acre. Do not apply under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.

Aerial Spray Drift Reduction Section

Spray Droplet Size: The best drift management strategy is to apply the largest droplets that provide sufficient plant coverage and pest control. Larger droplets reduce drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).

Spray Droplet Size Control:

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.

- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than any other orientations and is the recommended practice.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles orientated straight back produce the largest droplets and the lowest drift.

Boom Length: Reducing the effective overall boom length to 70% of the wingspan of fixed-wing aircraft or 80% of a helicopter rotor width may further reduce drift without reducing swath width.

Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants.

Application Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, the applicator must compensate for this displacement by adjusting the path of the aircraft or boom on-off. Increase swath adjustment distances, with increasing drift potential (higher wind, height, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Avoid application below 2 mph due to variable wind direction and high inversion potential. Application is not allowed when wind speeds exceed 10 mph due to risk of direct drift to nontarget sensitive crops or locations. **Note:** Wind patterns can be affected by local terrain. All applicators must be familiar with local wind patterns and how they affect spray drift. **Note:** Follow State and local regulations with regard to minimum and maximum wind speeds during aerial application, as they may be more restrictive. Applicators must be familiar with and comply with State and local regulations.

Temperature and Humidity: Applications made during periods of low relative humidity require set-up of equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is typically greatest when conditions are both hot and dry.

Surface Temperature Inversion: Do not apply this product during a local, low level temperature inversion because drift potential is high. Small droplets can be transported in unpredictable directions due to the light and variable winds common during temperature inversions. Temperature inversions are typically characterized by temperatures that increase with altitude and they are common on nights with limited cloud cover and light to no wind. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

GENERAL CHEMIGATION INSTRUCTIONS:

Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation system. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other irrigation experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventor (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favor drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add METTLE 125 ME slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Tank mix partners should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125 ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

Sprinkler Chemigation:

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add METTLE 125 ME slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Tank mix partners should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125 ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

ROTATIONAL CROP RESTRICTIONS

Use the time intervals listed below to determine the minimum required time interval between last Mettle 125 ME application and new crop planting.

Crop	Replant Interval
Soybean, corn, grape, gooseberry, kiwifruit (hardy), maypop, schisandra berry, strawberry, bearberry, bilberry, blueberry (lowbush), cloudberry, lingonberry, muntries, partridgeberry, sugarbeet, peanut and pecan	0 day
All other crops - after application to Subgroups 13-07F and 13-07G	15 days
Small grains after sugarbeet application	40 days
All other crops - after application to sugarbeet	120 days

RESTRICTIONS AND LIMITATIONS

1. **Do not** make more than the specified number of applications of METTLE 125 ME to each labeled crop per year.
2. There must be a retreatment interval of at least 14 days between multiple applications of METTLE 125 ME.
3. A restricted entry interval (REI) of 12 hours is to be followed for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. For early entry into treated areas refer to PPE requirements under the AGRICULTURAL USE REQUIREMENTS section.

Crop Specific Use Rates and Recommendations for: Subgroups 13-07F and 13-07G

Subgroups 13-07F and 13-07G						
Crop	Target Diseases	Product Use Rate per Application (fl oz/A)	Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Grape	powdery mildew (*Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application at prebloom (12 to 18 inch shoots) and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use a 14 day spray interval when disease pressure is severe or conditions are favorable for powdery mildew.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Grape	black rot (*Guignardia* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Preventive Application: Begin first application at 1 to 3 inches of new shoot growth and continue at 14 day intervals. Use higher rate under heavy disease pressure. When heavy disease pressure requires a shorter application interval, use alternate chemistries in between Mettle 125 ME applications. Post Infection Application: Apply within 72 hours after the beginning of infection.			

Crop Specific Use Rates and Recommendations for: Subgroups 13-07F and 13-07G

Subgroups 13-07F and 13-07G						
Crop	**Target Diseases**	**Product Use Rate per Application (fl oz/A)**	**Use Recommendations**	**Maximum Number of Applications per Season**	**Maximum Product Rate per Season**	**Minimum Time from Application to Harvest (PHI)**
Grape	anthracnose (*Elsinoe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application when new shoots are 1 to 3 inches in length and continue on a 14 day schedule.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Grape	vine diseases following pruning (*Botryosphaeria rhodina, Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora*)	5 (0.04 lb ai./A)	Apply as a directed spray within 24 hours of pruning at 5 oz per acre in 25 to 50 gallons of water ensuring adequate coverage. For additional more detailed use directions read below*	2		

***Additional more Detailed Use directions for Applications to Aid in the Control of Listed Vine Diseases Following Grapevine Pruning**

Apply Mettle 125 ME at 5 ounces per acre using a final spray volume of 25 to 50 gallons water per acre to protect against grapevine pruning diseases caused by *Botryosphaeria spp., Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora.* An adjuvant may be used to increase penetration into the pruned wood surfaces. It is the responsibility of the applicator to verify the crop safety of the adjuvant under the environmental conditions present at the time of application.

Apply Mettle 125 ME within 24 hours of pruning. Regardless of spray volume, it is recommended that a spray dye be used during the application followed by visual inspection to verify thorough coverage of the pruning cuts and susceptible tissue. A second application of Mettle 125 ME is recommended approximately 14 days later if rainfall or high humidity persist resulting in environmental conditions favorable for disease development.

If double pruning of the vineyard is being performed, treatment does not need to be performed after the first, non-selective pruning pass if environmental conditions do not favor infection and disease development into tissue beyond where the final pruning cuts will occur. Under this scenario, apply Mettle 125 ME within 24 hours of making the second pruning cuts. The second application of Mettle 125 ME should be applied 14 days after the first application when rainfall and high humidity favor infection and disease development. If the risk of infection and rapid disease development is high, resulting in development of disease into tissue past where the second pruning cuts will be made, Mettle 125 ME should be applied after the first non-selective pruning cuts followed by a second application after the second and final pruning cuts are made. Again, the use of a spray dye is recommended to ensure thorough coverage of all cut surfaces.

Use Restrictions: Do not apply more than 10 oz (0.04 lb ai) Mettle 125 ME per acre per year including applications made for powdery mildew and black rot control.

Crop Specific Use Rates and Recommendations for: Subgroups 13-07F and 13-07G

Subgroups 13-07 and 13-07G						
Crop	Target Diseases	Product Use Rate per Application (fl oz/A)	Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Gooseberry	powdery mildew (*Sphaerotheca* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications at pre-bloom and continue using a 14 day spray interval. Rotate to other chemical if more than 2 applications are needed.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
Gooseberry	anthracnose (*Drepanopeziza* spp.)		Begin application when the first leaf unfolds and repeat on a 10 to 14 day spray interval when disease conditions remain favorable.			
Amur river grape Kiwifruit, hardy Maypop Schisandra berry (cultivars, varieties, and/or hybrids of these)	powdery mildew (*Sphaerotheca* spp.; *Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	3	10 fluid ounces (0.08 lb ai) per acre	14 days

Crop Specific Use Rates and Recommendations for: Subgroups 13-07F and 13-07G

Subgroups 13-07 and 13-07G						
Crop	**Target Diseases**	**Product Use Rate per Application (fl oz/A)**	**Use Recommendations**	**Maximum Number of Applications per Season**	**Maximum Product Rate per Season**	**Minimum Time from Application to Harvest (PHI)**
strawberry	powdery mildew (*Podosphaera aphanis*) leaf spot (*Mycosphaerella* spp.) leaf blight (*Phomopsis* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application prior to disease development and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use higher application rates and a 14 day spray interval when growing susceptible varieties and/or when conditions are favorable for heavy disease pressure.	4	20 fluid ounces (0.16 lb ai) per acre	0 days
blueberry, lowbush bearberry bilberry cloudberry lingonberry muntries partridge berry (cultivars, varieties, and/or hybrids of these)	(*Sphaerotheca* spp.; *Microsphaera* spp.; *Oidium* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	4	20 fluid ounces (0.16 lb ai) per acre	0 days

Botrytis Suppression

Mettle 125 ME, when applied at 4 to 5 ounces per acre using a 14-day powdery mildew spray schedule, will enhance the activity of registered Botrytis rot fungicides.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed through storage and disposal.

Pesticide Storage:	Store under well-vented, cool and dry storage conditions. Do not store under moist conditions.
Pesticide Disposal:	Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Container Type:	This is a nonrefillable container. Do not reuse or refill this container.
Container Disposal:	Empty the package completely and triple rinse container (or equivalent) promptly after emptying with water to be used for application. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller, or, if allowed by state and local authorities, by burning. If burned stay out of smoke.
Triple Rinsing Instructions:	Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire label before using this product, including this Limitation of Warranty and Liability.

If the terms are not acceptable, return the product at once unopened for a refund of the purchase price.

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Directions for Use, subject to the inherent risks described below, when used in accordance with the Directions for Use under normal conditions.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ISAGRO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Buyers and Users of this product must be aware that there are inherent unintended risks associated to the use of this product, independent from the control of Isagro. These risks include, but are not limited to, weather conditions, soil factors, moisture conditions, diseases, irrigation practices, condition of the crop at the time of application, materials which are present in the tank mix with this product or prior to the application of it, cultural practices or the manner of use or application, all risks which are impossible to eliminate. The Buyers and Users should be aware that these factors may cause: ineffectiveness of the product, reduction of harvested yield of the crop (entirely or partially), crop injury or injury to non-target crops or plants or to rotational crops caused by carryover in the soil, resistance of the target weeds to this product. Therefore additional care, treatment and expense are required to take the crop to harvest.

If the Buyer does not agree with the acceptance of these risks, then THE PRODUCT SHOULD NOT BE APPLIED. To the extent consistent with applicable law, by applying this product the Buyer acknowledges and accepts these inherent unintended risks and AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

To the extent consistent with applicable law, ISAGRO or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product (including claims based in contract, negligence, strict liability, other tort or otherwise). To the extent consistent with applicable law, the exclusive remedy of the User or Buyer and the exclusive Liability of Isagro or Seller shall be the return of the purchase price of the product, or at the election of Isagro or Seller, the replacement of the product.

To the extent consistent with applicable law, this Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

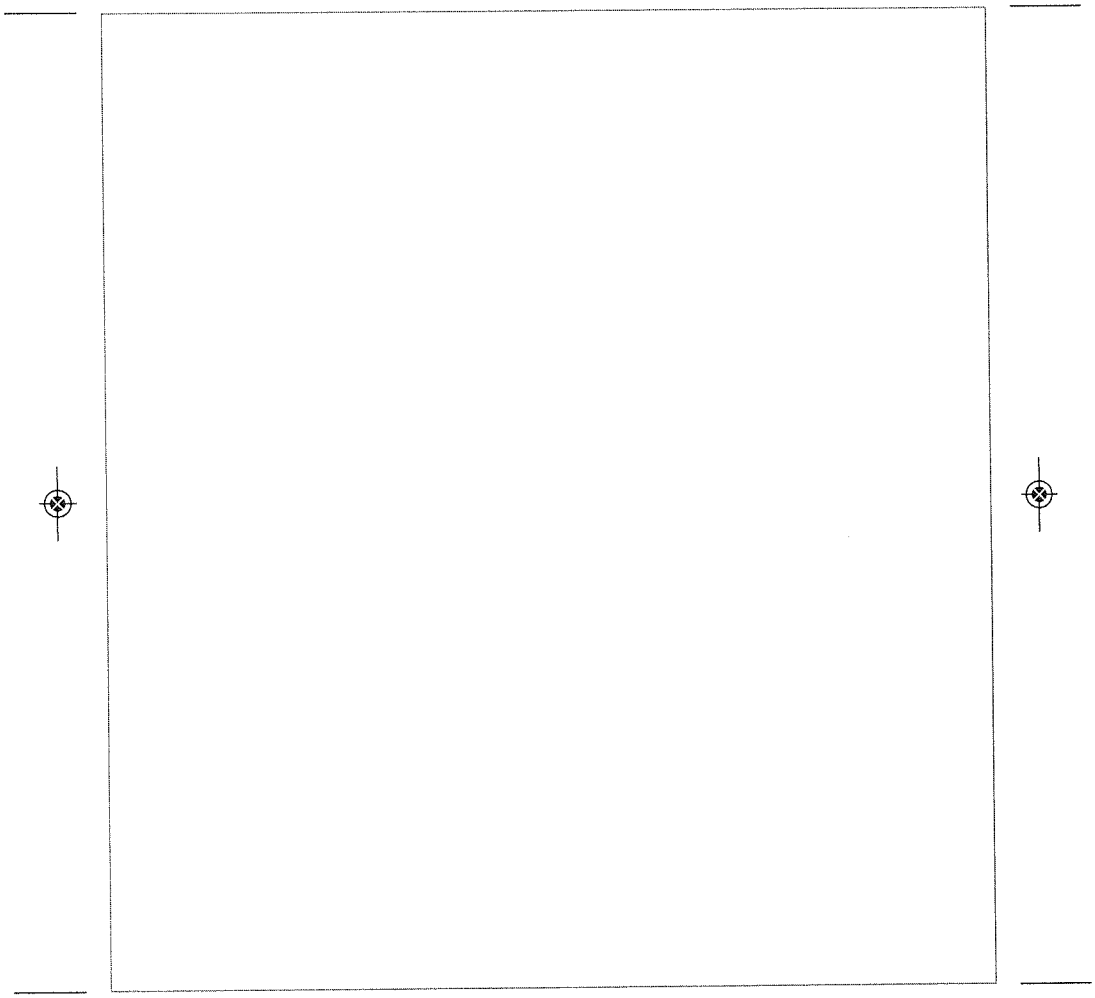
Isagro or its Seller must have prompt notice of any claim so that an immediate inspection of Buyer's or User's can be made. To the extent consistent with applicable law, if Buyer and User do not notify Isagro or Seller of any claims, in proper time, it shall be barred from obtaining any remedy.

To the extent consistent with applicable law, Buyers and Users are deemed to have accepted the terms of this Limitation of Warranty and Liability, which may not be modified by any verbal or written agreement.

Made in U.S.A.

ESL 100412 REV102412

NOTES



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GROUP 3 FUNGICIDE

METTLE®

125 ME FUNGICIDE

ISAGRO USA

Active Ingredient:	
Tetraconazole*	11.6%
Other Ingredients	88.4%
Total	100.0%

Manufactured by Isagro SpA for:
Isagro USA, Inc., 430 Davis Drive,
Suite 240 - Morrisville, NC 27560

*1-[2-(2,4-dichlorophenyl)-3-(1,1,2,2,-tetraflurorethoxy)propyl]1H-1,2,4-triazole

Contains 1 lb active ingredient (tetraconazole) per gallon

METTLE is a registered trademark of Isagro USA, Inc.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
[If you do not understand this label, find someone to explain it to you in detail.]

[See inside booklet for precautionary statements]

EPA Registration No. 80289-8

EPA Establishment No. 5905-IA-01

Batch code will be placed on the container

NET CONTENTS: 1 gallon

file: 60585_base_art
folder: 60585_Isagro_204032-9
colors: Black, 3005, 355, Reflex Blue
☐ dp proofed____

created by customer
alt: 10-24-12 bm
size: 5.125"(w) x 5.125"(h)

GROUP	3	FUNGICIDE

METTLE®

125 ME FUNGICIDE

Active Ingredient:

Tetraconazole*	11.6%
Other Ingredients	88.4%
Total	100.0%

*1-[2-(2,4-dichlorophenyl)-3-(1,1,2,2,-tetraflurorethoxy)propyl]1H-1,2,4-triazole

Contains 1 lb active ingredient (tetraconazole) per gallon

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CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
[If you do not understand this label, find someone to explain it to you in detail.]

FIRST AID	
IF SWALLOWED:	• Call a poison control center or doctor immediately for treatment advice. • Have affected person sip a glass of water if able to swallow. • Do not induce vomiting unless told by a poison control center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
IF IN EYES:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment. For Chemical Emergency Spill Leak Fire Exposure or Accident Call CHEMTREC Day or Night Domestic North America 800-424-9300 International 703-527-3883 (collect calls accepted)	

EPA Registration No. 80289-8 EPA Establishment No.

NET CONTENTS: ____ Gallons

Gowan®
The Go To Company

ISAGRO USA
Manufactured by:
Isagro USA, Inc.,
430 Davis Drive, Suite 240,
Morrisville, NC 27560

Distributed by :
Gowan Company
P.O. Box 5569
Yuma, AZ 85366-5569

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS (AND DOMESTIC ANIMALS)
CAUTION / PRECAUCION

Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

PERSONAL PROTECTIVE EQUIPMENT (PPE): Some materials that are chemical resistant to this product are barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils, and viton ≥14 mils. If you want more options, follow the instructions for category C on an EPA chemical-resistant category selection chart.
Applicators and other handlers must wear:

- Long sleeved shirt and long pants
- Shoes plus socks
- Chemical resistant gloves

Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:
Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This product may be toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms adjacent to treatment areas. Exercise caution when making applications of METTLE 125ME and do not apply when atmospheric conditions favor drift or runoff. Do not contaminate water when disposing of equipment wash waters or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instruction and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical resistant gloves
- Shoes plus socks

GENERAL INFORMATION

METTLE 125 ME is formulated as a one pound active ingredient per gallon micro emulsion (ME). The active ingredient in METTLE 125 ME is tetraconazole, a triazole fungicide (Group 3) that works by inhibiting demethylation and other processes in sterol biosynthesis. Tetraconazole is a systemic, protectant and curative fungicide and is absorbed quickly into the plant tissue. Optimal disease control is achieved when METTLE 125 ME is applied in a regularly scheduled spray program.

Pest Management Strategies

1. **IPM:** Integrate METTLE 125 ME into a comprehensive disease and pest management program. Follow cultural practices known to reduce disease development. Consult your local extension specialist, pest control adviser and/or Isagro representative for additional IPM strategies established for your area. Use METTLE 125 ME in Agricultural Extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.
2. **Tank mixtures:** METTLE 125 ME may be used in tank mixtures with fungicides having a different mode of action which are registered/permitted for the same use and are effective against the target pathogen. Tank-mixing METTLE 125 ME with other Group 3 fungicides is not recommended. Follow the more restrictive labeling for any tank mix partner. Do not mix with any product which contains a prohibition on tank mixing.

RAINFASTNESS
METTLE 125 ME is rainfast 2 hour after application. **Do not** apply if rain is expected within 2 hours of application or disease control may be reduced.

COMPATIBILITY OF MIXTURES
METTLE 125 ME is believed to be compatible with most commonly used agricultural fungicides, insecticides, growth regulators, micronutrients and adjuvants. To ensure better results, consult spray compatibility charts available from State Cooperative Extension Service Specialists when comparing tank mixtures and conduct a spray tank compatibility test before mixing this product with other products. To determine the physical compatibility of METTLE 125 ME conduct a simple jar test as follows:

1. Add 1 pt. of water to a quart jar. Use water from the same source and temperature as which will be used in the spray tank mixing operation.
2. Add 1 ml of METTLE 125 ME to the quart jar; gently mix until product goes into suspension.
3. Add the proportionate amount of the mix product(s), with agitation. Then dry formulations, then flowables, then emulsifiable concentrates, and then adjuvants.
4. Place cap on jar, invert 10 times, let stand for 15 minutes, evaluate.
5. An ideal tank-mix combination will be uniform and free of suspended particles. The following conditions indicate potential problems with the mixture and it should not be used:
    a) Layer of oil or globules on the mixture's surface.
    b) Flocculation: fine particles in suspension or as a layer on the bottom of the jar.
    c) Clabbering: Thickening texture (coagulated) like gelatin.
6. For best results, use combinations on a small number of plants before treating large areas.

SPRAYER PREPARATION
Before applying METTLE 125 ME start with clean, well maintained application equipment. The spray tank, as well as all hoses and booms, must be cleaned to ensure no residue from the previous spraying operation remains in the sprayer. The spray equipment must be cleaned according to the manufacturer's directions for the last product used before the equipment is used to apply METTLE 125 ME. If two or more products were tank mixed prior to METTLE 125 ME application, follow the most restrictive cleanup procedure.

Frequently check all application equipment (pressure, nozzles) to ensure complete coverage of the target crop and accurate rate of pesticide application.

MIXING INSTRUCTIONS
1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, slowly add the METTLE 125 ME to the spray tank. Agitation should create a rippling or rolling action on the water surface.
3. If tank-mixing METTLE 125 ME with other labeled pesticides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates, and then solutions.
4. Adjuvants should be added to the spray solution as required.
5. Fill spray tank to desired level with water. Continue agitation until all spray solution has been applied.
6. Mix only the amount of spray solution that can be applied the day of mixing. Apply METTLE 125 ME within 24 hours of mixing.

SPRAYER CLEANUP
Clean spray equipment each day following METTLE 125 ME application. After METTLE 125 ME is applied; use the following steps to clean the spray equipment:

1. Completely drain the spray tank, rinse the sprayer thoroughly, including the inside and outside of the tank and all in-line screens.
2. Fill the spray tank with clean water and flush all hoses, booms, screens and nozzles.
3. Drain tank completely.
4. Remove all nozzles and screens and rinse them in clean water.

SPRAY DRIFT MANAGEMENT
The interaction of many factors including equipment and weather during application determines the potential for spray drift. Applicators are responsible for considering all of these factors when making application decisions. Where states have more stringent regulations, observe them.

When applying by air, observe drift management restrictions and precautions listed under "AERIAL APPLICATION".

GROUND APPLICATION
Apply product in sufficient water for thorough coverage of vines and fruit. Increase spray volume as vine growth increases. Spray coverage is affected by nozzle type and spacing, sprayer pressure, gallonage per acre (gpa), applicator speed, and other factors.

Airblast (Air Assist) Specific Recommendations for Vineyards: Airblast sprayers deliver the spray mixture into the canopy of vines through a laterally directed airstream. The following drift management practices should by followed when using an Airblast sprayer:

- Adjust deflectors and aiming devices so that spray is only directed into the canopy
- Block off upward pointed nozzles when there is no overhanging canopy
- Use only enough air volume to penetrate the canopy and provide good coverage
- Do not allow the spray to go beyond the edge of the cultivated area (i.e. turn off sprayer when turning at end rows)
- Only spray inward, toward the orchard or vineyard, for applications to the outside rows.

AERIAL APPLICATION
Apply in a minimum of 10 gallons of water per acre. Do not apply under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.
Aerial Spray Drift Reduction Section
Spray Droplet Size: The best drift management strategy is to apply the largest droplets that provide sufficient plant coverage and pest control. Larger droplets reduce drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions).
Spray Droplet Size Control:

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets.
- **Number of Nozzles** – Use the minimum number of nozzles that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is released parallel to the air stream produces larger droplets than any other orientations and is the recommended practice.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles orientated straight back produce the largest droplets and the lowest drift.

Boom Length: Reducing the effective overall boom length to 70% of the wingspan of fixed-wing aircraft or 80% of a helicopter rotor width may further reduce drift without reducing swath width.
Application Height: Applications should not be made at a height greater than 10 feet above the top of the largest plants.
Application Swath Adjustment: When applications are made with a crosswind, the swath will be displaced downwind. Therefore, the applicator must compensate for this displacement by adjusting the path of the aircraft or boom on-off. Increase swath adjustment distances, with increasing drift potential (higher wind, height, smaller drops, etc.).
Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Avoid application below 2 mph due to variable wind direction and high inversion potential. Application is not allowed when wind speeds exceed 10 mph due to risk of direct drift to nontarget sensitive crops or locations. **Note:** Wind patterns can be affected by local terrain. All applicators must be familiar with local wind patterns and how they affect spray drift. **Note:** Follow State and local regulations with regard to minimum and maximum wind speeds during aerial application, as they may be more restrictive. Applicators must be familiar with and comply with State and local regulations.
Temperature and Humidity: Applications made during periods of low relative humidity require set-up of equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is typically greatest when conditions are both hot and dry.
Surface Temperature Inversion: Do not apply this product during a local, low level temperature inversion because drift potential is high. Small droplets can be transported in unpredictable directions due to the light and variable winds common during temperature inversions. Temperature inversions are typically characterized by temperatures that increase with altitude and they are common on nights with limited cloud cover and light to no wind. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

GENERAL CHEMIGATION INSTRUCTIONS:
Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation system. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other irrigation experts.
Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems
Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventor (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
Do not apply when wind speed favor drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add **METTLE 125 ME** slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, etc., should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.
METTLE 125 ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

Sprinkler Chemigation:
The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being
fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

When mixing, fill nurse tank half full with water. Add **METTLE 125 ME** slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. Stickers, spreaders, etc., should be added last. If compatibility is in question, use the compatibility jar test before mixing a whole tank. Because of the wide variety of possible combinations which can be encountered, observe all cautions and limitations on the label of all products used in mixtures.

METTLE 125 ME should be added through a traveling irrigation system continuously or at the last 30 minutes of solid set or hand moved irrigation systems. Agitation is recommended.

ROTATIONAL CROP RESTRICTIONS
Use the time intervals listed below to determine the minimum required time interval between last Mettle 125 ME application and new crop planting.

Crop	Replant Interval
Soybean, corn, grape, gooseberry, kiwifruit (hardy), maypop, schisandra berry, strawberry, bearberry, bilberry, blueberry (lowbush), cloudberry, lingonberry, muntries, partridgeberry, sugarbeet, peanut and pecan	0 day
All other crops - after application to Subgroups 13-07F and 13-07G	15 days
Small grains after sugarbeet application	40 days
All other crops - after application to sugarbeet	120 days

RESTRICTIONS AND LIMITATIONS
1. **Do not** make more than the specified number of applications of METTLE 125 ME to each labeled crop per year.
2. There must be a retreatment interval of at least 14 days between multiple applications of METTLE 125 ME
3. A restricted entry interval (REI) of 12 hours is to be followed for all activities with the exception of 7 days for table grape activities of girdling, cane tying and cane turning. For early entry into treated areas refer to PPE requirements under the AGRICULTURAL USE REQUIREMENTS section.

Crop Specific Use Rates and Recommendations for: Subgroups 13-07F and 13-07G

Subgroups 13-07F and 13-07G						
Crop	**Target Diseases**	**Product Use Rate per Application (fl oz/A)**	**Use Recommendations**	**Maximum Number of Applications per Season**	**Maximum Product Rate per Season**	**Minimum Time from Application to Harvest (PHI)**
Grape	powdery mildew (*Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application at prebloom (12 to 18 inch shoots) and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use a 14 day spray interval when disease pressure is severe or conditions are favorable for powdery mildew.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
	black rot (*Guignardia spp.)*		<u>Preventive Application:</u> Begin first application at 1 to 3 inches of new shoot growth and continue at 14 day intervals. Use higher rate under heavy disease pressure. When heavy disease pressure requires a shorter application interval, use alternate chemistries in between Mettle 125 ME applications. <u>Post Infection Application:</u> Apply within 72 hours after the beginning of infection.			
	anthracnose (*Elsinoe* spp.)		Begin application when new shoots are 1 to 3inches in length and continue on a 14 day schedule.			
	vine diseases following pruning (*Botryosphaeria rhodina, Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora)*	5 (0.04 lb ai./A)	Apply as a directed spray within 24 hours of pruning at 5 oz per acre in 25 to 50 gallons of water ensuring adequate coverage. For additional more detailed use directions read below*	2		

***Additional more Detailed Use directions for Applications to Aid in the Control of Listed Vine Diseases Following Grapevine Pruning**

Apply Mettle 125 ME at 5 ounces per acre using a final spray volume of 25 to 50 gallons water per acre to protect against grapevine pruning diseases caused by *Botryosphaeria* spp., *Eutypa lata, Phaeoacremonium aleophilum, Phaeomoniella chlamydospora.* An adjuvant may be used to increase penetration into the pruned wood surfaces. It is the responsibility of the applicator to verify the crop safety of the adjuvant under the environmental conditions present at the time of application.

Apply Mettle 125 ME within 24 hours of pruning. Regardless of spray volume, it is recommended that a spray dye be used during the application followed by visual inspection to verify thorough coverage of the pruning cuts and susceptible tissue. A second application of Mettle 125 ME is recommended approximately 14 days later if rainfall or high humidity persist resulting in environmental conditions favorable for disease development.

If double pruning of the vineyard is being performed, treatment does not need to be performed after the first, non-selective pruning pass if environmental conditions do not favor infection and disease development into tissue beyond where the final pruning cuts will occur. Under this scenario, apply Mettle 125 ME within 24 hours of making the second pruning cuts. The second application of Mettle 125 ME should be applied 14 days after the first application when rainfall and high humidity favor infection and disease development. If the risk of infection and rapid disease development is high, resulting in development of disease into tissue past where the second pruning cuts will be made, Mettle 125 ME should be applied after the first non-selective pruning cuts followed by a second application after the second and final pruning cuts are made. Again, the use of a spray dye is recommended to ensure thorough coverage of all cut surfaces.

Use Restricions: Do not apply more than 10 oz (0.04 lb ai) Mettle 125 ME per acre per year including applications made for powdery mildew and black rot control.

Crop	Target Diseases	Product Use Rate per Application (fl oz/A)	Use Recommendations	Maximum Number of Applications per Season	Maximum Product Rate per Season	Minimum Time from Application to Harvest (PHI)
Gooseberry	powdery mildew (*Sphaerotheca* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications at pre-bloom and continue using a 14 day spray interval. Rotate to other chemical if more than 2 applications are needed.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
	anthracnose (*Drepanopeziza* spp.)		Begin application when the first leaf unfolds and repeat on a 10 to 14 day spray interval when disease conditions remain favorable.			
Amur river grape Kiwifruit, hardy Maypop Schisandra berry (cultivars, varieties, and/or hybrids of these)	powdery mildew (*Sphaerotheca* spp.; *Erysiphe* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	3	10 fluid ounces (0.08 lb ai) per acre	14 days
strawberry	powdery mildew (*Podosphaera aphanis*)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin application prior to disease development and continue applications using spray intervals up to 21 days in low to moderate disease pressure. Use higher application rates and a 14 day spray interval when growing susceptible varieties and/or when conditions are favorable for heavy disease pressure.	4	20 fluid ounces (0.16 lb ai) per acre	0 days
	leaf spot (*Mycosphaerella* spp.)					
	leaf blight (*Phomopsis* spp.)					
blueberry, lowbush bearberry bilberry cloudberry lingonberry muntries partridge berry (cultivars, varieties, and/or hybrids of these)	(*Sphaerotheca* spp.; *Microsphaera* spp.; *Oidium* spp.)	3 to 5 (0.023 to 0.04 lb. ai./A)	Begin applications when conditions are favorable for disease development and repeat on a 14 day interval.	4	20 fluid ounces (0.16 lb ai) per acre	0 days

Botrytis Suppression
Mettle 125 ME, when applied at 4 to 5 ounces per acre using a 14-day powdery mildew spray schedule, will enhance the activity of registered Botrytis rot fungicides.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed through storage and disposal.

Pesticide Storage:	Store under well-vented, cool and dry storage conditions. Do not store under moist conditions.
Pesticide Disposal:	Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Container Type:	This is a nonrefillable container. Do not reuse or refill this container.
Container Disposal:	Empty the package completely and triple rinse container (or equivalent) promptly after emptying with water to be used for application. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller, or, if allowed by state and local authorities, by burning. If burned stay out of smoke.
Triple Rinsing Instructions:	Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire label before using this product, including this Limitation of Warranty and Liability.

If the terms are not acceptable, return the product at once unopened for a refund of the purchase price.

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Directions for Use, subject to the inherent risks described below, when used in accordance with the Directions for Use under normal conditions. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ISAGRO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Buyers and Users of this product must be aware that there are inherent unintended risks associated to the use of this product, independent from the control of Isagro. These risks include, but are not limited to, weather conditions, soil factors, moisture conditions, diseases, irrigation practices, condition of the crop at the time of application, materials which are present in the tank mix with this product or prior to the application of it, cultural practices or the manner of use or application, all risks which are impossible to eliminate. The Buyers and Users should be aware that these factors may cause: ineffectiveness of the product, reduction of harvested yield of the crop (entirely or partially), crop injury or injury to non-target crops or plants or to rotational crops caused by carryover in the soil, resistance of the target weeds to this product. Therefore additional care, treatment and expense are required to take the crop to harvest.

If the Buyer does not agree with the acceptance of these risks, then THE PRODUCT SHOULD NOT BE APPLIED. To the extent consistent with applicable law, by applying this product the Buyer acknowledges and accepts these inherent unintended risks and AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

To the extent consistent with applicable law, ISAGRO or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product (including claims based in contract, negligence, strict liability, other tort or otherwise). To the extent consistent with applicable law, the exclusive remedy of the User or Buyer and the exclusive Liability of Isagro or Seller shall be the return of the purchase price of the product, or at the election of Isagro or Seller, the replacement of the product.

To the extent consistent with applicable law, this Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

Isagro or its Seller must have prompt notice of any claim so that an immediate inspection of Buyer's or User's can be made. To the extent consistent with applicable law, if Buyer and User do not notify Isagro or Seller of any claims, in proper time, it shall be barred from obtaining any remedy.

To the extent consistent with applicable law, Buyers and Users are deemed to have accepted the terms of this Limitation of Warranty and Liability, which may not be modified by any verbal or written agreement.

Made in U.S.A.
METTLE 125 ME is a registered trademark of Isagro USA, Inc. (01-R0914)

PULL HERE TO OPEN

GROUP 11 FUNGICIDE

Abound®

Flowable Fungicide

syngenta®

Broad spectrum fungicide for control of plant diseases

Active Ingredient:	
Azoxystrobin: methyl (*E*)-2-{2-[6-(2-cyanophenoxy) pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate*	22.9%
Other Ingredients:	77.1%
Total:	100.0%

Contains 2.08 lb of active ingredient per gallon

*IUPAC

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

Reformulation is prohibited. See individual container labels for repackaging limitations.

EPA Reg. No. 100-1098

EPA Est. 100-NE-001

SCP 1098A-L1K 1113

4033540

1 gallon

Net Contents

TM

FIRST AID	
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor or going for treatment.	
HOTLINE NUMBER For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call **1-800-888-8372**	

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Wear long-sleeved shirt and long pants, socks and shoes and chemical-resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber.

Personal Protective Equipment (PPE)

Some materials that are chemically resistant to this product are listed below. If you want more options follow the instructions for Category A on an EPA chemical resistance category selection chart.

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber
- Shoes plus socks

User Safety Requirements

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

continued...

PRECAUTIONARY STATEMENTS *(continued)*

Engineering Controls

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR 170.240 (d)(4-6), the handler PPE requirements may be reduced or modified as specified in the WPS.

IMPORTANT: When reduced PPE is worn because a closed system is being used, handlers must be provided all PPE specified above for "applicators and other handlers" and have such PPE immediately available for use in an emergency, such as a spill or equipment breakdown.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Wash thoroughly with soap and water after handling.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Environmental Hazards

Azoxystrobin is toxic to freshwater and estuarine/marine fish and aquatic invertebrates. Azoxystrobin can be persistent for several months or longer.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or regional office of the EPA.

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Ground Water Advisory

Azoxystrobin and a degradate of azoxystrobin are known to leach through soil to ground water under certain conditions as a result of label use. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of azoxystrobin and a degradate of azoxystrobin from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

Notify State and/or Federal authorities and Syngenta immediately if you observe any adverse environmental effects due to use of this product.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and, (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Use of Abound through airblast application equipment on grapes is prohibited in the following townships and boroughs of Erie County, Pennsylvania:

North East, Harborcreek, Lawrence Park, Erie, Presque Isle, MillCreek, Fairview, Girard and Springfield.

This prohibition is intended to help eliminate phytotoxicity problems with apples observed in this geographic location.

FAILURE TO FOLLOW THE USE DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN PLANT INJURY OR POOR DISEASE CONTROL.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), notification to workers, and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil or water is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber
- Shoes plus socks

PRODUCT USE PRECAUTIONS

FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL, AND/OR ILLEGAL RESIDUES.

ATTENTION

Abound is extremely phytotoxic to certain apple varieties.

AVOID SPRAY DRIFT. Extreme care must be used to prevent injury to apple trees (and apple fruit).

DO NOT spray Abound where spray drift may reach apple trees.

DO NOT spray when conditions favor drift beyond area intended for application. Conditions which may contribute to drift include thermal inversion, wind speed and direction, sprayer nozzle/pressure combinations, spray droplet size, etc. Contact your State extension agent for spray drift prevention guidelines in your area.

DO NOT use spray equipment which has been previously used to apply Abound to spray apple trees. Even trace amounts can cause unacceptable phytotoxicity to certain apple and crabapple varieties.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

PRODUCT INFORMATION

Abound is a broad spectrum, preventative fungicide with systemic and curative properties recommended for the control of many important plant diseases. Abound Flowable Fungicide is a member of Syngenta's Plant Performance™ product line and may also improve the yield and/or quality of the crop. These additional benefits are due to positive effects on plant physiology. The effects may vary according to factors such as the crop, crop hybrid, or environment. Abound may be applied as a foliar spray in alternating spray programs or in tank mixes with other registered crop protection products. All applications must be made according to the use directions that follow.

Restrictions for Resistance Management Purposes

Do not use in greenhouses.

PRODUCT USE INSTRUCTIONS

Application: Thorough coverage is necessary to provide good disease control. Make no more spray solution than is needed for application. Avoid spray overlap, as crop injury may occur.

Adjuvants: When an adjuvant is to be used with this product, the use of an adjuvant that meets the standards of the Chemical Producers and Distributors Association (CPDA) adjuvant certification is recommended.

Efficacy: Under certain conditions conducive to extended infection periods, use another registered fungicide for additional applications if maximum amount of Abound has been used. If resistant isolates to Group 11 fungicides are present, efficacy can be reduced for certain diseases. The higher rates in the rate range and/or shorter spray intervals may be required under conditions of heavy infection pressure, with highly susceptible varieties, or when environmental conditions are conducive to disease.

INTEGRATED PEST (DISEASE) MANAGEMENT

Abound should be integrated into an overall disease and pest management strategy whenever the use of a fungicide is required. Cultural practices known to reduce disease development should be followed. This should include selection of varieties with disease tolerance, removal of plant debris in which inoculum overwinters, and proper timing and placement of irrigation. Consult your local agricultural authorities for additional IPM strategies established for your area. Abound may be used in State Agricultural Extension advisory (disease forecasting) programs which recommend application timing based on environmental factors favorable for disease development.

Crop Tolerance: Plant tolerance has been found to be acceptable for all crops on the label, however, not all possible tank-mix combinations have been tested under all conditions. When possible, it is recommended to test the combinations on a small portion of the crop to ensure that a phytotoxic response will not occur as a result of application. See Product Use Precautions for apple phytotoxicity information.

RESISTANCE MANAGEMENT

GROUP **11** FUNGICIDE

Abound (azoxystrobin) is a Group 11 fungicide. The mode of action for Abound is the inhibition of the Qol (quinone outside) site within the electron transport system [Group 11]. Fungal pathogens can develop resistance to products with the same mode of action when used repeatedly. Because resistance development cannot be predicted, use of this product should conform to resistance management strategies established for the crop and use area. Consult your local or State agricultural authorities for resistance management strategies that are complementary to those in this label. Resistance management strategies may include alternating and/or tank-mixing with products having different modes of action or limiting the total number of applications per season. Syngenta encourages responsible resistance management to ensure effective long-term control of the fungal diseases on this label.

Follow the crop specific resistance management recommendations in the directions for use.

If no resistance recommendation on number of applications is specified in the directions for use, follow the recommendations in the table below.

If planned total number of fungicide applications per crop is:	1	2	3	4	5	6	7	8	9	10	11	12
Recommended Solo Qol fungicide sprays	1	1	2	2	2	2	2	3	3	3	3	4
Recommended Qol fungicide sprays in mixture (tank-mix or formulated)	1	2	2	2	2	3	3	4	4	5	5	6

In situations requiring multiple sprays, develop season long spray programs for Group 11 (QoI) fungicides. In crops where two sequential Group 11 fungicide applications are made, they should be alternated with two or more applications of a fungicide that is not in Group 11. If more than 12 applications are made, observe the following guidelines:

- When using a QoI fungicide as a solo product, the number of applications must be no more than 1/3 (33%) of the total number of fungicide applications per season.
- For QoI mixes in programs in which tank mixes or premixes of QoI with mixing partners of a different mode of action are utilized, the number of QoI containing applications must be no more than 1/2 (50%) of the total number of fungicide applications per season.
- In programs in which applications of QoI are made with both solo products and mixtures, the number of QoI containing applications must be no more than 1/2 (50%) of the total number of fungicide applications per season.

If a Group 11 fungicide is applied to the seed or soil, do not make another application with a Group 11 fungicide for at least 3 weeks.

Rotational Crop Restrictions

The following crops may be planted at the specified interval following application of Abound fungicide.

Crop Rotational Interval

	Plant back interval
Buckwheat and millet	12 months
All other crops with Azoxystrobin registered uses	0 days

SOILBORNE/SEEDLING DISEASE CONTROL

For those crops that have specific use directions for soilborne disease control:

Abound can provide control of many soilborne diseases if applied early in the growing season. Specific applications for soilborne diseases include in-furrow applications and banded applications applied over the row, either shortly after plant emergence or during herbicide applications or cultivation. These applications will provide control of pre or postemergence damping off and diseases that infect plants at the soil-plant interface.

The use of either type of application depends on the cultural practices in the region. In some locations, one type of application may provide better disease control than the other, depending on the timing of the disease epidemic. Seedling diseases are generally controlled by in-furrow applications while banded applications are more effective against soilborne diseases that develop later in the season. Consult your local expert to get some guidance regarding application type.

Under cool, wet conditions, crop injury from soil directed applications can occur.

BANDED

- Apply Abound prior to infection as a directed spray to the soil, using single or multiple nozzles, adjusted to provide thorough coverage of the lower stems and the soil surface surrounding the plants.
- Band width should be limited to 7 inches or less.
- Apply Abound at a rate of 0.40-0.80 fl oz product (0.10-0.20 oz ai)/1000 row feet. For banded applications on 22-inch rows, the maximum application rate is 0.70 fl oz/1000 row feet.
- These applications come into contact with the foliage and are counted as foliar applications when considering resistance management.
- They may be applied during cultivation or hilling operations to provide soil incorporation.

IN-FURROW

- Apply Abound as an in-furrow spray in 3-15 gallons of water at planting.
- Mount the spray nozzle so the spray is directed into the furrow just before the seeds are covered.
- Use the higher rate when the weather conditions are expected to be conducive for disease development, if the field has a history of Pythium problems, or if minimum/low till programs are in place.

IN-FURROW APPLICATION RATES

Rate per 1000 row-feet		Row Spacing (inches)										
		22	30	32	34	36	38	40	48	60	72	80
fl oz product	oz ai	Product per Acre (fl oz)										
0.40	0.10	9.5	7.0	6.5	6.1	5.8	5.5	5.2	4.4	3.5	2.9	2.6
0.60	0.15	14.3	10.5	9.8	9.2	8.7	8.3	7.8	6.5	5.2	4.4	3.9
0.80	0.20		13.9	13.1	12.3	11.6	11.0	10.5	8.7	7.0	5.8	5.2
1.00	0.25					14.5	13.8	13.1	10.9	8.7	7.3	6.5
1.20	0.30								13.1	10.5	8.7	7.8
1.38	0.36								15.0	12.0	10.0	9.0
1.50	0.40									13.1	10.9	9.8
1.72	0.45									15.0	12.5	11.2
2.00	0.50										14.5	13.1
2.07	0.54										15.0	13.5
2.30	0.60											15.0

Do not apply more than 15 fl oz/A.

Row spacing (inches)	Row-Feet Per Acre
22	23,760
30	17,424
32	16,335
34	15,374
36	14,520
38	13,756
40	13,068
48	10,890
60	8,712
72	7,260
80	6,534

DRIP

Refer to the **Application Instructions Through Irrigation System** section.

SPRAY DRIFT MANAGEMENT

To avoid spray drift, do not apply when conditions favor drift beyond the target area. The interaction of many equipment and weather related factors determine the potential for spray drift. AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.

ATTENTION

Abound is extremely phytotoxic to certain apple varieties.

AVOID SPRAY DRIFT. Extreme care must be used to prevent injury to apple trees (and apple fruit).

DO NOT spray Abound where spray drift may reach apple trees.

DO NOT spray when conditions favor drift beyond area intended for application. Conditions which may contribute to drift include thermal inversion, wind speed and direction, sprayer nozzle/pressure combinations, spray droplet size, etc. Contact your State extension agent for spray drift prevention guidelines in your area.

DO NOT use spray equipment which has been previously used to apply Abound to spray apple trees. Even trace amounts can cause unacceptable phytotoxicity to certain apple and crabapple varieties.

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

Do not apply when weather conditions favor drift from treated areas to non-target aquatic habitat.

MIXING AND APPLICATION METHODS

Spray Equipment

Abound may be applied with all types of spray equipment commonly used for making ground and aerial applications. Proper adjustments and calibration of spraying equipment to give good canopy penetration and coverage is essential for good disease control.

Nozzles

- Equip sprayers with nozzles that provide accurate and uniform application.
- Nozzles should be the same size and uniformly spaced across the boom.
- Calibrate sprayer before use.
- It is suggested that screens be used to protect the pump and to prevent nozzles from clogging.
- Screens placed on the suction side of the pump should be *16-mesh or coarser.*
- Do not place a screen in the recirculation line.
- Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles.
- Check nozzle manufacturer's recommendations.

Pump

- Use a pump with capacity to:
  (1) Maintain 35-40 psi at nozzles.
  (2) Provide sufficient agitation in tank to keep mixture in suspension - this requires recirculation of 10% of tank volume per minute.
- Use a jet agitator or liquid sparge tube for agitation.
- Do not air sparge.

For more information on spray equipment and calibration, consult sprayer manufacturers and state recommendations. For specific local directions and spray schedules, consult the current state agricultural recommendations.

Mixing Instructions

- Abound is a suspension concentrate (SC) formulation.
- Prepare no more spray mixture than is required for the immediate operation.
- Thoroughly clean spray equipment before using this product.
- Agitate the spray solution before and during application.
- Rinse spray tank thoroughly with clean water after each day's use and dispose of pesticide rinsate by application to an already treated area.

Abound Alone (No Tank Mix)

- Add 1/2-2/3 of the required amount of water to the spray or mixing tank.
- With the agitator running, add Abound to the tank.
- Continue agitation while adding the remainder of the water.
- Begin application of the spray solution after Abound has completely dispersed into the mix water.
- Maintain agitation until all of the mixture has been sprayed.

Abound + Tank Mixtures: Abound is usually compatible with all tank-mix partners listed on this label. To determine the physical compatibility of Abound with other products, use a jar test. Using a quart jar, add the proportionate amounts of the products to 1 qt of water. Add wettable powders and water dispersible granular products first, then liquid flowables, and emulsifiable concentrates last. After thoroughly mixing, let stand for at least 5 minutes. If the combination remains mixed or can be remixed readily, it is physically compatible. Once compatibility has been proven, use the same procedure for adding required ingredients to the spray tank.

Abound has demonstrated some phytotoxic effects when mixed with products that are formulated as emulsifiable concentrates (EC). These effects are enhanced if applications are made under cool, cloudy conditions and these conditions remain for several days following application. In addition, adjuvants that contain some form of silicone have also contributed to phytotoxicity.

Mixing in the Spray Tank

- Add 1/2-2/3 of the required amount of water to the spray or mixing tank.
- With the agitator running, add the tank-mix partner(s) into the tank in the same order as described above.
- Allow the material to completely dissolve and disperse into the mix water. Continue agitation while adding the remainder of the water and Abound to the spray tank.
- Allow Abound to completely disperse.
- Spray the mixture with the agitator running.

APPLICATION INSTRUCTIONS THROUGH IRRIGATION SYSTEMS (CHEMIGATION)

Application Through Irrigation Systems (Chemigation)

- Use only on crops for which chemigation is specified on this label.
- Apply this product only through center pivot, solid set, hand move, or moving wheel irrigation systems. Do not apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- Apply in 0.1-0.25 inches/acre. Excessive water may reduce efficacy.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system, unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Spray Preparation: Chemical tank and injector system should be thoroughly cleaned. Flush system with clean water.

Drip Irrigation: Abound may be applied through drip irrigation systems for soilborne disease control. The soil should have adequate moisture capacity prior to drip application.

Terminate drip irrigation at fungicide depletion from the main feed supply tank or after 6 hours from start, whichever is shorter. For maximum efficacy, subsequent irrigation (water only) should be delayed for at least 24 hours following drip application.

Sprinkler Irrigation

- Apply this product through sprinkler irrigation systems including center pivot, lateral move, end tow, side [wheel] roll, traveler, big gun, solid set, or hand move irrigation systems.
- Do not apply this product through any other type of irrigation system except as specified on this label.
- Apply with center pivot or continuous-move equipment distributing 1/2 acre-inch or less during treatment.
- In general, use the least amount of water required for proper distribution and coverage.
- If stationary systems (solid set, handlines or wheel lines other than continuous-move) are used, this product should be injected into no more than the last 20-30 minutes of the set.

- Do not apply when winds are greater than 10-15 mph to avoid drift or wind skips.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Plant injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform treated water.
- Thorough coverage of foliage is required for good control.
- Good agitation should be maintained during the entire application period.

If you have questions about calibration you should contact State Extension Service specialist, equipment manufacturers or other experts.

Operating Instructions

1. Do not apply when wind speed favors drift beyond the area intended for treatment.
2. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
6. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
7. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
8. Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
9. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

Center Pivot Irrigation Equipment

Notes: (1) Use only with drive systems which provide uniform water distribution. (2) Do not use end guns when chemigating Abound through center pivot systems because of non-uniform application.

- Determine the size of the area to be treated.
- Determine the time required to apply 1/8-1/2 inch of water over the area to be treated when the system and injection equipment are operated at normal pressures as specified by the equipment manufacturer. When applying Abound through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution. Run the system at 80-95% of the manufacturer's rated capacity.
- Using water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of Abound required to treat the area covered by the irrigation system.
- Add the required amount of Abound and sufficient water to meet the injection time requirements to the solution tank.
- Make sure the system is fully charged with water before starting injection of the Abound solution. Time the injection to last at least as long as it takes to bring the system to full pressure.
- Maintain constant solution tank agitation during the injection period.
- Continue to operate the system until the Abound solution has cleared the sprinkler head.

Solid Set, Hand Move, and Moving Wheel Irrigation Equipment

- Determine the acreage covered by the sprinklers.
- Fill injector solution tank with water and adjust flow rate to use the contents over a 20 to 30-minute interval. When applying Abound through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution.
- Determine the amount of Abound required to treat the area covered by the irrigation system.
- Add the required amount of Abound into the same quantity of water used to calibrate the injection period.
- Operate the system at the same pressure and time interval established during the calibration.
- Stop injection equipment after treatment is completed. Continue to operate the system until the Abound solution has cleared the last sprinkler head.

Specific Instructions for Public Water Systems

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back-flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

Directions For Use

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Almonds	Alternaria Leaf and Fruit Spot (*Alternaria alternata*) Anthracnose (*Colletotrichum acutatum*) Leaf Blight (*Seimatosporium lichenicola*) Leaf Rust (*Tranzschelia discolor*) Scab (*Cladosporium carpophilum*) Shot Hole (*Wilsonomyces carpophilus*)	12.0-15.5 (0.20-0.25)	Abound applications should begin prior to disease development and continue throughout the season following the resistance management guidelines. Applications may be made by ground, air or chemigation. For aerial applications apply in a minimum of 15 GPA. Thorough and uniform coverage is essential for disease control. Reduced efficacy has been observed when uniform coverage cannot be obtained. Abound may be applied by air only at growth stages prior to and including 5 weeks after petal fall. An adjuvant may be added at specified rates.
	Brown Rot Blossom Blight (*Monilinia laxa, M. fructicola*)	12.0-15.5 (0.20-0.25)	Anthracnose, scab and shot hole: Begin applications prior to disease development and continue at 7- to 14-day intervals throughout the season. Blossom blight: Begin applications at early bloom and continue through petal fall. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

Specific Use Restrictions:
1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Do not apply within 28 days of harvest (28-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Bananas Plantains	Black Sigatoka (*Mycosphaerella fijiensis*) Yellow Sigatoka (*Mycosphaerella musicola*)	5.5-8.5 (0.09-0.135)	Abound applications should begin prior to disease development and continue throughout the season every 12-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
Specific Use Restrictions: 1) Do not apply more than 66.4 fl oz of product/A/season. 2) Do not apply more than 1.08 lb ai/A/season of azoxystrobin-containing products. 3) Abound may be applied the day of harvest (0-day PHI).			
Berries, Bushberry Subgroup 13-07B Aronia Berry Blueberry, Highbush Blueberry, Lowbush Buffalo Currant Chilean Guava Cranberry, Highbush Currant, Black Currant, Red Elderberry	Alternaria Fruit Rot (*Alternaria* spp.) Anthracnose Fruit Rot (*Colletotrichum gloeosporoides*) Botryosphaeria Canker (*Botryosphaeria* spp.) Leaf Spot and Blotch (*Mycosphaerella* spp., *Septoria* spp.) Mummyberry (*Monilinia vaccinii-corymbosi*) Phomopsis Leaf Spot, Twig Blight and Stem Canker (*Phomopsis vaccinii*) Powdery Mildew (*Sphaerotheca* spp.) Septoria Blight (*Septoria* spp.) Spur Blight (*Didymella* spp., *Phoma* spp.)	6.0-15.5 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7- to 14-day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

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Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Berries, Bushberry Subgroup 13-07B *(continued)* European Barberry Gooseberry Honeysuckle, Edible Huckleberry Jostaberry Juneberry (Saskatoon Berry) Lingonberry Native Currant Salal Sea Buckthorn Including all cultivars and/or hybrids of these	Alternaria Fruit Rot (*Alternaria* spp.) Anthracnose Fruit Rot (*Colletotrichum gloeosporoides*) Botryosphaeria Canker (*Botryosphaeria* spp.) Leaf Spot and Blotch (*Mycosphaerella* spp., *Septoria* spp.) Mummyberry (*Monilinia vaccinii-corymbosi*) Phomopsis Leaf Spot, Twig Blight and Stem Canker (*Phomopsis vaccinii*) Powdery Mildew (*Sphaerotheca* spp.) Septoria Blight (*Septoria* spp.) Spur Blight (*Didymella* spp., *Phoma* spp.)	6.0-15.5 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7- to 14-day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

Specific Use Restrictions:
1) Do not apply more than 46 fl oz of product/A/season.
2) Do not apply more than 0.75 lb ai/A/season of azoxystrobin-containing products.
3) Abound may be applied the day of harvest (0-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Berries, Caneberry Subgroup 13-07A Blackberry Bingleberry Boysenberry Dewberry Lowberry Marionberry Olallieberry Youngberry Loganberry Red and Black Raspberry Wild Raspberry Including all cultivars and/or hybrids of these	Anthracnose *(Spaceloma necator)* *(Elsinoe veneta)* Botryosphaeria Canker (*Botryosphaeria dothidea*) Colletotrichum Rot *(Colletotrichum gloeosporioides)* Leaf Spot and Blotch (*Mycosphaerella* spp.) (*Septoria rubi*) (*Sphaerulina rubi*) Powdery Mildew *(Sphaerotheca macularis)* *(Microphaera* spp.*)* *(Oidium* spp.*)* Rosette or Double Blossom of Blackberries *(Cercosporella rubi)* Spur Blight *(Didymella applanata)*	6.0-15.5 (0.10-0.25)	Begin applications at onset of disease and continue as required until harvest. Make applications on a 7- to 14-day schedule. Use a minimum water volume of 10 gallons per acre by ground and a minimum of 3 gallons by air. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Blackberry Rust (*Phragmidium* spp.)	10-15.5 (0.16-0.25)	

Specific Use Restrictions:
1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Abound may be applied the day of harvest (0-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Berry, Low Growing Subgroup 13-07G (except Cranberry) **Strawberry** See additional crops below.	Anthracnose (*Colletotrichum fragariae*) Leather Rot (*Phytophthora cactorum*) Powdery Mildew (*Sphaerotheca macularis*) Suppression of Botrytis on the Foliage (*Botrytis cinerea*)	6.0-15.5 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 7- to 10-day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. For leather rot control apply 2 applications on a 7-day schedule from late bloom through harvest. **Field Nurseries:** Apply to young plants in field nurseries by ground, drip, or overhead chemigation. If applying through drip irrigation, calculate the rate as a band application with a band width equal to the root zone width. Inject Abound into the irrigation water. **For dip applications at transplanting for commercial berry production:** For suppression of root and crown rot caused by *Colletotrichum* spp., mix 5-8 fl oz of Abound per 100 gallons of water. Dip plants for 2-5 minutes. Plant treated plants as quickly as possible. It is recommended that transplants be washed to remove excess soil prior to dipping. For continued anthracnose control, follow with foliar applications beginning 2-3 weeks after transplant. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Soilborne Diseases Seedling Root Rot, Basal Stem Rot (*Rhizoctonia solani*)	0.40-0.80 fl oz/ 1000 row feet	For soilborne/seedling disease control, see directions and rates under the **SOILBORNE/ SEEDLING DISEASE CONTROL** section.

Additional Low Growing Berries: Bearberry, Bilberry, Cloudberry, Muntries, Partridgeberry including all cultivars and/or hybrids of these.

Specific Use Restrictions:
1) Do not apply more than 61.5 fl oz of product/A/season.
2) Do not apply more than 1.0 lb ai/A/season of azoxystrobin-containing products.
3) Abound may be applied the day of harvest (0-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Citrus Fruit Crop Group 10-10 Calamondin Citron Grapefruit Kumquat Lemon Lime Mandarin Orange (sour and sweet) Pummelo Satsuma Mandarin Tangerine Uniq fruit Including all cultivars and/or hybrids of these See complete list of citrus fruit crops below.	Albinism *(Alternaria alternata pv citri)* Alternaria Leaf and Fruit Spot (*Alternaria citri*) Anthracnose *(Colletotrichum acutatum, C. gloeosporioides)* Cercospora Leaf Spot (*Cercospora* spp.) Diplodia Stem-End Rot (*Diplodia natalensis*) Greasy Spot *(Mycosphaerella citri)* Melanose *(Diaporthe citri)* Penicillium Decays Green Mold, Whisker Mold, Suppression of Blue Mold (*Penicillium* spp.) Phomopsis Stem-End Rot (*Phomopsis citrii*) Post Bloom Fruit Drop (PFD) *(Colletotrichum acutatum)* Powdery Mildew (*Erysiphe* spp.) Scab *(Elsinoe fawcettii)* Sweet Orange Scab *(Elsinoe australis)*	12.0-15.5 (0.20-0.25)	Abound applications should begin prior to disease development and continue throughout the season on 7- to 21-day intervals following the resistance management guidelines. Under conditions that favor severe disease epidemics, the higher application rates should be used. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. A horticultural spray oil should be used to improve control of greasy spot. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. Do not make more than four (4) applications of Abound or other Group 11 fungicide per season.
	Black Spot *(Guidnardia citricarpa)*	9.0-15.5 (0.15-0.25)	

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Complete List of Citrus Fruit Crops: Australian Desert Lime (*Eremocitrus glauca*); Australian Finger Lime (*Microcitrus australasica*); Australian Round Lime (*Microcitrus australis*); Brown River Finger Lime (*Microcitrus papuana*); Calamondin (*Citrofortunella microcarpa*); Citron (*Citrus medica*); Citrus Hybrids, Citrus spp., *Eremocitrus* spp., *Fortunella* spp., *Microcitrus* spp., and *Poncirus* spp.; Grapefruit (*Citrus paradise*); Japanese Summer Grapefruit (*Citrus natsudaidai*); Kumquat (*Fortunella* spp.); Lemon (*Citrus limon*); Lime (*Citrus aurantiifolia*); Mediterranean Mandarin (*Citrus deliciosa*); Mount White Lime (*Microcitrus garrowayae*); New Guinea Wild Lime (*Microcitrus warburgiana*); Orange, Sour (*Citrus aurantium*); Orange, Sweet (*Citrus sinensis*); Pummelo (*Citrus maxima*); Russell River Lime (*Microcitrus inodora*); Satsuma Mandarin (*Citrus unshiu*); Sweet Lime (*Citrus limetta*); Tachibana Orange (*Citrus tachibana*); Tahiti Lime (*Citrus latifolia*); Tangelo (*Citrus* x tangelo); Tangerine (Mandarin) (*Citrus reticulate*); Tangor (*Citrus nobilis*); Trifoliate Orange (*Poncirus trifoliate*); Uniq Fruit (*Citrus aurantium* Tangelo group); cultivars, varieties and/or hybrids of these.
Specific Use Restrictions: 1) Do not apply more than 92.3 fl oz of product/A/season. 2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products. 3) Do not use Abound in citrus plant propagation nurseries. 4) Abound may be applied the day of harvest (0-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Cranberry Subgroup 13-07H (except Strawberry) Bearberry Bilberry Blueberry, Lowbush Cloudberry Lingonberry Muntries Partridgeberry Including all cultivars and/or hybrids of these	Cottonball *(Monilinia oxycocci)* Fruit Rots *(Physalospora vaccinii)* *(Glomerella cingulata)* *(Coleophoma empetri)* Lophodermium Twig Blight (*Lophodermium* spp.)	6.0-15.5 (0.10-0.25)	Begin applications at 5-10% bloom for fruit rot, cottonball, and twig blight. Continue applications on a 7- to 14-day schedule if conditions are favorable for disease development. Applications may be made by ground, chemigation or air. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Fairy Ring (suppression) (*Psilocybe* spp.)	15.5 (0.25)	Make the first application at bud break. Measure the ring diameter and add 10 feet to that diameter. Apply Abound at a rate equivalent to 15.5 fl oz/A in 30 – 100 gallons of water to the affected area. Irrigation (1 – 2 hours) following application is advisable to ensure penetration to the base of the plant. If necessary make another application 2 – 4 weeks later. For ground application ensure adequate water volume for thorough canopy penetration.

Specific Use Restrictions:

1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Do not treat cranberry fields used for aquaculture of fish and crustacea.
4) Do not apply when weather conditions favor drift from treated areas to non-target aquatic habitat. Applicators should use care in making applications near non-target aquatic habitats.
5) Do not apply to flooded crop.
6) Do not allow release of irrigation or flood water to non-target aquatic habitat for at least 14 days after the last application.
7) Do not apply within 3 days of harvest (3-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Grapes and Other Small Fruit Vine Climbing Subgroup 13-07F (except fuzzy kiwifruit) Amur River Grape Kiwifruit, Hardy Maypop Muscadines Schisandra Berry Including all cultivars and/or hybrids of these	Black Rot (*Guignardia bidwellii*) Downy Mildew (*Plasmopara viticola*) Phomopsis Cane and Leaf Spot (*Phomopsis viticola*) Powdery Mildew (*Uncinula necator*) **Suppression Only:** Botrytis Bunch Rot (*Botrytis cinerea*)	10.0-15.5 (0.16-0.25)	Abound applications should begin prior to disease development and continue throughout the season every 10-14 days following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential foliar applications of Abound or other Group 11 fungicides before alternating with a fungicide that is not in Group 11. **ATTENTION** Abound is extremely phytotoxic to certain apple varieties. AVOID SPRAY DRIFT. Extreme care must be used to prevent injury to apple trees (and apple fruit). DO NOT spray Abound where spray drift may reach apple trees. DO NOT use spray equipment which has been previously used to apply Abound to spray apple trees. Even trace amounts can cause unacceptable phytotoxicity to certain apple and crabapple varieties. AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

Specific Use Restrictions:
1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Do not apply within 14 days of harvest (14-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Grasses (grown for seed)	Ergot Stem Diseases Powdery Mildew (*Erysiphe graminis*) Rust (*Puccinia* spp.)	6.0-15.5 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 10- to 14-day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

Specific Use Restrictions:
1) Do not apply more than 49 fl oz of product/A/season.
2) Do not apply more than 0.8 lb ai/A/season of azoxystrobin-containing products.
3) Do not feed treated straw, seed, or screenings to livestock.
4) Abound may be applied up to 8 days prior to harvest (swathing) (8-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Peanuts	**Soilborne Diseases – early season (in-furrow application)** Aspergillus Crown Rot (*Aspergillus niger*) Pythium Damping Off (*Pythium* spp.) Stem Rot/White Mold Suppression (*Sclerotium rolfsii*)	0.40-0.80 fl oz/ 1000 row feet	Apply Abound in-furrow at planting for control of various seed/seedling diseases including early season suppression of stem rot. See directions and rates under **PRODUCT INFORMATION** section.
	Soilborne Diseases – mid-late season Rhizoctonia Peg and Pod Rot (*Rhizoctonia solani*) Stem Rot/White Mold (*Sclerotium rolfsii*) **Suppression Only:** Cylindrocladium Black Rot (*Cylindocladium crotalariae*) Pythium Pod Rot (*Pythium myriotylum*)	12.0-24.5 (0.20-0.40)	Abound should be applied at approximately 60 and 90 days after planting as a foliar application. This application regime may be applied earlier in the season if environmental conditions favor disease development. These two applications of Abound will provide protection against the soilborne diseases and will also provide control of the foliar diseases listed for a 10- to 14-day period after each spray. Under heavy disease pressure and/or where there is high rainfall and/or irrigation, use 18.5-24.5 fl oz/A. For light disease pressure and dry environmental conditions (non-irrigated, low rainfall), use 12.0-24.5 fl oz/A. For control of Pythium, a rate of 24.5 fl oz/A is required. Additional applications of other fungicides on a leaf spot application schedule will be required to provide season-long disease control of the leaf spot diseases. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates.

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Peanuts *(continued)*	**Foliar Diseases** Early Leaf Spot (*Cercospora arachidicola*) Late Leaf Spot (*Cercosporidium personatum*) Rust (*Puccinia arachidis*) Web Blotch (*Phoma arachidicola*)	6.0-18.5 (0.10-0.30)	For foliar disease control only, a lower rate of Abound may be applied on a 10- to 14-day interval. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
Specific Use Restrictions: 1) Do not apply more than 49 fl oz of product/A/season. 2) Do not apply more than 0.8 lb ai/A/season of azoxystrobin-containing products. 3) Do not apply within 14 days of harvest (14-day PHI).			
Pecans	Anthracnose (*Glomerella cingulata*) Scab (*Cladosporium caryigenum*)	6.0-12.0 (0.10-0.20)	Abound applications should begin prior to disease development and continue throughout the season on 7- to 21-day intervals following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
Specific Use Restrictions: 1) Do not apply more than 73.8 fl oz of product/A/season. 2) Do not apply more than 1.2 lb ai/A/season of azoxystrobin-containing products. 3) Do not apply within 45 days of harvest (45-day PHI).			

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Pistachios	Alternaria Late Blight *(Alternaria alternata)* Botryosphaeria Panicle and Shoot Blight (*Botryosphaeria dothidea*) Septoria Leaf Spot (*Septoria pistaciarum*)	12.0-15.5 (0.20-0.25)	Abound applications should begin prior to disease development and continue throughout the season on 7- to 21-day intervals following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.

Specific Use Restrictions:
1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Do not apply within 7 days of harvest (7-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Stone Fruits Apricot Cherry, Sweet Cherry, Tart Nectarine Peach Plum Plumcot Prune	Brown Rot Blossom Blight and Fruit Rot (*Monilinia fructicola, M. laxa*)	12.0-15.5 (0.20-0.25)	For brown rot blossom blight, begin applications at early bloom and continue through petal fall. For brown rot on fruit, Abound may be applied to fruit up to the day of harvest. For scab, begin applications at petal fall and continue at 7- to 14-day intervals. For all other diseases, begin application at the onset of disease as a protectant fungicide and continue on a 7- to 14-day schedule. For peaches only, 9.0-15.5 fl oz of Abound may be used for scab control. Applications may be made by ground, air or chemigation. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Scab (*Cladosporium carpophilum*) Alternaria Spot and Fruit Rot (*Alternaria alternata*) Anthracnose (*Colletotrichum prunicola, C. gloeosporioides*) Leaf Rust (*Tranzschelia discolor*) Powdery Mildew (*Sphaerotheca pannosa, Podosphaera clandestina*) Shot Hole (*Wilsonomyces carpophilus*)	12.0-15.5 (0.20-0.25)	

Specific Use Restrictions:
1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Abound may be applied the day of harvest (0-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Tree Nuts Beechnut Brazil Nut Butternut Cashew Chestnut Chinquapin Filbert Hickory Macadamia Pecan Walnut Almonds, Pistachios (see specific use instructions)	Alternaria Leaf and Fruit Spot (*Alternaria alternata*) Anthracnose (*Colletotrichum acutatum, Glomerella cingulata*) Eastern Filbert Blight (*Anisogramma anomale*) Late Blight (*Alternaria alternata*) Scab (*Cladosporium carpophilum*) Septoria Leaf Spot (*Septoria pistaciarum*) Shot Hole (*Wilsonomyces carpophilus*) Blossom Blight (*Monilinia laxa, M. fructicola*)	12.0 (0.20)	Abound applications should begin prior to disease development and continue throughout the season following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. For all other diseases begin applications prior to disease development and continue at 7- to 21-day intervals throughout the season. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11. For blossom blight, begin applications at early bloom and continue through petal fall.

Specific Use Restrictions:
1) Do not apply more than 73.8 fl oz of product/A/season.
2) Do not apply more than 1.2 lb ai/A/season of azoxystrobin-containing products.
3) Do not apply within 45 days of harvest (45-day PHI).

Crop	Target Diseases	Use Rate fl oz product/A (lb ai/A)	Remarks
Tropical Fruit Acerola Atemoya Avocado Biriba Canistel Cherimoya Custard Apple Dragon Fruit Feijoa Guava Ilama Jaboticaba Jackfruit Longan Loquat Lychee Mango Papaya Passionfruit Pawpaw Persimmon Pulasan Rambutan Sapodilla Sapote, Black Sapote, Mamey Sapote, White Soursop Star Apple Starfruit Sugar Apple Spanish Lime Tamarind	Anthracnose (*Colletotrichum* spp.) Cercospora Leaf Spot (*Cercospora* spp.) Powdery Mildew (*Erysiphe* spp.) Rust (*Puccinia* spp.)	6.0-15.5 (0.10-0.25)	Abound applications should begin prior to disease development and continue throughout the season on a 10- to 14-day schedule, following the resistance management guidelines. Applications may be made by ground, air or chemigation. An adjuvant may be added at specified rates. Follow the resistance management guidelines in the Resistance Management Section. Do not apply more than two sequential applications of Abound or other Group 11 fungicides before alternation with a fungicide that is not in Group 11.
	Soilborne Diseases Seedling Root Rot, Basal Stem Rot (*Rhizoctonia solani*)	0.40-0.80 fl oz/ 1000 row feet	For soilborne/seedling disease control, see directions and rates under the **SOILBORNE/SEEDLING DISEASE CONTROL** section.

Specific Use Restrictions:
1) Do not apply more than 92.3 fl oz of product/A/season.
2) Do not apply more than 1.5 lb ai/A/season of azoxystrobin-containing products.
3) Abound may be applied the day of harvest (0-day PHI).

Abound Rate Conversion Chart

Fluid Ounces Product/A	Lb ai/A	Treated Acres/Gal Product
4.0	0.07	32.0
5.0	0.08	25.6
5.5	0.09	23.2
6.0	0.10	21.3
6.2	0.10	21.3
7.0	0.11	18.3
8.5	0.14	15.4
9.0	0.15	14.2
9.2	0.15	14.2
10.0	0.16	13.0
11.0	0.18	11.6
12.0	0.20	10.4
12.3	0.20	10.4
13.0	0.21	9.8
14.0	0.23	9.1
15.4	0.25	8.3
15.5	0.25	8.3
18.3	0.30	6.9
18.5	0.30	6.9
20.0	0.33	6.4
20.3	0.33	6.4
24.5	0.40	5.2

POST HARVEST APPLICATIONS

Crop	Target Diseases	Use Rate	Remarks
Bananas Plantains	Crown Rot/Crown Mold (*Colletotrichum musae, Fusarium pallidoroseum, Acremonium* spp., *Ceratocystis paradoxa, Glomerella cingulata, Penicillium* spp.)	200-400 ppm solution	Apply Abound as a single application of a 200-400 ppm solution to achieve good coverage. The application may be made as a spray, dip or may be painted onto the cut ends of the bananas. Application of the 200 ppm rate is appropriate for short distance transportation (e.g., within the USA). When a longer time in transport is expected (export), use the 300-400 ppm rate. If alum (1% w/v) is added to the spray solution, stir the suspension frequently as sedimentation and flocculation may occur. Addition of a non-ionic surfactant (0.10% v/v) may improve the compatibility of this mixture.

Amount of Abound to Mix 100 Gallons for Post-Harvest Banana Applications

Abound Use Rate	100.0 gal Spray Solution
200 ppm	11 fl oz
300 ppm	15 fl oz
400 ppm	21 fl oz

Specific Use Restrictions:

1) Do not make more than one application to bananas as post-harvest treatment.
2) Abound may be degraded by exposure to direct sunlight. Do not store treated fruit in direct sunlight.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage

Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to the label.

Pesticide Disposal

Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Container Handling [less than or equal to 5 gallons]

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

Container Handling [Bulk/Mini-Bulk]

Refillable container. Refill this container with pesticide only. Do not reuse the container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the person refilling. To clean container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

Non-refillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER.

For non-emergency (e.g., current product information) call
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:
Syngenta Crop Protection, LLC
P.O. Box 18300
Greensboro, North Carolina 27419-8300

SCP 1098A-L1K 1113
4033540

GROUP 11 FUNGICIDE

Abound®
Flowable Fungicide

Flowable Fungicide

Broad spectrum fungicide for control of plant diseases

Active Ingredient:
Azoxystrobin: methyl (*E*)-2-{2-[6-(2-cyanophenoxy) pyrimidin-4-yloxy]phenyl}-3-methoxyacrylate*...22.9%

Other Ingredients:	77.1%
Total:	100.0%

Contains 2.08 lb of active ingredient per gallon
*IUPAC

See additional precautionary statements and directions for use inside booklet.

Reformulation is prohibited. See individual container labels for repackaging limitations.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

EPA Reg. No. 100-1098
EPA Est. 100-NE-001

This product is protected by U.S. Patent Numbers 5,602,076 and 5,633,256.

Manufactured for:
Syngenta Crop Protection, LLC
P.O. Box 18300
Greensboro, North Carolina 27419-8300

SCP 1098A-L1K 1113
4033540

1 gallon Net Contents

(01) 0 07 02941 54427 7

KEEP OUT OF REACH OF CHILDREN.

CAUTION

FIRST AID

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Have the product container or label with you when calling a poison control center or doctor or going for treatment. **HOTLINE NUMBER:** For 24-Hour Medical Emergency Assistance (Human or Animal) Or Chemical Emergency Assistance (Spill, Leak, Fire or Accident) Call **1-800-888-8372.**

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse. Wear long-sleeved shirt and long pants, socks and shoes and chemical-resistant gloves made of any waterproof material such as polyvinyl chloride, nitrile rubber or butyl rubber.

Environmental Hazards: Azoxystrobin is toxic to freshwater and estuarine/marine fish and aquatic invertebrates. Azoxystrobin can be persistent for several months or longer.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or regional office of the EPA.

For terrestrial uses: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Ground Water Advisory: Azoxystrobin and a degradate of azoxystrobin are known to leach through soil to ground water under certain conditions as a result of label use. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow.

Surface Water Advisory: This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of azoxystrobin and a degradate of azoxystrobin from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

Notify State and/or Federal authorities and Syngenta immediately if you observe any adverse environmental effects due to use of this product.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage: Store in original containers only. Keep container closed when not in use. Do not store near food or feed. In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to the label.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

Container Handling [less than or equal to 5 gallons]: Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use and disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

CONTAINER IS NOT SAFE FOR FOOD, FEED OR DRINKING WATER.

syngenta®

GROUP 9 FUNGICIDE

PULL HERE TO OPEN

Vangard® WG

syngenta®

Fungicide

Active Ingredient:
Cyprodinil:
4-cyclopropyl-6-methyl-*N*-phenyl-pyrimidinamine* 75.0%

Other Ingredients:	25.0%
Total:	100.0%

*CAS No. 121552-61-2

Vangard WG is a water-dispersible granule.

KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

EPA Reg. 100-828
EPA Est. 67545-AZ-1

Product of Switzerland
Formulated in the USA

SCP 828A-L1R 0713
4029982

3 pounds
2 ounces
Net Weight

TM

FIRST AID	
If in eyes	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
NOTE TO PHYSICIAN If ingested, induce emesis or lavage stomach. Treat symptomatically.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	
HOT LINE NUMBER For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call **1-800-888-8372**	

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco or the toilet. Remove and wash contaminated clothing before reuse.

continued...

PRECAUTIONARY STATEMENTS *(continued)*

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

All other applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof materials such as polyethylene or polyvinyl chloride
- Shoes plus socks

In addition, mixers and loaders for aerial and groundboom applications must wear:

- Filtering facepiece respirator (N95, R95, or P95) (e.g., a dustmask)

User Safety Requirements

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Control Statements

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Environmental Hazards

This pesticide is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Surface and Ground Water Advisory

This chemical may contaminate water through runoff. This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This chemical has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this chemical. A level, well maintained vegetative buffer strip between areas to which this chemical is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of cyprodinil from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

Physical or Chemical Hazards

Do not use, pour, spill or store near heat or open flame.

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of SYNGENTA CROP PROTECTION, LLC or Seller. To the extent permitted by applicable law, Buyer and User agree to hold SYNGENTA and Seller harmless for any claims relating to such factors.

SYNGENTA warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. To the extent permitted by applicable law: (1) this warranty does not extend to the use of the product contrary to label instructions or under conditions not reasonably foreseeable to or beyond the control of Seller or SYNGENTA, and (2) Buyer and User assume the risk of any such use. TO THE EXTENT PERMITTED BY APPLICABLE LAW, SYNGENTA MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS WARRANTED BY THIS LABEL.

To the extent permitted by applicable law, in no event shall SYNGENTA be liable for any incidental, consequential or special damages resulting from the use or handling of this product. **TO THE EXTENT PERMITTED BY APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF SYNGENTA AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF SYNGENTA OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

SYNGENTA and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of SYNGENTA.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks

PRODUCT INFORMATION

Vangard WG is a broad spectrum fungicide which controls certain diseases in fruits, nuts and vegetables.

PRODUCT USE PRECAUTIONS

FAILURE TO FOLLOW DIRECTIONS AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR DISEASE CONTROL, AND/OR ILLEGAL RESIDUES.

APPLICATION INFORMATION

Vangard WG fungicide has preventative and systemic properties and is labeled for the control of many important plant diseases. Vangard WG provides excellent disease control of Botrytis, several leaf spots and powdery mildews. Vangard WG is applied as a foliar spray and can be used in block, alternating spray, or tank-mix programs with other crop protection products. Make all applications according to the use directions that follow.

PRODUCT USE INSTRUCTIONS

Application: Thorough coverage is necessary to provide good disease control. Make no more spray solution than is needed for application. Avoid spray overlap, as crop injury may occur.

Adjuvants: When an adjuvant is to be used with this product, Syngenta recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

Efficacy: Under certain conditions conducive to extended infection periods, use another registered fungicide for additional applications if the maximum amount of Vangard WG has been used. If resistant isolates to Group 9 fungicides are present, efficacy can be reduced for certain diseases. The higher rates in the rate range and/or shorter spray intervals may be required under conditions of heavy infection pressure, with highly susceptible varieties, or when environmental conditions are conducive to disease.

Integrated Pest Management (IPM): Integrate Vangard WG into an overall disease and pest management strategy whenever the use of a fungicide is required. Follow cultural practices known to reduce disease. Consult your local agricultural authorities for additional IPM strategies established

for your area. Vangard WG may be used in State Agricultural Extension advisory (disease forecasting) programs which recommend application timing based on environmental factors favorable for disease development.

RESISTANCE MANAGEMENT

GROUP 9 FUNGICIDE

Vangard WG contains the fungicide cyprodinil, an anilinopyrimidine in Group 9. A disease management program that includes alternation or tank mixes between Vangard WG and other labeled fungicides that have a different mode of action is essential to prevent pathogen populations from developing resistance to Vangard WG. Do not alternate or tank mix this product with fungicides to which resistance has already developed. Vangard WG may be applied in an alternating or blocking program.

As part of a resistance management strategy:

- Apply no more than 2 sequential applications unless otherwise stated in the crop section.
- When tank mixing or alternating, use an effective partner – one that provides satisfactory disease control when used alone at the mixture rate.

Crop Tolerance: Plant tolerance has been found to be acceptable for all crops on the label, however, not all possible tank-mix combinations have been tested under all conditions. When possible, test the combinations on a small portion of the crop to ensure that a phytotoxic response will not occur as a result of application.

Spray Drift Management: To avoid spray drift, do not apply when conditions favor drift beyond the target area. The interaction of many equipment and weather related factors determine the potential for spray drift. AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER. More information on managing spray drift can be found on the SYNGENTA CROP PROTECTION website under Stewardship (http://www.syngentacrop protection-us.com/enviro/driftmanagement/index.asp?nav=drift_management).

Rotational Crop Restrictions

Do not plant any crop which is not registered for use with cyprodinil for a period of 30 days, unless a shorter interval is specified on the following list.

Rotation Crop	Planting Time From Last Vangard WG Application
Beans (dried and succulent except cowpeas) Berries (bushberries 13-07B, caneberries 13-07A) Brassica (Cole) Leafy Vegetables Cucurbits Herbs (fresh and dried) Leafy Vegetables Leaves of Root and Tuber Vegetables Onions (dry bulb, including garlic, and green) Peppers Root Vegetables except Sugar beet Strawberries Tomatoes and tomatillos Watercress Crops Not Intended for Food or Feed	0 days
All Other Crops Intended for Food or Feed	30 days

In annual crops, where multiple crops can be grown per year (double/triple cropping), do not apply more than 1.3 lb ai per acre per year to an individual plot of land.

APPLICATION AND MIXING PROCEDURES

Mixing

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean spray equipment before using this product. Vigorous agitation is necessary for proper dispersal of the product. Maintain maximum agitation throughout the spraying operation. Do not let the spray mixture stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area. Buffer the spray solution to a pH of 5.0-7.0 when tank mixed with Rovral® Fungicide.

Vangard WG Alone: Add 1/2 of the required amount of water to the mix tank. With the agitator running, add the Vangard WG to the tank. Continue agitation while adding the remainder of the water. Begin application of the solution after the Vangard WG has completely dispersed into the mix water. Maintain agitation until all of the mixture has been applied.

Vangard WG + Tank Mixtures: Add 1/2 of the required amount of water to the mix tank. Start the agitator running before adding any tank-mix partners. In general, add tank-mix partners in this order: products packaged in water-soluble packaging, wettable powders, wettable granules (dry flowables) such as Vangard WG, liquid flowables, liquids, and emulsifiable concentrates. Always allow each tank-mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all the mixture has been applied.

When using Vangard WG in tank mixtures, add all products in water-soluble packaging to the tank before any other tank-mix partner, including Vangard WG. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank-mix partner to the tank.

If using Vangard WG in a tank mixture, observe all directions for use, crops/sites, use rates, dilution ratios, precautions, and limitations which appear on the tank mix product label. Do not exceed label dosage rates, and follow the most restrictive label precautions and limitations. Vangard WG must not be mixed with any product which prohibits such mixing. Tank mixtures or other applications of products referenced on this label are permitted only in those states in which the referenced products are registered.

Additives: Vangard WG is compatible with most crop protection additives. Do not use X-77® with Vangard WG for bloom sprays applied to stone fruits, almonds and pistachios.

Application

For best disease control apply Vangard WG in sufficient water to provide thorough and uniform coverage. Use minimum ground spray volumes of 50 gal/A for tree crops, 30 gal/A for vine crops, and 15 gal/A for field and vegetable crops. For aerial application, see spray volume requirements in the specific crop directions for use.

To prevent spray drift, do not apply when conditions favor drift beyond the target area. Spray overlap may cause crop injury.

For air assisted or air blast sprayers move spray droplets into the canopy using a forced air stream. Set up the fan to deliver only enough air volume to penetrate the canopy and provide good coverage. Adjust deflectors or other aiming devices to direct spray only to the target area.

Equip sprayers with nozzles that provide accurate and uniform application. Check whirl plates and nozzle discs for wear and replace as necessary. Calibrate sprayer before use.

Use a pump with capacity to maintain the correct rated pressure for the nozzles selected. Maintain sufficient agitation to keep the spray mixture in suspension. Use a jet agitator, liquid sparge tube, or mechanical paddle for agitation. Do not air sparge.

Use screens to prevent nozzles from clogging. Use 50-mesh or coarser screens placed after the tank and before the nozzles. Check nozzle manufacturer's recommendations.

For more information on spray equipment and calibration, consult sprayer manufacturers and state recommendations. For specific local directions and spray schedules, consult the current state agricultural experiment station recommendations.

OBSERVE THE FOLLOWING PRECAUTIONS WHEN SPRAYING IN THE VICINITY OF AQUATIC AREAS SUCH AS LAKES, RESERVOIRS, RIVERS, PERMANENT STREAMS, MARSHES OR NATURAL PONDS, ESTUARIES, AND COMMERCIAL FISH PONDS.

- Do not apply within 75 ft of bodies of water such as lakes, reservoirs, rivers, permanent streams, natural ponds, marshes or estuaries.
- Shut off the sprayer when row ends.

- Do not cultivate within 10 ft of aquatic areas in order to allow a vegetative filter strip.
- Do not apply when weather conditions favor drift to aquatic areas. Do not apply when gusts or sustained winds exceed 10 mph.
- Do not apply during a temperature inversion. Mist or fog may indicate the presence of an inversion in humid areas.
- For perennial crops such as tree crops and grapes:
  - For all plantings within 150 ft of bodies of water as described above, spray crops from outside the planting away from the bodies of water.
  - Spray last three rows windward of aquatic areas using nozzles on one side only, with spray directed away from aquatic areas. Adjust or turn off top nozzles to prevent spray going over the tops of trees. Shut off nozzles on the side away from the grove/orchard when spraying the outside row. Shut off nozzles when turning at ends of row or passing tree gaps in the rows.

Aerial Spray Precautions

Avoid applications under conditions when uniform coverage cannot be obtained or when excessive drift may occur.

Observe the following precautions when spraying in the vicinity of aquatic areas such as lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish ponds.

- Use only on crops where aerial applications are indicated.
- Do not apply by air within 150 ft of lakes, reservoirs, rivers, permanent streams, marshes or natural ponds, estuaries and commercial fish ponds.
- For aerial applications, mount the spray boom on the aircraft so as to minimize the drift caused by wing tip vortices. Use the minimum practical boom length, which must not exceed 75% of wing span or rotor diameter.
- Use the largest droplet size consistent with good pest control. Formation of very small droplets may be minimized by appropriate nozzle selection, by orientating nozzles away from the air stream as much as possible, and by avoiding excessive spray boom pressure.

- Release spray at the lowest height consistent with pest control and flight safety. Do not make applications more than 10 feet above the crop canopy.
- Risk of exposure to aquatic areas can be reduced by avoiding applications when wind direction is toward the aquatic area.
- Do not apply when weather conditions favor drift to aquatic areas. Do not apply when gusts or sustained winds exceed 10 mph.
- Low humidity and high temperatures increase the evaporation rate of spray droplets and therefore the likelihood of increased spray drift to aquatic area. Avoid spraying during conditions of low humidity and/or high temperatures.
- Do not apply during a temperature inversion. Mist or fog may indicate the presence of an inversion in humid areas.

Application Through Irrigation Systems (Chemigation)

- Use only on crops for which chemigation is specified on this label.
- Apply this product only through center pivot, solid set, hand move, or moving wheel irrigation systems. Do not apply this product through any other type of irrigation system.
- Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water.
- Apply in 0.125-0.25 inches/A of water. Excessive water may reduce efficacy.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system, unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Note: Do not inject Vangard WG at full strength or deterioration of valves and seals may occur. Use a dilution ratio of at least 10 parts water to 1 part Vangard WG. Vangard WG is corrosive to many seal materials. Leather seals are best. EPDM or silicone rubber seals can be used, but should be replaced once a year. Do not use Viton®, Buna-N, Neoprene, or PVC seals.

Operating Instructions

1. The system must contain a functional check-valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water-source contamination from backflow.
2. The pesticide injection pipeline must contain a functional, automatic, quick-closing check-valve to prevent the flow of fluid back toward the injection pump.
3. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
4. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
5. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended.

Center Pivot Irrigation Equipment

Notes: (1) Use only with drive systems which provide uniform water distribution. (2) Do not use end guns when chemigating Vangard WG through center pivot systems because of non-uniform application.

- Determine the size of the area to be treated.
- Determine the time required to apply 1/8-1/2 inch of water over the area to be treated when the system and injection equipment are operated at normal pressures as recommended by the equipment manufacturer. When applying Vangard WG through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution. Run the system at 80-95% of the manufacturer's rated capacity.
- Using water, determine the injection pump output when operated at normal line pressure.
- Determine the amount of Vangard WG required to treat the area covered by the irrigation system.
- Add the required amount of Vangard WG and sufficient water to meet the injection time requirements to the solution tank.
- Make sure the system is fully charged with water before starting injection of the Vangard WG solution. Time the injection to last at least as long as it takes to bring the system to full pressure.
- Maintain constant solution tank agitation during the injection period.
- Continue to operate the system until the Vangard WG solution has cleared the sprinkler head.

Solid Set, Hand Move, and Moving Wheel Irrigation Equipment

- Determine the acreage covered by the sprinklers.
- Fill injector solution tank with water and adjust flow rate to use the contents over a 20 to 30-minute interval. When applying Vangard WG through irrigation equipment use the lowest obtainable water volume while maintaining uniform distribution.
- Determine the amount of Vangard WG required to treat the area covered by the irrigation system.
- Add the required amount of Vangard WG into the same quantity of water used to calibrate the injection period.
- Operate the system at the same pressure and time interval established during the calibration.

- Stop injection equipment after treatment is completed. Continue to operate the system until the Vangard WG solution has cleared the last sprinkler head.

SPECIFIC INSTRUCTIONS FOR PUBLIC WATER SYSTEMS

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back-flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
5. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
6. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
7. Do not apply when wind speed favors drift beyond the area intended for treatment.

CROP USE DIRECTIONS - TREES, NUTS AND VINES

Crop	Disease	Rate oz/Acre	Remarks
Almonds	Brown rot blossom blight (*Monilinia* spp.) Suppression: Green fruit rot (Jacket Rot) (*Botrytis cinerea*) Shot hole (*Wilsonomyces carpophilus*)	5-10	Apply Vangard WG at 5-10% bloom. Additional applications at 50-100% bloom and petal fall may be necessary. When used for control of brown rot blossom blight, Vangard WG will provide suppression of shot hole. For broad spectrum disease control in tank mixture, apply Vangard WG at a minimum rate of 5 oz in tank mixtures with other fungicides registered for use on almonds. For suppression of green fruit rot apply Vangard WG at full bloom. Disease suppression for almond diseases refers to erratic control from fair to good, or consistent control at a level below that obtained with products registered for control.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		

Specific Use Restrictions

1) Make no more than two applications by air.
2) Do not apply more than 30 oz/A of Vangard WG (1.4 lb ai/A of cyprodinil) per plot of land per year.
3) Do not apply within 60 days of harvest (60-day PHI).

Crop	Disease	Rate oz/Acre	Remarks
Small fruit vine climbing Subgroup 13-07F (except fuzzy kiwifruit) **Grapes** Amur river grape Hardy kiwifruit Maypop Schisandra berry And cultivars and/or hybrids of these	Botrytis bunch rot (*Botrytis* spp.) Suppression: Powdery mildew (*Uncinula necator*)	**Vangard WG alone** 10	Begin applications of Vangard WG at early bloom. Make an additional application at berry touch, veraison, or preharvest using at least a 7-day spray interval. Botrytis bunch rot is most effectively controlled by ground application, using sufficient water volume to provide thorough coverage. Thorough coverage of bunches is essential. When used at 10 oz/A, Vangard WG will provide significant suppression (approximately 60% control) of powdery mildew.
		Vangard WG tank mixtures 5-10	Apply Vangard WG in tank mixture with the label rate of another fungicide registered on grapes for control of Botrytis bunch rot.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		

Specific Use Restrictions
1) Make no more than two applications by air.
2) Do not apply more than 30 oz/A of Vangard WG (1.4 lb ai/A of cyprodinil) per plot of land per year.
3) Do not apply within 7 days of harvest (7-day PHI).

continued...

Crop	Disease	Rate oz/Acre	Remarks
Kiwi	Botrytis Fruit Rot (*Botrytis* spp.)	10	Make 1-2 applications on a 7-10 day interval prior to harvest to prevent post harvest fruit rot.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		
Specific Use Restrictions 1) Make no more than two applications by air. 2) Do not apply more than 20 oz of Vangard WG (0.94 lb ai/A of cyprodinil) per plot of land per year. 3) May be applied on the day of harvest (0-day PHI).			
Pistachios	Botrytis (*Botrytis* spp.) Alternaria *(Alternaria alternata)*	5.5 - 7	Make the first application during early bloom and repeat applications at 14-day intervals if conditions remain favorable for disease development.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		
Specific Use Restrictions 1) Make no more than two applications by air. 2) Do not apply more than 28 oz/A of Vangard WG (1.3 lb ai/A of cyprodinil) per plot of land per year. 3) Do not apply within 7 days of harvest (7-day PHI).			

Crop	Disease	Rate oz/Acre	Remarks
Pome Fruits Apples Crabapples Loquat Mayhaw Pears (see tank mixture instructions) Quince And cultivars and/or hybrids of these See additional crops below.	**Prebloom** Scab (*Venturia* spp.)	**Vangard WG alone:** 5	For pome fruits except pear, begin application at green tip and continue on a 7- to 10-day interval. Under severe disease pressure use the shorter interval.
		Vangard WG tank mixtures: 3-5	For scab control utilizing multiple modes of action, apply Vangard WG in tank mixture with the label rate of a protectant or systemic fungicide registered on pome fruit. Make applications on a 7- to 10-day interval.
	Pink, bloom, post-bloom Scab (*Venturia* spp.)	**Vangard WG tank mixtures:** 3-5	Apply Vangard WG in tank mix combination with the label rate of a protectant fungicide. Use of the label rate of an EBDC fungicide will broaden the disease control spectrum to include cedar apple rust. The addition of the label rate of sulfur or a sterol inhibitor (SI) fungicide to this tank mix will broaden the disease control spectrum to include powdery mildew.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		
Additional Pome Fruit Crops: Apple; Azarole; Crabapple; Loquat; Mayhaw; Medlar; Pear; Pear, Asian; Quince; Quince, Chinese; Quince, Japanese; Tejocote and cultivars, varieties and/or hybrids of these.			
Specific Use Restrictions 1) When applying to pears, apply Vangard WG in tank mix only. 2) Make no more than two applications by air. 3) Do not apply more than 30 oz/A of Vangard WG (1.4 lb ai/A of cyprodinil) per plot of land per year. 4) Do not apply within 0 days of harvest (0-day PHI).			

continued...

Crop	Disease	Rate oz/Acre	Remarks
Stone Fruits Apricots Tart cherries Nectarines Peaches Plums Prunes And cultivars and/or hybrids of these	Brown rot blossom blight (*Monilinia* spp.)	5	Begin applications at bloom stage (apricots at red bud, cherries at popcorn, peaches and nectarines at pink bud, plums and prunes at green tip). Make a second application at full bloom. Use Vangard WG alone or in tank mixture with the label rate of another fungicide registered for stone fruit.
	California only Fruit brown rot (*Monilinia* spp.)	**Vangard WG alone** 10	Apply a maximum of 2 applications of Vangard WG during the preharvest period up through 2 days prior to harvest as needed.
		Vangard WG tank mixtures 5	Apply Vangard WG in tank mixture with the label rate of another fungicide registered on stone fruit for control of fruit brown rot.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		
Specific Use Restrictions 1) Do not apply Vangard WG to sweet cherries. 2) Make no more than two applications by air. 3) Do not apply more than 30 oz of Vangard WG (1.4 lb ai/A of cyprodinil) per plot of land per year. 4) Do not apply within 2 days of harvest (2-day PHI).			

Crop	Disease	Rate oz/Acre	Remarks
Tropical Fruits Avocado Black sapote Canistel Dragon Fruit Lychee Longan Mamey sapote Mango Papaya Pulasan Rambutan Sapodilla Spanish lime Star apple	Botrytis fruit rot (*Botrytis* spp.) Alternaria fruit rot (*Alternaria* spp.) Anthracnose (*Colletotrichum* spp.)	5.5-7	Make the first application during early bloom and repeat on 7- to 10-day intervals if conditions remain favorable for disease development. Resistance Management: After 2 applications of Vangard WG, alternate with another fungicide with a different mode of action for 2 applications.
	Application Instructions: Application may be made by ground or air. Good coverage is essential for good disease control. Use a minimum of 20 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground.		
Specific Use Restrictions 1) Make no more than two applications by air. 2) Do not apply more than 28 oz/A of Vangard WG (1.3 lb ai/A of cyprodinil) per plot of land per year. 3) May be applied on the day of harvest (0-day PHI).			

continued...

CROP USE DIRECTIONS – VEGETABLES

Crop	Disease	Rate oz/Acre	Remarks
Bulb Vegetables Crop Group 3-07A and 3-07B **Bulb Onion** Chinese onion Dry bulb onion Daylily bulb Fritillaria bulb Garlic Great-headed garlic Lily bulb Pearl onion Potato onion Serpent garlic Shallot **Green Onion** Beltsville bunching onion Chinese chive fresh leaves Fresh chive leaves Fritillaria leaves Fresh onion	Botrytis leaf blight or blast (*Botrytis* spp.) Purple blotch (*Alternaria porri*) Suppression: Neck rot (*Botrytis* spp.)	10	Begin applications prior to or at the onset of disease and repeat applications on a 7- to 10-day interval if conditions remain favorable for disease development. For optimal effect on neck rot, apply on a 7-day schedule at the 10 oz rate. Resistance Management: After 2 applications of Vangard WG, alternate with another fungicide with a different mode of action for 2 applications.
	Application Instructions: Application may be made by ground, air, or chemigation. Good coverage is essential for good disease control. Use a minimum of 5 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground or chemigation. For chemigation, apply in 0.1-0.25 inches/A of water. Chemigation with excessive water may lead to a decrease in efficacy.		

Crop	Disease	Rate oz/Acre	Remarks
Bulb Vegetables Crop Group 3-07A and 3-07B *(continued)* **Green Onion *(continued)*** Green onion Hosta elegans Kurrat Lady's leek Leek Macrostem onion Shallot fresh leaves Tree tops onion Welsh onion tops Wild leek Wild onion **Onions grown for seed** And cultivars and/or hybrids of these	Botrytis leaf blight or blast (*Botrytis* spp.) Purple blotch (*Alternaria porri)* Suppression: Neck rot (*Botrytis* spp.)	10	Begin applications prior to or at the onset of disease and repeat applications on a 7- to 10-day interval if conditions remain favorable for disease development. For optimal effect on neck rot, apply on a 7-day schedule at the 10 oz rate. Resistance Management: After 2 applications of Vangard WG, alternate with another fungicide with a different mode of action for 2 applications.
	Application Instructions: Application may be made by ground, air, or chemigation. Good coverage is essential for good disease control. Use a minimum of 5 gallons/A spray volume by air. Make no more than two applications by air. Make additional applications by ground or chemigation. For chemigation, apply in 0.1-0.25 inches/A of water. Chemigation with excessive water may lead to a decrease in efficacy.		

Specific Use Restrictions
1) Make no more than two applications by air.
2) Do not apply more than 28 oz/A of Vangard WG (1.3 lb ai/A of cyprodinil) per plot of land per year.
3) Do not apply within 7 days of harvest (7-day PHI).

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

Pesticide Storage

Store in a cool, dry, secure place.

Pesticide Disposal

Pesticide wastes may be toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

Container Handling [Less Than 5 Gallons]

Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

For non-emergency (e.g., current product information), call
Syngenta Crop Protection at 1-800-334-9481.

Manufactured for:
Syngenta Crop Protection, LLC
P. O. Box 18300
Greensboro, North Carolina 27419-8300

SCP 828A-L1R 0713
4029982

BAR CODE # IS
(01) 0 07 02941 22061
LAST DIGIT IS CHECK DIGIT
UCC/EAN 128

GROUP 9 FUNGICIDE

Vangard® WG

Fungicide

Active Ingredient:	
Cyprodinil: 4-cyclopropyl-6-methyl-*N*-phenyl-pyrimidinamine*	75.0%
Other Ingredients:	25.0%
Total:	100.0%

*CAS No. 121552-61-2

Vangard WG is a water-dispersible granule.

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-828
EPA Est. 67545-AZ-1

Vangard® and the Syngenta logo are trademarks of a Syngenta Group Company

Manufactured for:
Syngenta Crop Protection, LLC
P. O. Box 18300
Greensboro, NC 27419-8300

SCP 828A-L1R 0713
4029982

3 pounds
2 ounces
Net Weight

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to supplemental labeling under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

KEEP OUT OF REACH OF CHILDREN.

CAUTION

Precautionary Statements

Hazards to Humans and Domestic Animals

Causes moderate eye irritation. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using tobacco or the toilet. Remove and wash contaminated clothing before reuse.

FIRST AID

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. **If on skin or clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. **NOTE TO PHYSICIAN:** If ingested, induce emesis or lavage stomach. Treat symptomatically. Have the product container or label with you when calling a poison control center or doctor, or going for treatment. **HOT LINE NUMBER:** For 24 Hour Medical Emergency Assistance (Human or Animal) or Chemical Emergency Assistance (Spill, Leak, Fire, or Accident) Call **1-800-888-8372.**

Environmental Hazards: This pesticide is toxic to fish and aquatic invertebrates. For terrestrial uses: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from treated areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Surface and Ground Water Advisory: This chemical may contaminate water through runoff. This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This chemical has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this chemical. A level, well maintained vegetative buffer strip between areas to which this chemical is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of cyprodinil from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's potential to reach aquatic sediment via runoff.

Physical or Chemical Hazards: Do not use, pour, spill, or store near heat or open flame.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage and disposal.

Pesticide Storage: Store in a cool, dry, secure place.

Pesticide Disposal: Pesticide wastes may be toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

Container Handling: Non-refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration.

syngenta®

Group	U6	Fungicide

Torino® FUNGICIDE

For Agricultural Use Only

	% BY Wt.
ACTIVE INGREDIENT: cyflufenamid; (Z)-N-(α-cyclopropylmethoxyimino-2,3-difluoro-6-trifluoromethylbenzyl)-2-phenylacetamide	10%
INERT INGREDIENTS:	90%
	TOTAL 100%

Contains 0.85 lbs of cyflufenamid active ingredient per gallon

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand the label find someone to explain it to you in detail.)

FIRST AID	
If on Skin or Clothing:	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15-20 minutes. • Call a poison control center or doctor for treatment advice.
If Swallowed:	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • Do not induce vomiting unless told to by a poison control center or doctor. • Do not give anything to an unconscious person
If in Eyes:	• Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. • Call a poison control center or doctor for treatment advice.
If Inhaled:	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.
HOT LINE NUMBER	
For MEDICAL EMERGENCIES call 1-888-478-0798. Have the product container or label with you when calling a poison center or doctor or going for treatment.	
NOTE TO PHYSICIAN	
There is no specific antidote. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred.	

Net Contents: _____

EPA Reg. No. 8033-103-10163
EPA Est. No. 67545-AZ-001

Gowan
The Go To Company

Produced for:
Gowan Company
P.O. Box 5569
Yuma, AZ 85366-5569

PRECAUTIONARY STATEMENTS
HAZARD TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if absorbed through skin. Harmful if swallowed. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco. Wear long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves. Remove and wash contaminated clothing before reuse.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves. Follow manufacturer's instructions for cleaning/maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

User Safety Recommendations

Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

This product may contaminate water through runoff. This product has a potential for runoff for several weeks after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

SPRAY DRIFT

Avoid spray drift. Do not apply when weather conditions may cause drift. Do not allow this product to drift on to non-target areas. To avoid spray drift, DO NOT apply aerially when wind speed is greater than 10 mph or during periods of temperature inversions. For aerial application, select nozzles and pressure that deliver **MEDIUM** spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572. AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR.

The interaction of many equipment and weather related factors determines the potential for spray drift. The applicator is responsible for considering all of these factors when making decisions. The following drift management requirements must be followed to avoid off-target movement from aerial applications to agricultural crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Use the largest droplet size consistent with good pest control. Small droplets are more prone to spray drift and can be minimized by appropriate nozzle selection, by orienting nozzles away from the air stream as much as possible and by avoiding excessive spray boom pressure. Follow more stringent regulations where applicable.

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory below:

AERIAL DRIFT REDUCTION ADVISORY

[This section is advisory in nature and does not supersede the mandatory label requirements].

INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply **MEDIUM** droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (See Wind, Temperature and Humidity, and Temperature Inversions).

CONTROLLING DROPLET SIZE

Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
Pressure - Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets.
When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
Nozzle Orientation - Small droplets are more prone to spray drift and can be minimized by several factors including orienting nozzles away from the air stream. Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

BOOM LENGTH

For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

APPLICATION HEIGHT
Applications should not be made at a height greater than 10 feet above the top of the target plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

SWATH ADJUSTMENT
When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator should compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

WIND
Drift potential is lowest between wind speeds of 2 - 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY
When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

TEMPERATURE INVERSIONS
Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

SENSITIVE AREAS
The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read the entire label before using this product.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 4 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves.

COMPATIBILITY
Torino Fungicide, when diluted with an equal volume of water, is physically compatible with a wide range of commonly used spray products, but the full range of compatibilities under local conditions is not known. Therefore, it is essential that before using Torino Fungicide in any tank mixture the compatibility of the mixture be established. Add a small amount of this product to an equal volume of water in a small container and then add the other pesticide or spray product and mix thoroughly. DO NOT USE MIXTURES THAT CURDLE, PRECIPITATE, OR GREASE. FOR BEST RESULTS, SPRAY MIXTURES SHOULD BE USED IMMEDIATELY AFTER MIXING WITH ADEQUATE AGITATION.

DIRECTIONS FOR AERIAL OR GROUND SPRAY APPLICATION

Torino Fungicide is a 10% suspension concentrate for the control of powdery mildew on the crops listed on this label. Thorough spray coverage is essential for optimal performance.

Users must read, understand, and follow the label use rates and restrictions. Minimum label rates may be used under low disease pressure conditions while maximum label rates and shortened spray intervals are recommended under high disease pressure. For application, determine the number of acres to be treated, the recommended label use rate, and the spray volume per acre. Prepare only the amount of spray solution that is necessary to spray the measured acres. Calibrate spray equipment prior to use.

Ground Application: For optimal disease control use thorough spray coverage. Good spray coverage is a function of spray pressure, spray volume per acre, nozzle type and spacing and application equipment speed. Calibrate spray equipment prior to use.

Aerial Application: Apply in a minimum of 5 GPA for row crops and 10 GPA for orchard crops. Do not apply under conditions when uniform coverage cannot be obtained or when excessive spray drift may occur.

MIXING INSTRUCTIONS

Recommended Mixing and Application Instructions for Torino Fungicide

Torino Fungicide is a liquid suspension concentrate formulation that readily disperses in water to form a spray mixture, which may be applied by ground or air.

1. Plan ahead. Prepare only enough spray mixture as can be applied on the day of mixing.
2. Fill tank 1/4 – 1/2 full with the required amount of total spray volume of water.
3. Shake the product container well before using. Begin agitation and add product.
4. Continue to fill tank.
5. Allow mixing in tank for 2 minutes after filling or until thoroughly mixed before applying.
6. Maintain continuous agitation during mixing and application to assure uniform suspension. If mixture sits without agitation for extended periods, agitate the mixture for at least 10 minutes before use.
7. Equip spray system with a 50 mesh inline filter, which will protect nozzles that are typically used. Nozzles may also be equipped with 50-mesh nozzle filters or 25 to 50 mesh (equivalent) slotted nozzle filters.
8. Torino Fungicide may be unstable in water pH below 4 and above 9. If necessary, buffer water to obtain optimum pH range.

Special Instructions for Tank Mixing Torino Fungicide

When tank mixing Torino Fungicide with other products, introduce the products into the tank in the following order: (1) water soluble packets (2) wettable powders (3) water dispersable granules (4) flowable liquids (such as Torino Fungicide and (5) emulsifiable concentrates and (6) adjuvants and/or oils. Always allow each product to fully disperse before adding the next product.

The use of adjuvants or additives may enhance the fungicide performance of Torino under some conditions. Local environmental conditions may affect crop tolerance. Since all possible tank mix combinations have not been examined, test the combination on a small section of the crop to be sprayed to ensure that injury will not occur as a result of application. Consult a Gowan Company representative, local agricultural authorities, or local extension service for more information and recommendations on adjuvants and additives.

APPLICATION INSTRUCTIONS

ROW CROPS

Apply a minimum finished spray volume of 5 gallons per acre by air or 20 gallons per acre by ground unless otherwise directed under crop specific directions. For best results, it is important to obtain thorough and uniform spray coverage of the plant. For aerial application, select nozzles and pressure that deliver MEDIUM spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572.

To clean the sprayer after use, drain and flush with water. Use rinsate on crop according to label instructions or dispose of in an approved manner (See STORAGE AND DISPOSAL).

ORCHARD AND VINE CROPS

To achieve optimum pest control, it is important to obtain thorough and uniform spray coverage. Choose a finished spray volume appropriate for the size of tree or vine and amount of foliage which will provide thorough coverage throughout the canopy. Also follow recommendations listed under crop specific directions. For aerial application, select nozzles and pressure that deliver MEDIUM spray droplets as indicated in nozzle manufacturer's catalogs and in accordance with ASAE Standard S-572. Aerial applications may not provide as thorough coverage as ground applications and subsequently disease control may be reduced.

To clean the sprayer after use, drain and flush with water. Use rinsate on crop according to label instructions or dispose of in an approved manner (See STORAGE AND DISPOSAL).

CHEMIGATION

Do not apply this product through any type of irrigation system.

DISEASE RESISTANCE MANAGEMENT

Torino Fungicide contains a Group U6 fungicide. Fungal isolates with acquired resistance to Group U6 may eventually dominate the fungal population if Group U6 fungicides are used repeatedly in the same field or in successive years as the primary method of control for targeted species. This may result in partial or total loss of control of those species by Torino Fungicide or other Group U6 products.

1. To delay fungicide resistance consider:
   Avoiding the consecutive use of Torino Fungicide or other Group U6 fungicides that have a similar target site of action on the same pathogens.
2. Using tank-mixtures or premixes with fungicides from different target site of action Groups as long as the involved products are all registered for the same use and are both effective at the tank mix or prepack rate on the pathogen(s) of concern.
3. Basing fungicide use on a comprehensive IPM program.
4. Monitoring treated fungal populations for loss of field efficacy.
5. Contacting your local extension specialist, certified crop advisor, and/or the manufacturer for fungicide resistance management and/or IPM recommendations for specific crops and resistant pathogens.

GENERAL RESTRICTIONS

- Do not apply more than 0.044 lbs a.i. per acre to any field in a 12 month period.
- Do not plant back any crop other than those on this label within 30 days following the last application.

CUCURBIT VEGETABLES

SITE	DISEASE	TORINO FUNGICIDE (oz/acre) [POUNDS ACTIVE]	USE RECOMMENDATIONS	RESTRICTIONS
CUCURBIT VEGETABLES Including but not limited to Pumpkin, Squash (summer and winter), Watermelon, and other melons such as Chayote (fruit), Chinese waxgourd (Chinese preserving melon), Citron melon, Cucumber, Gherkin, Gourd (edible), *Mormordica* spp., Muskmelon (hybrid and/or cultivars of *Cucumis melo* including true cantaloupe, cantaloupe, casaba, chreshaw melon, golden pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple melon, Santa Claus melon, and snake melon).	Powdery mildew	3.4 [0.022]	Begin application at first sign of disease development. For the control of other foliar cucurbit diseases, applications of registered fungicides should be made according to their label directions for use. **SPRAY VOLUME FOR CUCURBIT VEGETABLES:** Apply in a minimum finished spray volume of 5 gallons per acre by air or 20 gallons per acre by ground	Do not make more than two (2) applications per year. Do not apply more than once every seven (7) days. Do not exceed a total of 0.044 lbs. active ingredient (3.4 oz product/A X 2 applications) per acre per year. Applications may be made up to and including the day of harvest; (PHI = 0 days).

GRAPES
(and small fruit vine climbing crop subgroup except fuzzy kiwifruit)

SITE	DISEASE	TORINO FUNGICIDE (oz/acre) [POUNDS ACTIVE]	USE RECOMMENDATIONS	RESTRICTIONS
GRAPES; Amur river grape; gooseberry; kiwifruit, hardy; maypop; schisandra berry; cultivars varieties, and/or hybrids of these.	Powdery mildew	3.4 [0.022]	Begin application at first sign of disease development. For the control of other foliar diseases of grapes, applications of registered fungicides should be made according to their label directions for use. Recommended Spray Interval is 14-21 days. **SPRAY VOLUME FOR GRAPES AND SMALL FRUIT VINE CLIMBING CROP SUBGROUP EXCEPT FUZZY KIWIFRUIT:** Apply in a minimum finished spray volume of 5 gallons per acre by air or 20 gallons per acre by ground.	Do not make more than two (2) applications per year. Do not apply more than once every 14 days. Do not exceed a total of 0.044 lbs. active ingredient (3.4 ozs product/A **X** 2 applications) per acre per year. Do not apply within three (3) days of harvest; (PHI = 3 days).

STRAWBERRIES AND OTHER LOW GROWING BERRIES (except cranberries)

SITE	DISEASE	TORINO FUNGICIDE (oz/acre) [POUNDS ACTIVE]	USE RECOMMENDATIONS	RESTRICTIONS
STRAWBERRIES AND OTHER LOW GROWING BERRIES (except cranberries): Bearberry; Bilberry; Lowbush Blueberry; Cloudberry, Lingonberry; Muntries; Partridgeberry; and cultivars, varieties, and/or hybrids of these.	Powdery mildew	3.4 [0.022]	Begin application at first sign of disease development. For the control of other foliar diseases of strawberries and other low growing berries, applications of registered fungicides should be made according to their label directions for use. **SPRAY VOLUME FOR STRAWBERRIES AND OTHER LOW GROWING BERRIES:** Apply in a minimum finished spray volume of 10 gallons per acre by air or 20 gallons per acre by ground.	Do not make more than two (2) applications per year. Do not apply more than once every 14 days. Do not exceed a total of 0.044 lbs. active ingredient (3.4 ozs product/A X 2 applications) per acre per year. Applications may be made up to and including the day of harvest; (PHI = 0 days).

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

STORAGE: Store unused product in original container only, out of reach of children and animals.

DISPOSAL: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents in application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK, OR FIRE), CALL CHEMTREC (800) 424-9300
For other product information, contact Gowan Company or see Material Safety Data Sheet

NOTICE OF CONDITIONS OF SALE AND WARRANTY AND LIABILITY LIMITATIONS

Important: Read the entire Directions for Use and Notice of Conditions of Sale and Warranty and Liability Limitations before using this product. If terms are not acceptable return the unopened container for a full refund.

Our directions for use of this product are based on tests believed to be reliable. However, it is impossible to eliminate all risk associated with the use of this product. Crop injury, inadequate performance, or other unintended consequences may result due to soil or weather conditions, off target movement, presence of other materials, method of use or application, and other factors, all of which are beyond the control of Gowan Company. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer and User.

Gowan Company warrants that this product conforms to the specifications on the label and is reasonably fit for the intended purpose referred to on the label when used in strict conformance with Directions for Use, subject to the above stated risk limitations. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, GOWAN COMPANY MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, GOWAN COMPANY'S EXCLUSIVE LIABILITY FOR ANY AND ALL LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT WHETHER IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, OR ANY OTHER LEGAL THEORY IS STRICTLY LIMITED TO THE PURCHASE PRICE PAID OR REPLACEMENT OF PRODUCT, AT GOWAN COMPANY'S SOLE DISCRETION.

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02-R0913

Appendix 7a

Penn State **Extension**

Copper Compounds - Bordeaux

Copper Compounds

Copper compounds are widely sold as fungicides for orchard and garden use. Copper is a foliar fungicide with protective action. These compounds can be highly phytotoxic to many fruit crops and must be used with extreme care. Check the label for type of copper and any cautions that accompany its use. Please remember to also check the label for rates and application times for best disease control. Many formulations of copper are available to the home gardener (see Table 2.4 [http://extension.psu.edu/plants/gardening/fphg/tables/Table2-4.pdf]).

Copper was first used in the mid-1800s in grape vineyards in France to discourage theft of the grapes. Copper sulfate and lime were mixed in a slurry and spread over the grape vines. In 1882 a French scientist observed that this antitheft treatment was effective in reducing a disease called downy mildew. This observation was made near the town of Bordeaux, so the mixture of copper sulfate and lime became known as Bordeaux mixture.

Copper sulfate is readily soluble in water. This high degree of solubility is the fundamental cause of the toxicity problems, which copper sulfate can cause to all fruit crops. Fixed coppers have been developed that are relatively insoluble and therefore less toxic to plants; however, fixed coppers can also result in phytotoxicity under certain conditions. Fixed coppers include basic copper sulfate, basic copper chloride, copper oxides, and copper hydroxide.

The fungicidal activity of copper is based on its ability to destroy proteins in plants. This is true for all plants, fungi, and fruit plants. When lime is combined with copper compounds, it reacts with the copper, making it more stable. Thus, copper compounds in the presence of lime would generally produce lower, more uniform concentrations of free copper, which in turn would be less apt to injure plant tissues than if no lime were used. Because copper has the ability to kill all types of plant tissues, the use of copper fungicides carries with it the risk of causing injury to fruit plants. Ideally, copper on the leaf or fruit surface should be in high enough concentration to kill the fungus or bacteria but low enough not to cause injury to the plant. Factors that can promote injury include failure to use enough lime; cold, wet weather conditions that apparently increase copper's solubility, allowing more into the plant and resulting in toxicity; and application of excessive rates of copper. Even when no injury is evident on the plant, subtle effects of the copper on the plant may be occurring. In addition, to reduce growth and yields, it has been shown that the use of copper fungicides

can reduce the maturity of the fruit as well as that of the shoots. Copper fungicides can have subtle, chronic negative impacts on fruit plants.

Copper will provide low to moderate control of many of the diseases. Bordeaux may be used on pears during bloom for fire blight control when temperatures are above 70°F and drying conditions are rapid. Fixed coppers, plus lime, are safer than Bordeaux. They may be used for leaf curl control on stone fruits and pre- and postharvest leaf spot control on tart cherries. These compounds are useful in plant nutrition since they supply copper to the plant. Strawberries are very sensitive to copper. Never apply copper to strawberries because severe phytotoxicity will result under almost any conditions.

Do not apply any of the copper compounds without adding lime. Lime should be used at a rate one to two times that of the copper. If a copper material is applied without lime and yellowing and leaf drop occur, an application of lime within 2 to 3 weeks of the copper application may prevent further yellowing and leaf drop. Again, check the label of the product you intend to use to see if lime has already been added in the formulation or if it is advised to add lime and at what rates. Do not use copper in cool wet weather. Do not use immediately before or after using ferbam. Most insecticides are not compatible with lime.

Appendix 7b

Crop Profile: Gooseberries in New York

This material is based upon work supported by the USDA-CSREES-Pest Management Alternatives Program under Award No. 99-34381-8314. Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of the USDA-CSREES-Pest Management Alternatives Program.

I. Profile Prepared By:

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II. Basic Commodity Information

State Rank:.....NA
% U.S. Production:.....NA
Acres of Bearing Age:.....~3.5
Acres Harvested:.....~3.5
Cash Value:.....~$70,000
Yearly Production Costs:.....$NA

Production Regions: Growing any species of gooseberries is prohibited in the following counties of New York: Clinton, Essex, Franklin, Fulton, Hamilton, Lewis, Saratoga, Warren, and Washington. Growing is also prohibited in designated townships of additional counties, as follows: in Herkimer County, the townships of Manheirn, Norway, Ohio, Russia, Salisbury, and Webb; in Oneida County, the townships of Annsville, Ava, Boonville, Camden, Florence, Forestport Lee, Remsen, Steuben, Trenton, and Western; in St. Lawrence County, the townships of Brasher, Clare, Clifton, Colton, Edwards, Fine, Hopkinton, Lawrence, Norfolk, Parishville, Piercefield, Pierrepont, Pitcairn, Russell, and Stockholm; in Sullivan County, the townships of Cochecton, Tusten, Highland, Lumberland, Forestburg, and Mamakating, in Orange County, the town of Deerpark; and in Ulster County, the townships of Hurley, Kingston, Marbletown, Olive, Rochester, Rosendale, Saugerties, Shandaken, Ulster, Wawarsing, and Woodstock.

The federal government and many of the surrounding states have dropped their prohibition against growing gooseberries and currants because the real cause of white pine blister rust has been determined to be the black currant. There is some movement to have these regulations rescinded in New York.

Description: Gooseberries are deciduous shrubs, fast growing under optimum conditions to 3 feet tall and 6 feet wide. American types have weeping stems that will root wherever they touch the ground and can be invasive. Annual growth is in a single flush in the spring. The roots are superficial, fine and easily damaged by frequent cultivation.

The buds perk up early in the spring, dotting the stems with green when most other plants are still dormant. The leaves are alternate, single, deeply lobed, and glossy dark green (European types), or pale to gray-green and sometimes finely pubescent (American types). The stems are thin, becoming woody, with a large thorn at each axil. American gooseberry stems are densely bristly, with one or more additional thorns at each axil. Leaf size and number are reduced under heat or light stress, and are easily burned by intense sunlight. Plants that have been subject to drought may make a new growth flush after deep irrigation. If the roots are lost, regrowth will be delayed until the following spring.

The flowers, green with pink flushed petals, open in early spring. They are borne laterally on one-year old wood and on short spurs of older wood. The flowers are self fertile and pollinated by wind and insects, including bees. Each flower bud opens to yield from one to four flowers, depending on cultivar.

The fruit, borne singly or in pairs at the axils, is a berry with many minute seeds at the center. A gooseberry may be green, white (gray-green), yellow, or shades of red from pink to purple to almost black. Fruits of the European gooseberry may be very large, like a small plum, but are usually one inch long, less in width. American gooseberry fruits are smaller (to 1/2 inch), perfectly round, all becoming pink to wine-red at maturity. Skin color is most intense in full sunlight. Berries generally drop when overripe. The fruit has a distinctive flavor.

Cultivars: American Gooseberry (Pixwell, Poorman) European Gooseberry (Careless, Early Sulphur, Hinnonmaki red, Hinnonmaki yellow, Whinham's Industry, Whitesmith).

Cultural Methods: Gooseberries prefer a cool climate and a rich, moist, but well-drained soil high in organic matter. Silt and clay loams are best; however, plants should do well on fertile sandy loams. Light, sandy soils that tend to become hot and dry during the summer, or land where water stands at any time during the year should be avoided. In general, neither crop thrives in hot, dry places. Because gooseberries blossom very early in the spring, they should not be planted on low lands or in

pockets where late spring frost may injure the blossoms.

The fruit of the gooseberry often scalds badly in hot weather, especially when exposed to direct sun. Gooseberries thrive best when planted on a northern exposure, where they will be shaded part of the day. They also grow well on the north side of structures or in other partially shaded places. Gooseberries are subject to mildew. Therefore, they should be planted where the air circulation is good. On sloping ground, gooseberries should be planted high on the slope.

A gooseberry bush is usually grown on a permanent short leg of about six inches, from which the bush is continually renewed with new shoots arising at or near ground level. Allow stems to grow for 4-5 years, then selectively remove oldest stems to make room for new shoots. Snap off any branches that form along or below the six-inch leg. Thorns make harvest tedious, so pruning is done to open up the bush and make picking easier.

The ease with which gooseberries propagate from cuttings depends on the cultivar. Generally, American cultivars are easier to root than are European cultivars. Seeds require moist stratification, just above freezing, for three to four months. The plants begin to bear fruit in five years from seed and two years from cuttings.

Commodity Destination(s):

Fresh Market.....75%
Processing.....25%

III. Pest Information: Insects

1. Currant Borer

Biology: The adult of this pest is a clear-winged, blue-backed moth with yellow markings.
Symptoms: Eggs are laid in leaf axils. The larva of this moth attacks the canes in mid- to late June, boring in and tunneling up and down as the cane develops. The resulting damage greatly weakens the cane so that it is capable of only sickly growth or it may break off altogether.
Resistant Cultivars: None
Cultural Management: Infested canes are removed and destroyed before June 1. Using recommended pruning practices and removing canes that are too old helps reduce pest infestation.
Chemical Control: None

2. Currant Stem Girdler

Biology: The sawflies emerge from the middle to the last of May in New York; both sexes have shining black bodies and light brownish-yellow legs. In the male nearly all of the abdomen is of a brownish-yellow color, while in the female the front half of the abdomen is reddish-orange, and the rest is black. The female is about 1/2 inch in length, the male somewhat smaller. The former is provided with a stout, sharp saw-toothed ovipositor, which when inserted extends at a right angle beneath the abdomen. By means of this ovipositor the female punctures a cane a few inches from the tip and inserts the elongate oval, yellowish-white egg into the pith. After the egg is deposited the female walks up the shoot from one half inch to an inch and deftly girdles the cane with her ovipositor. Sometimes the girdling is so complete that the tip falls at once, but usually a portion remains uncut and the tip may remain attached for some time, especially if the shoot is a large one. This killing of the tip of the cane seems to be necessary for the development of the egg and grub.

The eggs hatch in about eleven days. The grubs feed almost entirely on the pith, which they tunnel out to a distance of not over six inches, leaving the burrow packed full of excrement behind them. The borer becomes full-grown about the first of September and cleans out the lower end of its burrow for the distance of about three fourths inch and then eats a passageway out to the outer bark, which soon dies and shrinks over this point. It then surrounds itself with a silken cocoon within which it remains as a grub all winter. The change to a pupa takes place in the spring, and the adult insect emerges a few days later.
Symptoms: The pest eats, or girdles, the tips of new shoots, which eventually die and fall off.
Resistant Cultivars: None
Cultural Management: The girdling habit of the adult insect which causes the young shoot to wilt, die, and drop off in May makes it easy to determine whether the pest is present or not. Since the egg is embedded in the shoot less than an inch below where the girdling is done, and as the grubs rarely tunnel down more than six inches, if the injured shoots are cut off at least eight inches below the girdle and burned, the insect will be effectively controlled. if the work is performed in May or June soon after the girdling is done, only two or three inches of the tips need be cut off. The cutting and burning of about eight inches of the tips of the injured shoots at any time of the year, even in winter, will prove an effective remedy for this pest.
Chemical Control: None

3. Gooseberry Fruitworm

Biology: Gooseberries are subject to the attacks of a greenish caterpillar with a brownish head 3/4 inch in length when full-grown, which feeds within the fruit and causes it to color prematurely and either dry up or fall to the ground and decay. While ordinarily

not a serious pest, it has been known to destroy almost the entire crop in certain places.

The grayish moths have an expanse of nearly an inch; the forewings are crossed by darker lines, and there is a row of small blackish dots near the outer margin. The female deposits her eggs on the fruit. The young larva enters the partly grown berry and feeds on the pulp, casting out the excrement through the opening in the skin of the fruit by which it entered. It will sometimes enter several berries in succession, and often webs together several berries with a silken thread. When full-grown, it descends to the ground and transforms to a pupa within a brownish oval cocoon beneath dead leaves or other trash. The winter is passed as a pupa, and the moths emerge the next spring soon after the fruit has set.

The caterpillars are very active, and when alarmed will wriggle out of the berry and hang suspended by a silken thread only to return to the fruit when the danger is passed.

Symptoms: This pest causes premature coloring and separation of the fruit. The adult moth lays eggs on the fruit, and the larvae enter the developing berries and feed on the pulp. Several berries and portions of the stem may be tied together by silken webbing.
Resistant Cultivars: None
Cultural Management: Hand picking the infested berries provides some control.
Chemical Control: None. Use of malathion for other pests (i.e. Japanese beetles) will help control fruitworms.

4. **Imported Currant Worm**

Biology: The full-grown larva is 3 inches long; it is green with yellowish ends, has a black head, and is covered with black spots.
Symptoms: Shortly after the leaves are out in the spring the adults deposit eggs on the undersides of leaves along the major veins. A week to ten days later, tiny larvae emerge and begin eating holes in leaves. The worms feed in colonies and later singly, voraciously stripping the plants of foliage. A second brood occurs in early summer, and a partial third brood may appear depending on the weather.
Resistant Cultivars: None
Cultural Management: Removing leaves containing eggs can help to control pest.
Chemical Control: None

5. **San Jose Scale**

Biology: The mature female scale is about the size of a pinhead and circular in shape, with a nipple-like prominence in the center.
Symptoms: Infested plants are yellowish and unhealthy looking, and many of the canes eventually die. Seriously infested plants appear grayish, as if coated with ash.
Resistant Cultivars: None
Cultural Management: Infested canes are pruned out and destroyed before new growth begins in the spring.
Chemical Control: Dormant oil spray (4 gal in 10 gal water) applied before the buds swell and burst in the spring. Apply when dormant.

Insecticides on Gooseberries:

Insecticide ingredient	Amount of Product per Sprayed Acre Formulation	 lbs active
malathion (Malathion)	**5 EC (qt)**	
Apply for Japanese beetle, chafers, and mites. PHI: 3 days REI: 12 hours		
methoxychlor (Methoxychlor)	**50WP (2-3 lbs/A)**	**1-1.5 lbs**
PHI: 14 days REI: 12 hours		
pyrethrin (Pyrenone)	**0.5 EC (2-12 oz)**	**0.125-0.75 lbs**

Appendix 7b

Apply as leaf buds are opening for currant aphid.

PHI: 0 days
REI: 12 hours

IV. Pest Information: Diseases

1. Leaf Spot (Anthracnose)

Disease Cycle: The fungus overwinters in the inconspicuous cane lesions or infected fallen leaves. Spores produced from these sites are distributed the following spring by air currents and splashing rain, and infect young canes and leaves while they remain wet. Additional spores are produced from these new infection sites, and are distributed by splashing rains throughout the summer, spreading the disease. Only young, growing tissues are susceptible to infection.
Symptoms: Brown spots appear on leaves; at a later stage, leaves turn yellow.
Resistant Cultivars: None
Cultural Management: Destroy affected leaves and apply mulch after leaf drop.
Chemical Control: Copper hydroxide applied before bloom, after petal fall and after harvest. Sulfur 80WP (2 lb/A) applied just before bloom. Sulfur may cause injury in some cultivars.

2. Powdery Mildew

Disease Cycle: The black overwintering structures, called cleistothecia, form on canes and twigs. Ascospores are released around bloom. Conidia can be produced within 10 days and contribute to multiple infections during the growing season.
Symptoms: Initially, white powdery patches appear on the leaves and shoots in the early spring. As time passes, these patches turn rusty brown. Newly formed fruit also become infected, showing the same powdery growth. Infected berries become cracked and may shatter.
Resistant Cultivars: Susceptibility to this disease is highly variable, depending on the variety planted; European varieties are generally much more susceptible than American varieties.
Cultural Management: Prune and dispose of infected branch and shoot tips in early spring. Trellising to improve air circulation.
Chemical Control: Sprays are most necessary during humid or wet weather in the spring. JMS Stylet Oil (3-6 qt/100 gal water) or wettable sulfur 80WP (6-15 lb/A). Some gooseberry varieties are "sulfur shy" and will be damaged by these sprays, especially during warm weather.

Fungicides on Gooseberries:

Fungicide ingredient	Amount of Product per Sprayed Acre Formulation	 lbs active
copper hydroxide (Kocide)	**61 DF (10lb/A)** **2.4 L** **4.5 L** **77 WP (10 lb/A)** **Champ 4.6 F (6 2/3 pt/A)**	**3.51 lbs**
Apply copper hydroxide before bloom, after petal fall and after harvest for leaf spot control. PHI: REI: 48 hours		

mineral oil (JMS)	**Stylet oil (3-6 qt/100 gal water)**	**2.9-5.8 qts**
Apply when the first signs of powdery mildew are apparent and repeat as necessary. The oil kills the disease on contact, so high water volumes and thorough coverage of the leaves and developing fruit are essential for good control. PHI: 0 days REI: 4 hours		
sulfur (Thiolux)	**80WP (2-15 lb/A)**	**1.6-12 lbs**
Apply sulfur just before bloom for leaf spot control. Apply after fist signs of powdery mildew appear. Sulfur causes injury on some cultivars. PHI: REI: 24 hours		

IV. Pest Information: Diseases

A 4-inch layer of bark or sawdust mulch, or a combination of the two, greatly aids in weed control. Cultivation should be minimized because the root system is very shallow in currants and gooseberries. Grasses can be planted between rows to minimize weeds within the planting. Mulches and herbicides are generally applied in a 4 ft. band under the row.

Herbicides on Gooseberries:

Herbicide ingredient	Amount of Product per Sprayed Acre Formulation	 lbs active
oryzalin (Surflan)	**75 WSP (2.5-5.0 lb) A.S. (2-6 qt)**	**2-4 lbs**
Apply to both bearing and nonbearing plants before weed emergence. Rain or irrigation is needed within 21 days after application. PHI: REI: 12 hours		
glyphosate (Roundup)	**4L (1 qt)**	**1 - 4 lbs**
Preplant or wiper applications only. Do not contact foliage. PHI: 30 days REI: 12 hours		
pelargonic acid (Scythe)	**3-5% soln. for annuals 5-7% soln. for perennials**	**2.25 - 20 gal**

Appendix 7b	**7-10% for maximum burndown**
Apply before new canes emerge in spring or after canes become woody. Do not contact desirable foliage. PHI: REI: 24 hours	

VI. Pest Information: Vertebrates

Bird Control: Damage to fruit by birds is a serious problem in many areas of New York. Visual scare devices such as whirlers, streamers, reflectors, and plastic hawk and owl models are used in combination with sound devices such as exploders, alarms, or recorded devices. For sound devices to be effective, their location and the frequency of sounds arechanged daily. They also are in place before the fruit ripens. Some towns have passed ordinances regulating the use of sound devices. The most effective sound devices are those with species-specific bird distress calls programmed into the device.

Several types of netting, such as plastic, nylon, cotton, and polyethylene, are marketed for protecting fruits. A light-weight acrylic netting that can be draped directly over plants is available. It does not require support and it does not interfere with sunlight, pollination, or growth. Most netting is expensive, and can be reused for many years.

Methyl anthranilate formulations for bird repellency are labelled for use but have not proven to be effective.

Rodent Control: Various rodents can damage a small-fruit planting, especially as they feed under bark in the winter. Closely mowing the area around the planting and between the aisles in early November will reduce the habitat for voles and mice. The habitat (woodlots) of predators that feed on rodents (hawks, owls, foxes) should be protected around the area. A number of poisonous baits are labeled for use in agricultural areas. To be most effective, baits should be placed in feeding stations that exclude large animals and are replenished throughout the winter.

VII. State Contacts/Reviewers:

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Appendix 7b

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VIII. References

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ACCEPTED

NOV 25 2013

Under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, for the pesticide registered under EPA Reg. No. 80289-12

Badge® X_2

Dry Flowable Fungicide/Bactericide

Intended For Agricultural Use

ACTIVE INGREDIENTS:	
Copper Oxychloride (CAS No. 1332-40-7)*	23.82%
Copper Hydroxide (CAS No. 20427-59-2)*	21.49%
OTHER INGREDIENTS:	54.69%
TOTAL:	100.00%

*Metallic Copper (Cu) Equivalent is 28.2% by weight

KEEP OUT OF REACH OF CHILDREN

WARNING – AVISO

See Attached Label (back) for Additional Precautions

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label find someone to explain it to you in detail.)

FIRST AID	
IF SWALLOWED	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if unable to swallow. • Do not induce vomiting unless told to do so by a poison control center or doctor. • Do not give anything to an unconscious person.
IF IN EYES	• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. • Call a poison control center or doctor for treatment advice.
IF ON SKIN	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
IF INHALED	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Possible mucosal damage may contraindicate use of gastric lavage.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-222-1222 for emergency medical treatment information.

For Chemical Emergency Spill Leak Fire Exposure or Accident Call CHEMTREC Day or Night
Domestic North America 800-424-9300 International 703-527-3883 (collect calls accepted)

EPA Registration No.: 80289-12
EPA Establishment No.: 79558-ITA-1

Manufactured by Isagro SpA for:

ISAGRO USA

Isagro USA, Inc.
430 Davis Drive, Suite 240.
Morrisville, NC 27560

FOR ORGANIC PRODUCTION

OMRI Listed

NET CONTENTS: 10 pounds

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PRECAUTIONARY STATEMENTS

WARNING – AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label find someone to explain it to you in detail.)

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

May be fatal if swallowed. Causes substantial but temporary eye injury. Harmful if absorbed through skin. Harmful if inhaled. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Remove and wash contaminated clothing before reuse. Avoid contact with skin, eyes or clothing. Wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (such as Natural Rubber, Selection Category A). Avoid breathing dust.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

Mixers, loaders, applicators, and other handlers must wear the following:

- long-sleeved shirt and long pants
- shoes plus socks
- protective eyewear (goggles, safety glasses, or face shield)
- chemical-resistant gloves such as Natural Rubber

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them.

USER SAFETY RECOMMENDATIONS

Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. As soon as possible, wash thoroughly and change into clean clothing. Wash the outside of gloves before removing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish and aquatic invertebrates and may contaminate water through runoff.

This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers, adults, children or pets, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the State or Tribal agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for protection of agricultural workers on farms, forests, nurseries, and greenhouses and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard. Notify workers of the application by warning them orally.

GREENHOUSE USE; For at least seven days following the application of copper-containing products in greenhouses:

- At least one container or station designed specifically for flushing eyes is available in operating condition with the WPS-required decontamination supplies for workers entering the area treated with copper-containing products,
- Workers are informed orally, in a manner they can understand:
  - that residues in the treated area may be highly irritating to their eyes,
  - that they should take precautions, such as refraining from rubbing their eyes, to keep the residues out of their eyes,
  - that if they do get residues in their eyes, they should immediately flush their eyes with the eye flush container that is located with the decontamination supplies and
  - how to operate the eye flush container or eye flush station.

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **24** hours for greenhouse uses and **48** hours for all other applications without required PPE.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant gloves made of any waterproof material
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear if overhead exposure
- Protective eyewear (goggles, safety glasses, or face shield)

NONAGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are not within the scope of the Worker Protection Standard for agricultural pesticides 40 CFR part 170. The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Do not enter or allow others to enter until sprays have dried.

INSTRUCTIONS

BADGE X_2 may be applied as an aerial, ground dilute or ground concentrate spray unless specifically directed otherwise in the specific crop use directions.

The per acre use rate of BADGE X_2 is applicable for both dilute and concentrate spraying. Depending upon the equipment used and the specific crop, the spray volume applied per acre will differ. Refer to Minimum Recommended Spray Volume Table. Complete spray coverage is essential to assure optimum performance from BADGE X_2. When treating by aerial application or with low volume application equipment, unless you have had specific previous experience, it is advisable to test for compatibility and tolerance to crop injury prior to full scale commercial utilization.

Consult the BADGE X_2 label for specific rates and timing of application by crop. **Where application rates and intervals are provided in a range (e.g. 4 to 12 pounds and 7 to 10 days), the higher rates and shorter spray intervals are recommended when rainfall is heavy and/or disease pressure high. Use the higher rates for large mature tree crops.**

The pre harvest interval (PHI) for Badge X_2 is 0 days for all crops. Reentry into treated areas and harvest of treated crops can be performed when wearing required PPE during the 24 hour REI for greenhouse and 48 hour REI for field applications.

SPECIAL PRECAUTIONS

- BADGE X_2 **must not be applied** in a spray solution having a pH of less than 6.5 as phytotoxicity may occur.
- Do not tank mix BADGE X_2 with Aliette® fungicide for use on any registered crops or ornamentals unless appropriate precautions have been taken to buffer the spray solution because severe phytotoxicity may result. Use in accordance with the most restrictive of label limitations and precautions. Do not exceed label dosage rates. This product cannot be mixed with any product containing a label prohibition against such mixing.
- This product may be reactive on masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray on cars, houses, lawn furniture, or other metallic surfaces.
- Environmental conditions such as extended periods of wet weather, acid rain, etc. which alter the pH of the leaf surface may affect the performance of BADGE X_2 resulting in possible phytotoxicity or loss of effectiveness.
- Agricultural chemicals may perform in an unpredictable manner when tank mixed, especially where several products are involved. Reduced effect on pests or crop injury may occur. Unless recommended on this label or by a state/local expert, it is advisable to test for compatibility and potential crop injury prior to commercial use of a new tank mix; otherwise tank mixing should not be undertaken.
- It must be determined if proper application equipment is available and if waste associated with its use can be properly handled. Agricultural chemicals are often reactive with the materials used in the construction of application equipment such as aluminum, rubber and some synthetic materials. This factor should be taken into consideration when selecting proper application equipment. It is necessary that all application equipment be thoroughly flushed with clean water after each day's use.
- Do not apply this product through any irrigation (chemigation) system using aluminum parts or components as damage to the system may occur. Such application is prohibited regardless of whether the irrigation system is flushed with water after use of this product.
- Apply this product only through one or more of the following types of systems: sprinkler, including center pivot, lateral move, traveler, big gun, or plastic pipe solid set system(s) which contain no aluminum parts or components. Do not apply this product through any other type of irrigation system.
- While volume is important in obtaining full spray coverage, often factors such as foliage density, environmental conditions and sprayer calibration have a greater impact. Always be sure that sprayers are calibrated to spray equipment manufacturer's specifications and environmental conditions are within those recommended by State and local regulatory authorities.
- When mixing, fill the spray tank one-half full with water. Add BADGE X_2 slowly to tank while hydraulic or mechanical agitation is operating and continue filling with water. **DO NOT PREMIX or SLURRY** BADGE X_2. Spreaders, stickers, insecticides, nutrients, etc. should be added last. If compatibility is in question, use the Compatibility Jar Test before mixing a whole tank or contact your chemical supplier. Observe all precautions and limitations on the labels of all products used in mixtures.

FROST INJURY PROTECTION (Bacterial Ice Nucleation Inhibitor)

Application of BADGE X_2 made to all crops listed on this label at the rates and stages of growth indicated, at least 24 hours prior to anticipated frost conditions, will afford control of ice nucleating bacteria (*Pseudomonas syringae, Erwinia herbicola and Pseudomonas fluorescens*) and may therefore provide some protection against light frost. Not recommended for those geographical areas where weather conditions favor severe frost.

CROP USES

CITRUS: Grapefruit, Kumquat, Lemon, Lime, Orange, Pummelo, Tangelo and Tangerine.

FIELD CROPS: Alfalfa, Barley, Clover*, Corn*, Oats, Peanut, Potato, Soybean, Sugar Beet, Sugarcane* and Wheat.

SMALL FRUITS: Blackberry, Blueberry*, Cranberry, Currant, Gooseberry, Raspberry and Strawberry.

TREE CROPS: Almond, Apple, Apricot, Avocado, Banana, Cacao, Cherimoya*, Cherry, Chestnut*, Coffee, Filbert, Mango*, Nectarine, Nutmeg*, Olive, Peach, Pear, Pecan, Pistachio, Plantain*, Plum, Prune, Quince* and Walnut.

VEGETABLES: Artichoke*, Asparagus*, Bean, Beet, Beet Greens, Broccoli, Brussels Sprout, Cabbage, Cantaloupe, Carrot, Cauliflower, Celeriac*, Celery, Chard, Cucumber, Eggplant, Endive*, Escarole*, Garlic*, Greens (Collard, Mustard and Turnip), Honeydew, Kale*, Kohlrabi*, Leek*, Lettuce, Muskmelon, Okra*, Onion, Pea, Pepper, Pumpkin, Radish*, Rhubarb*, Rutabaga*, Shallot*, Spinach, Squash, Tomato, Turnip*, Watercress* and Watermelon.

VINES: Grape, Hops and Kiwi.

MISCELLANEOUS: Atemoya*, Carambola*, Chives*, Cilantro*, Coriander*, Dill*, Ginseng, Guava, Litchi*, Live Oak*, Macadamia, Mamey Sapote*, Mint*, Papaya*, Parsley*, Passion Fruit*, Persimmon*, Rosemary*, Sugar Apple* and Sycamore, and Turfgrass*.

GREENHOUSE AND SHADEHOUSE CROPS: BADGE X_2 may be used in greenhouses and shadehouses to control diseases on any

crop on this label where physiology allows greenhouse or shadehouse culture. While specific directions are presented for Citrus, Cucumber, Eggplant, Pepper, and Tomato; general use may occur for any crop on this label where physiology allows greenhouse or shadehouse culture.

ORNAMENTALS: Specified as listed.

*Except California

MINIMUM RECOMMENDED SPRAY VOLUME (GALLONS PER ACRE) WHEN APPLYING BADGE X_2			
USE	AERIAL	DILUTE	CONCENTRATE*
Vegetables	3	20	–
Field Crops	3	20	–
Small Fruits	5	150	50
Vines	5	150	50*
Tree Crops	10	400	50
Miscellaneous crops	10	150	50
Citrus	10	800	100*
Ornamentals	10	100	50

*When using pesticide application equipment such as Curtec® or other similar sprayers which are capable of obtaining thorough coverage at low volumes, application rates as low as 20 gallons per acre of spray volume may be used.

CROP USE DIRECTIONS

The following specific instructions are based on general application procedures. The recommendations of your local State Agricultural Extension Service should be closely followed as to timing, frequency and number of sprays per season.

CITRUS

BADGE X_2 may be mixed with dry foliar nutritionals (micronutrients) to create "Shot Bag" mixes to meet the various nutritional requirements of citrus and provide disease protection as described on this label. BADGE X_2 per acre rates in these mixes must not exceed the maximum recommended label rates for disease control. Adding foliar nutritionals or other products to spray mixtures containing BADGE X_2 and applying to citrus during the post-bloom period when young fruit are present may result in spray burn.

DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MIN. RETREATMENT INTERVAL (DAYS)	COMMENTS
Algal Spot, Melanose, Scab	1.75 – 11	45	12.6[1]	7	Apply as pre-bloom and post-bloom sprays. Use the higher rates when conditions favor disease development.
Greasy Spot, Pink Pitting	0.75 – 5	45	12.6[1]	7	Apply in summer on expanded new flush. Repeat on subsequent flushes where disease pressure is severe. Use the higher rates when conditions favor disease development.
Alternaria Brown Spot	1.75 – 7	45	12.6[1]	21	On susceptible varieties apply when the first spring flush appears and each flush thereafter. Application to fruit should start after two thirds of the petals have fallen and be repeated on a 21 day schedule. Use the higher rates when conditions favor disease development.
Phytophthora Brown Rot, Septoria Spot	1.75 – 7	45	12.6[1]	7	Begin application in fall before or just after the first rain and continue as needed. For brown rot only, apply to skirts of trees to a height of at least 4 feet. For control of septoria spot or where fruit have already been infected with brown rot, apply to entire tree. Apply also to bare ground 1 foot beyond skirt. Use the higher rates when conditions favor disease development. NOTE: In California, in areas subject to copper injury, add 1/3 to 1 pound of high quality lime per pound of BADGE X_2.

DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MIN. RETREATMENT INTERVAL (DAYS)	COMMENTS
Phytophthora Foot Rot	0.5	45	12.6[1]	7	Mix with 1 quart of water, Tre-Hold® or latex paint. Paint trunks of trees from the soil surface to the lowest scaffold limbs. Apply in May prior to summer rains and/or in the fall prior to wrapping trees for freeze protection. Treatment serves as protection for up to 1 year, but does not cure existing infections. NOTE: Areas where microjet or low volume irrigation hit the tree trunk may require retreatment due to wash off.
Citrus Canker (Suppression)	1 – 11	45	12.6[1]	7	Spray flushes 7 to 14 days after shoots begin to grow. Young fruit may require an additional application. Number and timing of applications will be dependent upon disease pressure. Under heavy pressure, each flush of new growth should be sprayed.
Black spot*	1 – 3	45	12.6[1]	7	Initiate treatment prior to or at the first appearance of disease and repeat on a 7 to 21 day interval as needed. Use higher rates and short application intervals when conditions favor disease development.

NOTE: Phytotoxicity may occur on young tender flush when BADGE X_2 is applied to citrus seedlings grown in greenhouses or shadehouses.

[1]maximum annual amount allowed for all disease applications combined
* Except California

CITRUS (FIELD NURSERY GROWN)

To control Melanose, Scab, Pink Pitting, Greasy Spot and Brown Rot and for suppression of Citrus Canker, apply 1.75 to 3.5 pounds of product per acre. Apply BADGE X_2 at 28 day intervals depending on disease severity and rainfall. The maximum single application rate is 3.15 pounds of Cu per acre. The maximum annual application rate is 12.6 pounds of Cu per acre. The minimum retreatment interval is 7 days.

FIELD CROPS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/Year (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Alfalfa	Cercospora Leaf Spot, Leptosphaerulina Leaf Spot	0.75 – 1.5	4.0	1.12	30	Apply 10 to 14 days before each harvest or earlier if disease threatens. **NOTE:** Spray injury may occur with sensitive varieties such as Lahontan.
Cereal Grains (Barley, Millet, Oat, Rye, Sorghum, Wheat)	Fusarium Head Blight Suppression, Helminthosporium, Powdery Mildew suppression, Septoria Leaf Blotch, Spot Blotch, Stagonospora Leaf and Glume Blotch, Stem Rust	0.5 – 1.8	3.8	1.06	10	BADGE X_2 can be applied as a foliar application for early season disease control and again at early heading then followed with another application 10 days later. Use the higher rates when conditions favor disease development.
Clover*	Anthracnose, Bacterial Blight, Bacterial Leaf Spot, Cercospora Leaf Spot, Powdery Mildew	0.5 – 1.8	16.9	4.74	7	Begin applications when conditions first favor disease development and repeat at 7 to 14 day intervals. Use the higher rates when conditions favor disease development.

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FIELD CROPS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/Year (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Corn* (Field Corn, Popcorn, Seed, Sweet Corn)	Bacterial Stalk Rot	0.5 – 2.5	15.0	4.2	7	Begin treatment when disease first appears and repeat every 7 to10 days. Use the higher rates and shorter spray intervals when conditions favor disease development.
Peanut	Leaf Spot, Rust	1 – 2.5	16.9	4.74	7	Begin spraying at 35 to 40 days after planting or when disease symptoms first appear and repeat at 10 to 14 day intervals. Reduce sprays to 7 day intervals during humid weather. Use the higher rates when conditions favor disease development.
Potato	Early Blight, Late Blight, Powdery Mildew	1 - 4	89.3	25	5	Apply 0.5 to 1.75 pounds at 7 to 10 day intervals starting when plants are 2 to 6 inches high in locations where disease is light. Apply up to 1.75 pounds per acre when disease is more severe. Under conditions of severe disease, control with BADGE X_2 will be improved by tank mixing with other compatible fungicides registered for use on potatoes. Read and follow all label instructions of tank mix partners. Use the higher rates when conditions favor disease development.
Soybean	Bacterial Blight, Downy mildew, Powdery Mildew	0.75 – 2.5	16.9	4.74	7	For preventive applications, begin first application when plant height reaches 6 inches and repeat on a 7 to 14 day interval as needed. Use higher rates when conditions favor high disease pressure.
Sugar Beet	Cercospora Leaf Spot, Powdery mildew	1 – 4	28.1	7.86	10	Begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals. Use the higher rates when conditions favor disease development. Addition of a spreader/sticker is recommended.

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FIELD CROPS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/Year (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Sugarcane*	Rusts (brown and orange)	1.75	3.8	1.06	10	Recommended for tank mixture with other products registered for rust control. For suppression of rust, begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals. Use the higher rates when conditions favor disease development. Addition of a spreader/sticker is recommended.

*Except California

SMALL FRUITS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Brambles - Blackberry Raspberry (Aurora, Boysen, Cascade, Chehalem, Logan, Marion, Santiam, Thornless Evergreen)	Anthracnose, Cane Spot, Leaf Spot, Pseudomonas Blight, Purple Blotch, Yellow Rust	1.75 – 3.5	35.7	10[1]	7	Make fall application after harvest. Apply delayed dormant spray after pruning/training in the spring. If needed, agricultural-type spray oil may be added.
	Anthracnose, Cane Spot, Leaf Spot, Purple Blotch, Yellow Rust	1 – 2.25	35.7	10[1]	7	Apply when leaf buds begin to open and repeat when flower buds show white. If needed, agricultural-type spray oil may be added. **NOTE:** Crop injury may occur if applied to foliage under certain environmental conditions such as hot or prolonged moist periods. Discontinue application if signs of crop injury appear.
Blueberry*	Bacterial Canker	1.5 – 7	30.0	8.4[1]	28	Make first application before rain falls and a second application 4 weeks later. Use the higher rates when conditions favor disease development.
	Fruit Rot, Phomopsis Twig Blight	1 – 4	30.0	8.4[1]	7	Dormant Application: Begin applications when bloom buds begin to swell. Make additional applications at 10 to 14 day intervals before blooms open. Use the higher rates when conditions favor disease development
Cranberry	Fruit Rot	3.5 – 7	45.0	12.6[1]	7	Make first application in late bloom. Apply one or two additional applications at 10 to 14 day intervals depending on disease severity.

SMALL FRUITS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
	Rose Bloom	3.5 – 7	45.0	12.6[1]	7	Apply three sprays on 10 to 14 day schedule as soon as symptoms are observed.
	Bacterial Stem Canker	3.5 – 7	45.0	12.6[1]	7	Apply postharvest and again in spring at bud swell. Apply one or two additional applications at 10 to 14 day intervals depending on disease severity.
	Leaf Blight, Red Leaf Spot, Stem Blight, Tip Blight *(Monilinia)*	3.5 – 7	45.0	12.6[1]	7	Apply delayed dormant spray in the spring. Repeat at 10 to 14 day intervals through pre-bloom.
Currant, Gooseberry	Anthracnose, Leaf Spot	4.25 – 9	57.1	16	10	Make initial application after first leaves have expanded. Continue on a 10 to 14 day schedule during wet conditions in the spring. Make an additional application after harvest.
Strawberry	Angular Leaf Spot, *(Xanthomonas)*, Leaf Blight, Leaf Scorch, Leaf Spot, Downy mildew	1 – 2.5	29.2	8.19	7	Begin application when plants are established and continue on a weekly schedule throughout the season. Apply in at least 20 gallons of water. Use the higher rates when conditions favor disease development. **NOTE:** Discontinue applications if signs of crop injury appear.

[1]maximum annual amount allowed for all disease applications combined
* Except California

TREE FRUIT

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Apple	Anthracnose, Blossom Blast, European Canker *(Nectria)*, Shoot Blast *(Pseudomonas)*	5 – 14	57.1	16[1]	n/a	Apply before fall rains. Use the higher rate when conditions favor disease development. Only 1 application per season is permitted. **NOTE:** Use on yellow varieties may cause discoloration. To avoid discoloration, pick before spraying.

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TREE FRUIT

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
	Apple Scab, Fire Blight	3.5 – 7	57.1	16[1]	n/a	Make application between silver-tip and green-tip. Apply as a full-cover spray for early season disease suppression. Only 1 application per season is permitted. **NOTE:** Moderate to severe crop injury may occur from late application..
	Apple Scab	0.75 – 1.75	57.1	16[1]	5	Extended spray schedule where fruit finish is not a concern: Continued application may be made at 5 to 7 day intervals between ½ inch green-tip and first cover spray. **NOTE:** Moderate to severe crop injury may result from this extended spray schedule. It is not intended for fresh market apples or fresh apples where fruit finish is a concern as it is likely to cause fruit russetting. The addition of 1 to 3 pounds of hydrated lime per pound of BADGE X_2 may reduce crop injury.
	Fire Blight	0.5 – 1.5	57.1	16[1]	5	
	Bitter Rot, Black Spot, Blotch, Powdery mildew	1 – 2.8	57.1	16[1]	5	
Apple	Brooks spot	2	57.1	16[1]	5	Apply Badge X_2 plus 2 lbs hydrated lime per 100 gallons water. Make applications during late cover sprays.
	Bullseye rot	7.5	57.1	16[1]	n/a	Use Badge X_2 plus plus sprayable oil per 100 gallons water. Make application after harvest. Only one application per season.
	Collar Rot, Crown Rot	1 – 2.5	57.1	16[1]	5	Mix in 100 gallons of water. Apply 4 gallons of suspension as a drench on the lower trunk area of each tree. Apply in early spring or in fall after harvest for best results. Do not apply to foliage or fruit. **NOTE:** Do not use if soil pH is below 5.5 since copper toxicity may result.
	Sooty blotch	1 – 2.5	57.1	16[1]	5	Use Badge X_2 plus 2½ lbs hydrated lime per 100 gallons water. Apply during late cover sprays. When conditions indicate the potential for increased copper injury, add additional lime.

TREE FRUIT

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Cherry, Plum, Prune	Bacterial Blast (Pseudomonas), Bacterial Canker, Coryneum Blight (Shot Hole)	3.5 – 14	64.3	18[1]	7	Fall Applications: Make first application before fall rains and a second at late dormant (up to the pink bud stage). Use the higher rates when conditions favor disease development. If needed, agricultural- type spray oil may be added. For cherries: Where disease is severe, an additional application shortly after harvest may be required. Use the higher rates when conditions favor disease development.
	Blossom Brown Rot, Coryneum Blight (Shot Hole)	3.5 – 5	64.3	18[1]	5	Apply during early bloom. Do not apply after full bloom or injury may occur. Use the higher rates when rainfall is heavy and disease pressure is high.
	Black Knot (Plum)	1.5 – 5	64.3	18[1]	5	Make an application at bud swell up to early bloom for early season disease suppression. Apply before full bloom. Use the higher rates when rainfall is heavy and disease pressure is high. NOTE: To avoid plant injury, do not use after full bloom. Use the higher rates when conditions favor disease development.
Cherry	Cherry Leaf Spot (Sour Cherries Only)	1 – 5	64.3	18[1]	5	Cover Sprays: Apply at petal fall as well as one to two times after petal fall. Use the lower rates where disease infection is light and use the higher rates for a dormant application (up to the pink bud stage) or where disease infection is moderate to heavy. Do not apply to sweet cherry or the English Morello variety as severe injury will result. The addition of 1 to 3 pounds of hydrated lime per pound of BADGE X2 may reduce crop injury. NOTE: Moderate to severe injury such as leaf spotting and defoliation may occur from post-bloom applications.

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TREE FRUIT

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Apricot, Peach, Nectarine	Bacterial Blast (Pseudomonas), Bacterial Canker, Bacterial Spot, (Xanthomonas), Coryneum Blight (Shot Hole), Leaf Curl	3.5 – 14	64.3	18[1]	7	Fall Applications: Make first application before fall rains and a second at late dormant. For peach leaf curl, late dormant application must be made before leaf buds swell (up to the pink bud stage). Use the higher rates when rainfall is heavy and disease pressure is high. If needed, agricultural-type spray oil may be added.
	Blossom Brown Rot, Coryneum Blight (Shot Hole), Leaf Curl	3.5 – 5	64.3	18[1]	5	Full cover spray at pink bud. Use the higher rates when conditions favor disease development
	Bacterial Spot	0.5 – 2	64.3	18[1]	5	Post-bloom application applied at first and second cover sprays. NOTE: Do not spray 3 weeks prior to harvest. Use only listed rates. Spotting of leaves and defoliation may occur from use in cover sprays.
Atemoya, Sugar Apple (Annona)*	Anthracnose	1.5 – 8	45.0	12.6	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease.
Avocado	Anthracnose, Blotch, Scab	3.5 – 11	67.5	18.9	14	Apply when bloom buds begin to swell and continue application at monthly intervals for five to six applications. Use the higher rates when conditions favor disease development.
Banana, Plantain*	Sigatoka (Black and Yellow)	0.75 - 2	67.5	18.9[1]	7	Apply by air in 3 gallons of water. If needed, agricultural-type spray oil may be added. Apply on a 14 day schedule throughout the wet season. Apply at 21 day intervals during dry periods.
	Black Pitting	1.75 – 3.5	67.5	18.9[1]	7	Mix in 100 gallons of water. Apply to the fruit stem and the basal portion of the leaf crown. Apply during the first and second weeks after fruit emergence.

TREE FRUIT

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Carambola*	Anthracnose	2.5 – 7	37.5	10.5	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease.
Cherimoya (custard apple)*	Anthracnose	1 – 4	30	8.4	14	Begin applications when conditions first favor disease development and repeat using a 14-day interval. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease. Make first application to a small area to test for crop sensitivity. The addition of 1 to 3 pounds of hydrated lime per 2 pints of BADGE X_2 may reduce crop injury.
Guava	Anthracnose, Red Algae	1.25 – 4	17.6	4.92	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease pressure.
Mamey Sapote*	Algal Leaf Spot, Anthracnose	2.5 – 7	30.0	8.4	14	Apply when conditions favor disease development. Repeat on 14 to 30 day schedule as disease severity and environmental conditions dictate. Use the higher rates when conditions favor disease development.
Mango*	Anthracnose	2 – 9	171	48	7	Apply monthly after fruit set until harvest. Use the higher rates when rainfall is heavy and disease pressure is high.
Olive	Anthracnose, Olive Knot, Olive Leaf Spot, Peacock Spot	3.5 – 11	64.3	18	30	Make first application before winter rains begin. A second application in early spring should be made if disease is severe. Apply the higher rates for heavy disease pressure or when conditions favor disease development.
Papaya*	Anthracnose	2 – 9	75.7	21.2	7	Apply before disease appears. Apply at 14 day intervals. The addition of an approved spreader is desirable. Use the higher rates when conditions favor disease development.

TREE FRUIT

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Pear	Fire Blight	0.5 – 1	57.1	16[1]	5	Apply at 5 day intervals throughout the bloom period. NOTE: Russetting may occur in copper sensitive varieties. Excessive dosages may cause fruit russet on any variety.
	Blossom Blast *(Pseudomonas)*	5.25 – 14	57.1	16[1]	n/a	Apply before fall rains and again during dormancy before spring growth starts. Use the higher rates when disease pressure is high or when conditions favor disease development. Only 1 application per season is permitted.
Persimmon*	Cercospora Leaf Spot	0.75 – 1.5	21.4	6.0	14	Begin applications in May/June at leaf flush and repeat applications on a 14 day interval or greater depending on disease severity and environmental conditions.
Quince*	Fire Blight, Blossom Blast	0.5 – 1	57.1	16	5	Apply at 5 day intervals throughout the bloom period. Apply in adequate water for thorough coverage.

[1]maximum annual amount allowed for all disease applications combined
* Except California

TREE NUTS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Almond	Bacterial Blast (Pseudomonas), Bacterial Canker, Coryneum Blight (Shot Hole)	3.5 – 14	64.3	18[1]	7	Fall Applications: Make first application before fall rains and a second at late dormant. Use the higher rates when conditions favor disease development. If needed, agricultural-type spray oil may be added.
	Blossom Brown Rot, Coryneum Blight (Shot Hole)	2.5 – 3.5	64.3	18[1]	5	Apply during early bloom. Do not apply after full bloom or injury may occur. Use the higher rates when rainfall is heavy and disease pressure is high.
	Bacterial Blast *(Pseudomonas)*	0.5	64.3	18[1]	5	Post Bloom: To control bacterial blast in sprinkler irrigated orchards or when disease is severe, apply 0.5 lbs Badge X_2 post-bloom at 2 week intervals or just prior to sprinkler irrigation. **NOTE:** Foliar injury may occur from post-bloom sprays on almonds, especially on NePlus varieties.
Cacao	Black Pod	1 – 7.5	56.2	15.75	14	Begin applications at the start of the rainy season and continue while infection conditions persist. Apply 0.75 to 2 pounds at 14 to 21 day intervals depending on disease severity. For drier areas, make two to four applications using 2.5 to 3.75 pounds per acre according to disease incidence and planting density. Use the higher rates when conditions favor disease development.
Chestnut*	Leaf Spot	1 – 4	30	8.4	14	Begin applications when conditions first favor disease development. Make applications to protect shoot growth throughout the season. Use the lower rates where disease infection is light and use the higher rates for a dormant application or where disease infection is moderate to heavy.
Coffee	Coffee Berry Disease *(Colletotrichum coffeanum)*	2.5 – 7	45.0	12.6[1]	14	Apply first spray after flowering and before onset of long rains and then at 21 to 28 day intervals until picking. Use the higher rates when conditions favor disease development.

TREE NUTS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
	Bacterial Blight *(Pseudomonas syringae)*	2.5 – 7	45.0	12.6[1]	14	Begin spray program before the onset of long rainy periods and continue throughout the rainy season at 14 to 21 day intervals. The critical time of spraying to control this disease is just before, during and after flowering(s) especially when coinciding with wet weather. Use the higher rates when rainfall is heavy and disease pressure is high.
	Leaf Rust *(Hemileia vastatrix)*	1 – 3	45.0	12.6[1]	14	Apply before the onset of rain and then at 21 day intervals while the rains continue. Use the higher rates when rainfall is heavy and disease pressure is high.
	Iron Spot *(Cercospora coffeicola)*, Pink Disease *(Corticium salmonicolor)*	0.75 – 1.5	8.6	12.6[1]	28	Use concentrate or dilute spray. Begin treatment at the start of wet season and continue at monthly intervals for three applications.
Filbert	Bacterial Blight	7 – 12	85.7	24[1]	14	Apply as a postharvest spray. In seasons of heavy rainfall apply a second spray when three-fourths of the leaves have dropped. Use the higher rates when rainfall is heavy and disease pressure is high. If needed, agricultural-type spray oil may be added. Use only in the states of Oregon and Washington.
Filbert	Eastern Filbert Blight	7 – 12	85.7	24[1]	14	Apply as a dilute spray in adequate water for thorough coverage. Make applications starting at bud swell to bud break and continue at 2 week intervals until early May. Thorough coverage is essential. Use the higher rates when rainfall is heavy and disease pressure is high. If needed, agricultural-type spray oil may be added. Use only in the states of Oregon and Washington.
Litchi*	Anthracnose	1.25 – 4	17.6	4.92	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease pressure.

TREE NUTS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Macadamia	Anthracnose	2.5 – 8	33.7	9.44[1]	7	Initiate sprays at first sign of flowering and repeat on weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates for severe disease pressure.
	Phytophthora Blight *(P. capsici)*, Raceme Blight *(Botrytis cinerea)*	1.25 – 5	33.7	9.44[1]	7	Apply during raceme development and bloom periods. Apply in sufficient water for thorough coverage. Use the higher rates when conditions favor disease development.
Nutmeg*	Leaf Spot, Shot Hole	1 – 4	30	8.4	14	Begin applications when conditions first favor disease development. Make applications to protect leaves during the rainy season. Use the lower rates where disease infection is light and use the higher rates where disease infection is moderate to heavy. Make first application to a small area to test for crop sensitivity. The addition of 1 to 3 pounds of hydrated lime per 2 pints of BADGE X_2 may reduce crop injury.
Pecan	Kernel Rot, Shuck Rot (*Phytophthora cactorum*), Zonate Leaf Spot *(Cristulariella pyramidalis*	1 - 4	30.0	8.4[1]	14	For suppression, apply in sufficient water to ensure complete spray coverage at 2 to 4 week intervals starting at kernel growth and continue until shucks open. Use the higher rates and shorter spray intervals if frequent rainfall occurs.
	Ball Moss* Spanish Moss*	2.5 – 7	30.0	8.4[1]	365	Apply in 100 gallons of water in the spring when ball moss is actively growing, using 1 ½ gallons of spray per foot of tree height. Make sure to wet ball moss tufts thoroughly. The addition of a nonionic surfactant will improve control. A second application may be required after 12 months.
Pistachio	Botryosphaeria Panicle and Shoot Blight, Botrytis Blight, Late Blight (Alternaria alternata), Septoria Leaf Blight	1.75 – 7	30.0	8.4	14	Make initial application at bud swell and repeat on a 14 to 28 day schedule. If disease conditions are severe, use the higher rates and shorter spray intervals.

TREE NUTS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Walnut	Walnut Blight	3.5 – 11	114.3	32	7	Apply first spray at early pre-bloom prior to or when catkins are partially expanded. Make additional applications during bloom and early nutlet stage when frequent rainfall or extended periods of moisture occur. Thorough coverage of catkins, leaves and nutlets is essential for effective control. Use the higher rates when conditions favor disease development. NOTE: Adequate control may not be obtained when copper tolerant species of Xanthomonas bacteria are present.

[1]maximum annual amount allowed for all disease applications combined
* Except California

VEGETABLES

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Artichoke*	Ramularia Leaf Spot, Powdery mildew	0.5 – 1.75	9.5	2.65	7	Recommended for tank mixture with other products registered for control of listed diseases. For suppression, begin applications when conditions first favor disease development and repeat using a 7-day interval. Use the higher rates when conditions favor disease development. Addition of a spreader/sticker is recommended.
Asparagus*	Rust	1 – 2.5	17.6	5	10	Recommended for tank mixture with other products registered for control of rust. For suppression, begin applications when conditions first favor disease development and repeat using a 10-day interval. Use the higher rates when conditions favor disease development. Addition of a spreader/sticker is recommended.
Bean (Dry, Green)	Anthracnose, Bacterial Blight, Brown Spot, Common Blight, CercosperaLeaf Spot*, Downy Mildew, Halo Blight	0.5 – 2	16.9	4.74	7	For protective sprays, make first application when plants are 6 inches high; repeat on a 7 to 14 day schedule depending on environmental conditions. Use the higher rates for more severe disease pressure.
Beet (Table Beet, Beet Greens)	Cercospora Leaf Spot, Downy Mildew	0.75 – 4	28.1	7.86	10	Begin applications when conditions first favor disease development and repeat at 10 to 14 day intervals. Use the higher rates when conditions favor disease development.
Carrot	Alternaria Leaf Spot, Cercospora Leaf Spot, Downy Mildew	0.75 – 3.57	17.9	5	7	Begin applications when disease first threatens and repeat at 7 to 14 day intervals depending on disease severity. Use the higher rates when conditions favor disease development.
Celery, Celeriac*	Bacterial Blight, Cercospora Early Blight, Downy Mildew, Septoria Late Blight	0.75 – 3.57	18.9	5.3	7	Begin applications as soon as plants are first established in the field, repeating at 7 day intervals depending on disease severity and environmental conditions.
Chard*	Cercospora Leaf Spot, Ramularia Leaf Spot	0.5 – 2.5	14.1	3.95	7	Begin applications when conditions first favor disease development and repeat at 7 to 14 day intervals. Use the higher rates when conditions favor disease development.

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VEGETABLES

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Crucifers (broccoli, brussels sprout, cabbage, cauliflower, Chinese cabbage, collard greens, kale, kohlrabi mustard greens, turnip greens)	Black Leaf Spot (*Alternaria*), Black Rot (*Xanthomonas*), Downy Mildew	0.5 – 1.8	9.5	2.65	7	Apply at 7 to 10 day intervals. Begin application after transplants are set in the field or shortly after emergence of field seeded crops or when conditions favor disease development. Use the higher rates when conditions favor disease development. The addition of a spreader/sticker may enhance retention of spray deposition on cruciferous crops. NOTE: Reddening of older leaves may occur on broccoli and a flecking of wrapper leaves may occur on cabbage.
Cucurbits (cantaloupe, casaba, chayote, citron melon, cucumber, gourd honeydew, muskmelon, pumpkin, squash (summer and winter), watermelon)	Alternaria Leaf Spot, Angular Leaf Spot, Anthracnose, Downy Mildew, Gummy Stem Blight, Powdery Mildew, Watermelon Bacterial Fruit Blotch (Suppression)	0.5 – 2.5	18.8	5.25	5	Begin applications prior to disease development and continue while conditions are favorable for disease development. Repeat sprays at 5 to 7 day intervals. Use the higher rates when conditions favor disease development. NOTE: Crop injury may occur from application at higher rates and shorter intervals. Discontinue use if injury occurs.
Eggplant	Alternaria Blight, Anthracnose, Downy Mildew, Phomopsis, Phytopthora*	0.75 – 1.5	28.2	7.9	7	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals depending on disease severity.
Lettuce (Head and Leaf), Endive*, Escarole*	Anthracnose, Downy Mildew, Leaf Spot, Powdery Mildew	0.75 – 1.5	28.6	8.0	5	Begin treatment at the first sign of disease. Repeat on a 7-10 day interval to suppress disease. Slight injury may occur under adverse conditions.
Okra*	Anthracnose, Bacterial Leaf Spot, Leaf Spots, Pod Spot, Powdery Mildew	0.75 – 1.75	18.8	5.25	5	Begin treatment when conditions are favorable for disease development and repeat using a 5 to 10 day interval as needed. User higher rates and shorter intervals when conditions favor disease.
Onion, Garlic, Leek, Shallot*	Alternaria, Bacterial Blight, Downy Mildew, Purple Blotch, Rust	0.75 – 1.5	21.4	6	7	Begin when plants are 4 to 6 inches high and repeat at 7 to 10 day intervals depending on disease severity. Can cause phytotoxicity to leaves.
Pea	Powdery Mildew	0.5 – 2.5	14.1	3.95	7	Begin applications when disease symptoms first appear and repeat at weekly intervals. Use the higher rates when conditions favor disease development.

VEGETABLES

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Pepper (bell, chili)	Alternaria, Anthracnose, Bacterial Spot, Cercospora Leaf Spot, Downy Mildew, Early and Late Blight, Phytopthora blight*	0.75 – 2.25	42.3	11.85	3	Begin applications when conditions first favor disease development and repeat at 7 to 10 day intervals depending on disease severity. Use the higher rates when conditions favor disease development.
Radish, Rutabaga, Turnip*	Alternaria, Anthracnose, Bacterial Leaf Spot, Black Rot, Cercospora Leaf Spot, Downy Mildew, White Rust	1 – 2.25	28.1	7.86	10	Begin application when disease first appears or when conditions favor disease development. Repeat using a 10 day interval. Use the higher rates when conditions favor disease development.
Rhubarb*	Leaf Spot	1 – 2.25	13.9	3.95	7	Begin application when disease first appears or when conditions favor disease development. Repeat at 7 to 10 day intervals. Use the higher rates when conditions favor disease development.
Spinach	Anthracnose, Blue Mold, Cercospora Leaf Spot, Downy Mildew, White Rust	0.75 – 1.25	14.1	3.95	7	Begin application when disease first appears or when conditions favor disease development. Repeat at 7 to 10 day intervals. Use the higher rates when conditions favor disease development. NOTE: Flecking may occur on spinach leaves.
Tomato						
Processing	Anthracnose, Bacterial Canker, Bacterial Speck, Bacterial Spot, Early Blight, Gray Leaf Mold, Late Blight, Septoria Leaf Spot	0.75 – 1.8	62.1	17.4	3	Begin application when disease first threatens and repeat at 5 to 10 day intervals depending on disease severity. Use the higher rates when conditions favor disease development
Fresh market		0.75 – 1.8	28.6	8.0	3	
Watercress*	Cercospora Leaf Spot	0.75 – 1.8	7.6	2.12	7	Begin applications when plants are first established in the field, repeating at 7 to 14 day intervals depending on disease severity. Do not exceed four applications per crop. Apply using ground spray equipment at no less than 50 gallons of spray solution per acre.

* Except California

VINES

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Grape	Black Rot, Downy Mildew, Phomopsis, Powdery Mildew	0.75 – 3.5	71.4	20	3	Begin applications at bud break with subsequent applications throughout the season depending on disease severity. Use the higher rates when conditions favor disease development. **NOTE:** Foliage injury may occur on copper sensitive varieties such as Concord, Delaware, Niagara and Rosette. Either test for sensitivity or add 1 to 3 pounds of hydrated lime per pound of BADGE X_2.
Hops	Downy Mildew	0.75 – 1.8	9.5	2.65	10	Make crown treatment after pruning, but before training. After training, additional treatments are needed at about 10-day intervals. **NOTE:** Discontinue use 2 weeks before harvest.
Kiwi	*Erwinia herbicola, Pseudomonas fluorescens, Pseudomonas syringae*	2 – 7	22.5	6.3	30	Apply in 200 gallons of water per acre. Make applications on a monthly basis. A maximum of three applications may be made.
Passion Fruit*	Anthracnose	2 – 8	33.7	9.44	7	Make initial application just before flowering and repeat on a weekly schedule until just before harvest. Apply in sufficient water for thorough coverage. Use the higher rates when conditions favor disease development.

* Except California

MISCELLANEOUS CROPS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Chives*	Downy Mildew	0.75 – 1.8	9.5	2.65	7	Begin applications when plants are established in the field. Repeat applications every 7 to 10 days depending on disease conditions.
Cilantro, Coriander, Rosemary*	Leaf Spot	0.75 – 1.5	9.34	2.65	10	Begin applications when plants are established in the field. Begin applications prior to disease development and repeat every 10 days depending on disease conditions.

MISCELLANEOUS CROPS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Dill*	Phoma Leaf Spot, Rhizoctonia Foliage Blight	0.75 – 2.5	14.1	3.95	7	Begin applications when plants are first established in the field and repeat at 7 to 10 day intervals depending upon disease severity and environmental conditions. Use the higher rates when conditions favor disease development.
Ginseng	Alternaria Leaf Blight, Stem Blight	1 – 3.5	18.8	5.25	7	Use as a tank mix with 2 pounds Rovral® 50W in 100 gallons of water. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing. Begin BADGE X_2-Rovral applications as soon as plants have emerged in spring. Application should be repeated every 7 days until plants become dormant in fall. Apply fungicides at least 8 hours before rain. Use of a spreader-sticker or sticker is advised. **NOTE:** Alternaria Leaf and Stem Blight is most severe in humid conditions such as those found in the dense canopies of 2 to 4 year old Ginseng. It is very important that the stems be thoroughly covered with fungicide; therefore, use a spray apparatus which distributes the fungicide throughout the canopy.
Live Oak	Ball Moss, Spanish Moss	2.5 – 7	71.4	20	365	Apply in the spring when ball moss is actively growing in 100 gallons water. Use 1.5 gallons spray per foot of tree height. Ensure ball moss tufts are thoroughly wetted. The addition of nonionic surfactant will improve control. A follow up application may be needed 12 months later.
Mint*	Downy Mildew, Leaf Spot, Powdery Mildew, Rust	0.75 – 1.5	9.34	2.65	10	Begin applications prior to disease development and repeat every 10 days depending on disease conditions.
Parsley*	Bacterial Blight (*Pseudomonas sp.*)	1.25 – 2.8	7.1	2	10	Begin applications when plants are first established in the field and repeat at 10 day intervals as needed depending on disease severity and environmental conditions.

MISCELLANEOUS CROPS

CROP	DISEASE	APP. RATE (LBS PRODUCT/A)	MAX. APP. RATE/YEAR (LBS Product/A)	MAX. ANNUAL RATE (LBS Cu/A)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Sycamore	Anthracnose	0.75 – 2.5	12.9	3.6	7	Apply as a full cover spray in 100 gallons of water or sufficient volume for thorough coverage. Make first application at bud crack and second application 7 to 10 days later at 10% leaf expansion. Use the higher rates when conditions favor disease development.
Turfgrass*	Algae	4 – 6	75	21	10	May be used as a maintenance spray as needed. May be used in combination with other fungicides. Use a minimum application volume of 100 gallons of water per acre. Apply to a small area prior to large area applications to check for phytotoxicity. If phytotoxicity is present, discontinue use.

* Except California

GREENHOUSE AND SHADEHOUSE CROPS

Notice to User: BADGE X_2 may be used in greenhouses and shadehouses to control disease on crops which appear on this label and specific instructions have been developed for the crops listed. The grower should bear in mind that the sensitivity of crops grown in greenhouses and shadehouses differs greatly from crops grown under field conditions. Neither the manufacturer nor seller has determined whether or not BADGE X_2 can be used safely on all greenhouse and shadehouse grown crops. The user should determine if BADGE X_2 can be used safely prior to commercial use. In a small area, apply the recommended rates to the plants in question, i.e., foliage, fruit, etc., and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use.

Apply BADGE X_2 according to specific rates given for those crops in pounds per acre. Product contains 0.01 lbs of metallic copper per tablespoon. **One and a half (1.5) level tablespoons of BADGE X_2 per 1000 square feet is equivalent to 2.4 pounds per acre.** BADGE X_2 should be applied in adequate water for thorough coverage of plant parts. Begin application at first sign of disease and repeat at 7 to 14 day intervals; use shorter spray intervals during periods when severe disease conditions persist.

CROP	DISEASE	APP. RATE (TBSP PRODUCT/1000 SQ. FT.)	MAX. APP. RATE/YEAR (TBSP Product/1000 SQ. FT.)	MAX. ANNUAL RATE (poundsCu/1000 SQ. FT.)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Citrus (Non-Bearing Nursery)	Brown Rot, Citrus Canker, Greasy Spot, Melanose, Pink Pitting, Scab	1.5	28.6	0.289	7	Begin applications when conditions favor disease development. Repeat sprays at 30 day intervals depending on disease severity.
Cucumber	Angular Leaf Spot, Downy Mildew	0.5 – 1.5	11.9	0.12	5	Apply weekly when plants begin to vine. Use the higher rates when conditions favor disease.
Eggplant	Alternaria Blight, Anthracnose, Phomopsis	0.5 – 1.5	17.9	0.18	7	Begin applications prior to development of disease symptoms. Repeat sprays at 7 to 10 day intervals depending on disease severity.

CROP	DISEASE	APP. RATE (TBSP PRODUCT/1000 SQ. FT.)	MAX. APP. RATE/YEAR (TBSP Product/1000 SQ. FT.)	MAX. ANNUAL RATE (poundsCu/1000 SQ. FT.)	MINIMUM RETREATMENT INTERVAL (DAYS)	COMMENTS
Pepper	Bacterial Spot	0.5 – 2	26.9	0.27	3	Begin applications when conditions first favor disease development and repeat at 3 to 10 day intervals depending on disease severity.
Tomato (processing)	Anthracnose, Bacterial Speck, Bacterial Spot, Early Blight, Gray Leaf Mold, Late Blight, Septoria Leaf Spot	0.5 – 1.5	4 39.5	0.39	3	Begin applications when disease first threatens and repeat at 3 to 10 day intervals depending on disease severity.
Tomato (fresh market)	Anthracnose, Bacterial Speck, Bacterial Spot, Early Blight, Gray Leaf Mold, Late Blight, Septoria Leaf Spot	0.5 - 1.5	18.2	0.18	3	Begin applications when disease first threatens and repeat at 3 to 10 day intervals depending on disease severity.

CONIFERS

For use on conifers, including Douglas Fir, Fir*, Juniper, Leyland Cypress*, Pine* and Spruce*, in Christmas tree plantings, forest stands and silviculture nurseries. For control of foliar diseases, apply BADGE X_2 as a thorough cover spray at rates ranging from 0.75 to 1.75 pounds per acre. Begin applications in the spring at the initiation of new growth and repeat at 2 to 4 week intervals. Use the higher rates when disease pressure is severe or when environmental conditions favor disease development. **There is a maximum application rate of 2.0 lbs Cu/A with a maximum annual rate of 20 lbs Cu/A with a minimum retreatment interval of 7 days.**

BADGE X_2 may be used on the listed conifers for control of the following diseases:

CROP	LATIN NAME	DISEASE
Douglas Fir	*Pseudotsuga menziesii*	Rhabdocline Needlecast
Fir*	*Abies* spp.	Needlecasts
Juniper	*Juniperus* spp.	Anthracnose, Phomopsis Twig Dieback*
Leyland Cypress*	*X Cupressocyparis leylandii*	Cercospora Needle Blight
Pine*	*Pinus* spp.	Needlecasts
Spruce*	*Picea* spp.	Needlecasts

Lichens*: To control lichens on any of the conifers above, apply 3.5 pounds of BADGE X_2 per acre as a dormant application before new growth emerges in the spring. The addition of a non-ionic surfactant (NIS) will improve control. A second application may be required after 12 months. **NOTE:** Do not buffer or combine with emulsifiable concentrate insecticides.

* Except California

ORNAMENTALS

Use BADGE X_2 for control of bacterial and fungal diseases of foliage, flowers and stems on ornamentals in greenhouses, shadehouses, outdoor nurseries, and outdoor landscape plantings.

For ornamental crops in dormancy, apply as a thorough cover spray at rates ranging from 1.5 to 5 pounds per acre of BADGE X_2. When new growth is present, apply as a thorough cover spray at rates ranging from 1.5 to 2 pounds per acre of BADGE X_2. **One and a half (1.5) level tablespoons of BADGE X_2 per 1000 square feet is equivalent to 2.4 pounds per acre.** Begin application at first sign of disease and repeat at 7 to 14 day intervals; use the higher rates and shorter spray intervals during periods of frequent rains or when severe disease conditions persist.

Unless otherwise noted, the maximum single application rate is 2 pounds of Cu per acre and the maximum annual rate is 20 pounds of Cu per acre. The minimum retreatment interval is 7 days.

BADGE X_2 may be used alone or in combination with other fungicides registered for use on ornamentals as a maintenance spray. Use in accordance with the most restrictive of label limitations and precautions. No label dosage rates should be exceeded. This product cannot be mixed with any product containing a label prohibition against such mixing.

Notice to User: Plant sensitivities to BADGE X_2 have been found to be acceptable for the specific genera and species listed on this label under the conditions tested. However, phytotoxicity may occur. Due to the large number of species and varieties of ornamental and nursery plants and the wide range of growing conditions, it is impossible to test every one for sensitivity to BADGE X_2. Neither the manufacturer nor the seller has determined whether or not BADGE X_2 can be safely used on ornamental or nursery plants not listed on this label. The user should determine if BADGE X_2 can be used safely prior to commercial use. In a small area, apply the labeled rates to the plants in question, (bedding plants, foliage, etc.), and observe for 7 to 10 days for symptoms of phytotoxicity prior to commercial use. **NOTE:** This product may be reactive on masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray on cars, houses, lawn furniture, or other metallic surfaces.

CROP	SCIENTIFIC NAME	DISEASE
Aglaonema*	*Aglaonema* spp.	Bacterial Leaf Spot
Althea (Rose of Sharon)	*Hibiscus syriacus*	Bacterial Leaf Spot
Andromeda, Japanese*	*Pieris japonica*	Leaf Spots, Twig Blight
Aralia	*Dizygotheca elegantissima*	Alternaria, Cercospora Leaf Spot, Xanthomonas Leaf Spot
Arborvitae	*Thuja* spp.	Alternaria Twig Blight, Cercospora Leaf Blight
Aster*	*Aster* spp.	Downy Mildew, Leaf Spots
Azalea 1/	*Rhododendron* spp.	Botrytis Blight, Bud Blight*, Cercospora Leaf Spot, Phytophthora Dieback, Powdery Mildew, Twig Blight*
Beech*	*Fagus* spp.	Leaf Spots
Begonia	*Begonia semperflorens*	Bacterial Leaf Spot (*Erwinia* spp., *Pseudomonas* spp., *Xanthomonas* spp.)
Bougainvillea	*Bougainvillea spectabilis*	Anthracnose, Bacterial Leaf Spot
Boxwood*	*Buxus* spp.	Leaf Spots
Camellia	*Camellia japonica, C. sasanqua*	Anthracnose, Bacterial Leaf Spot
Camphor Tree	*Cinnamomum camphora*	Pseudomonas Leaf Spot
Canna	*Canna* spp.	Pseudomonas Leaf Spot
Carnation 1/	*Dianthus* spp.	Alternaria Blight, Botrytis Blight, Pseudomonas Leaf Spot
Cedar*	*Cedrus* spp.	Tip Blight
Cherry, Nanking*	*Prumas tomentosa*	Bacterial Leaf Spot
Chinese Tallow Tree	*Sapium sebiferum*	Bacterial Leaf Spot (*Pseudomonas* spp., *Xanthomonas* spp.)
Chrysanthemum 1/	*Chrysanthemum morifolium*	Botrytis Blight, Pseudomonas Leaf Spot, Septoria Leaf Spot
Cotoneaster	*Cotoneaster spp.*	Botrytis Blight
Crabapple*	*Malus* spp.	Fire Blight
Cypress*	*Cupressus* spp.	Twig Blight
Dahilia	*Dahlia pinnata*	Alternaria Leaf Spot, Botrytis Gray Mold, Cercospora Leaf Spot
Delphinium*	*Delphinium* spp.	Leaf Spots
Dianthus	*Dianthus* spp.	Bacterial Soft Rot, Bacterial Spot
Dogwood, Flowering	*Cornus florida*	Anthracnose
Dogwood, Kousa*	*Cornus kousa*	Fungal Leaf Spot
Douglas Fir	*Pseudotsuga menziesii*	Rhabdocline Needlecast
Dracaena*	*Dracaena marginata*	Bacterial Leaf Spot
Dumb Cane*	*Dieffenbachia* spp.	Bacterial Leaf Spot
Dusty Miller	*Senecio cineraria*	Bacterial Leaf Spot (*Pseudomonas cichorii*)
Echinacea	*Echinacea* spp.	Bacterial Leaf Spot (*Pseudomonas cichorii*)
Elm, Chinese	*Ulmus parvifolia*	Xanthomonas Leaf Spot
Euonymus	*Euonymus* spp.	Anthracnose, Botrytis Blight
Fern, Boston*	*Nephrolepis exaltata*	Bacterial Leaf Spot
Fern, Holly	*Crytomium falcatum*	Pseudomonas Leaf Spot
Fig, Weeping*	*Ficus benjamina*	Bacterial Leaf Spot
Filbert (Ornamental)*	*Corylus* spp.	Filbert Blight
Fir*	*Abies* spp.	Needlecasts
Gardenia	*Gardenia jasminoides*	Alternaria Leaf Spot, Botrytis Bud Rot, Cercospora Leaf Spot
Geranium	*Pelargonium* spp.	Alternaria Leaf Spot, Botrytis Gray Mold, Cercospora Leaf Spot
Gladiola	*Gladiolus* spp.	Alternaria Leaf Spot, Anthracnose, Bacterial Leaf Blight, Botrytis Gray Mold
Golden Rain Tree	*Koelreuteria paniculata*	Bacterial Leaf Spot
Grape Ivy*	*Cissus* spp.	Bacterial Leaf Spot
Hawthorn*	*Crataegus* spp.	Fire Blight

Hibiscus 4/	*Hibiscus* spp.	Bacterial Leaf Spot
Holly*	*Ilex* spp.	Bacterial Blight, Leaf Spots
Honeylocust*	*Gleditsia triacanthos*	Bacterial Leaf Spot
Honeysuckle, Tatarian*	*Lonicera tatarica*	Bacterial Leaf Spot
Impatiens	*Impatiens sallerana*	Bacterial Leaf Spot
Indian Hawthorn 5/	*Raphiolepis indica*	Anthracnose, Entomosporium Leaf Spot
Iris 6/*	*Iris* spp.	Bacterial Leaf Spot
Ivy (English, Algerian) 1/	*Hedera helix, H. canariensis*	Xanthomonas Leaf Spot
Ixora	*Ixora coccinea*	Xanthomonas Leaf Spot
Juniper	*Juniperus* spp.	Anthracnose, Phomopsis Twig Dieback*
Lantana	*Lantana camera*	Bacterial Leaf Spot
Leyland Cypress*	*X Cupressocyparis leylandii*	Cercospora Needle Blight
Lilac	*Syringa* spp.	Cercospora Leaf Spot, Pseudomonas Blight*
Lily, Easter 2/	*Lilium longiflorum*	Botrytis Blight
Linden*	*Tilia* spp.	Anthracnose, Leaf Blight
Loblolly Bay	*Gordonia lasianthus*	Anthracnose
Loquat	*Eriobotrya japonica*	*Colletotrichum* spp., *Entomosporium maculata*
Magnolia (Southern)	*Magnolia grandiflora*	Algal Leaf Spot, Anthracnose, Bacterial Leaf Spot
Magnolia (Sweet Bay)	*Magnolia virginiana*	Anthracnose
Magnolia (Oriental)	*Magnolia soulangiana*	Bacterial Leaf Spot
Mandevilla	*Mandevilla* spp.	Anthracnose
Maple*	Acer spp.	Pseudomonas Leaf Blight, Tar Leaf Spot
Marigold	*Tagetes* spp.	Alternaria Leaf Spot, Botrytis Leaf Rot, Cercospora Leaf Spot, Flower Rot
Mountain-Ash*	*Sorbus* spp.	Fire Blight
Mulberry, Contorted*	*Morus bombycis*	Bacterial Leaf Spot
Mulberry, Weeping	*Morus alba*	Bacterial Leaf Spot
Narcissus*	*Narcissus* spp.	Leaf Blight
Nephthytis*	*Syngonium podophyllum*	Bacterial Leaf Spot
Oak*	*Quercus* spp.	Anthracnose, Leaf Spots
Oak, Laurel	*Quercus laurifolia*	Algal Leaf Spot (*Cephaleuros virescens*)
Oleander	*Nerium oleander*	Bacterial Leaf Spot, Fungal Leaf Spot
Oregon Grapeholly*	*Mahonia acquifolium*	Leaf Spots
Pachysandra	*Pachysandra procumbens*	Canker*, Leaf Spots, Twig Blight*, Volutella Leaf Blight
Palm, Date	*Phoenix canaries*	Pestalotia Leaf Spot
Palm, European Fan	*Chamaerops humilis*	Pestalotia Leaf Spot
Palm, Parlor*	*Chamaedorea elegans*	Bacterial Leaf Spot
Palm, Queen	*Arecastrum romanzoffianum*	Exosporium Leaf Spot, Phytophthora Bud Rot
Palm, Washingtonia	*Washingtonia robusta*	Pestalotia Leaf Spot
Peach (Flowering) 3/*	*Prunus* spp.	Bacterial Blast, Brown Rot, Fire Blight
Pear (Flowering)	*Pyrus calleryana*	Fire Blight, Leaf Spot
Pentas (Egyptian Star)	*Pentas* spp.	Bacterial Leaf Spot (*Pseudomonas* spp.*, *Xanthomonas* spp.)
Peony	*Paeonia* spp.	Botrytis Blight
Periwinkle	*Catharanthus roseus, Vinca* spp.	Phomopsis Stem Blight
Philodendron	*Philodendron selloum*	Bacterial Leaf Spot
Phlox	*Phlox* spp.	Alternaria Leaf Spot
Photinia (Red Tip)	*Photinia x fraseri, P. glabra*	Anthracnose, Entomosporium Leaf Spot
Pine*	*Pinus* spp.	Needlecasts
Pistachio	*Pistacia chinensis*	Anthracnose
Plantain Lily 6/	*Hosta* spp.	Bacterial Leaf Spot
Plum (Flowering) 3/*	*Prunus* spp.	Bacterial Blast, Bacterial Leaf Spot, Brown Rot, Fire Blight
Pothos*	*Scindapsus* spp.	Bacterial Leaf Spot
Powder Puff Plant	*Calliandra* spp.	Bacterial Leaf Spot
Pyracantha	*Pyracantha* spp.	Fire Blight, Scab
Rhododendron	Rhododendron spp.	Alternaria Flower Spot
Rose 1/	*Rosa* spp.	Black Spot, Powdery Mildew
Snapdragon	*Antirrhinum majus*	Anthracnose, Dieback, Downy Mildew
Spathe Flower*	*Spathiphyllum* spp.	Bacterial Leaf Spot
Spirea*	*Spiraea* spp.	Fire Blight
Spruce*	*Picea* spp	Needlecasts
Sycamore	*Platanus* spp.	Anthracnose, Leaf Spots*
Tulip	*Tulipa* spp.	Anthracnose, Botrytis Blight
Umbrella Tree*	*Schefflera* spp.	Bacterial Leaf Spot
Verbena	*Verbena* spp.	Xanthomonas Leaf Spot

Viburnum	*Viburnum odoratissimum, V. suspensum, V. plicatum*	Anthracnose
Viola (Pansy, Violet)	*Viola* spp.	Downy Mildew
Willow	*Salix* spp.	Anthracnose
Yew*	*Taxus* spp.	Needle Blight
Yucca (Adam's Needle)	*Yucca* spp.	Cercospora Leaf Spot, Septoria Leaf Spot
Zinnia*	*Zinnia* spp.	Leaf Spots

* Except California

1/ Can cause discoloration of foliage and/or blooms on some varieties. To prevent residues on commercial plants, do not spray immediately before selling season.

2/ Apply at 4.5 to 7.5 pounds per acre. The maximum single application rate is 2.5 pounds of Cu per acre. The maximum amount of metallic copper which may be applied in a 12 month period is 75 pounds of Cu per acre. Do not apply any additional copper pesticide to this land for 36 months.

3/ Apply dormant through bloom only.

4/ Hibiscus - Do not apply to plants in flower.

5/ For Indian Hawthorne use 3 to 6 pounds per acre.

6/ Some cultivars may be sensitive to BADGE X_2.

NOTE: Phytotoxicity may depend on varietal differences. If unfamiliar with the use of BADGE X_2, apply the recommended rate to a few plants and observe after 7 to 10 days for symptoms of phytotoxicity.

Control of Ball Moss*, Spanish Moss* and Lichens* on Ornamentals and Shade Trees: Apply BADGE X_2 in early spring when trees are dormant. Apply 9 to 12 pounds of BADGE X_2 in 100 gallons of water, using 1 ½ gallons of spray per foot of tree height. Be sure to thoroughly wet ball moss tufts, Spanish moss or lichens. The addition of a non-ionic surfactant will improve control. A second application may be required after 12 months. Do not apply more than 12 pounds of product in a single application.

NOTE: BADGE X_2 may be injurious to some ornamental plants growing beneath the trees. This product may be reactive on masonry and metal surfaces such as galvanized roofing. Avoid contact with metal surfaces. Do not spray on cars, houses, lawn furniture, etc.

Cold Storage Protection for Dormant Rootstock*: To protect bare-root nursery trees from Phytophthora Crown Rot and Botrytis, use 4 to 6 pounds of BADGE X_2 per 100 gallons of water. Apply as a dip or spray to the roots and lower stems of dormant rootstock prior to placing in cold storage. Do not apply to rootstock less than 2 years old.
*Except California

SPRAY DRIFT MANAGEMENT

A variety of factors including weather conditns (e.g., wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size
Apply only as a medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed
Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition (approximately 3 to 10 mph), and there are no sensitive areas within 250 feet downwind.

Temperature Inversions
If applying at wind speeds less than 3 mph, the applicator must determine if a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Other State and Local Requirements
Applicators must follow al state and local pesticide drift requirements regarding application of copper compounds. Where states have more stringent regulations, they must be observed.

Equipment
All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

Additional Requirements for Aerial Applications

- The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter
- The release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.
- When applications are made with a crosswind, the swath must be displaced downwind. The applicator must compensate for this displacement at the up and downwind edge of the application area by adjusting the path of the aircraft upwind.

Additional Requirements for Ground Boom Application

- Do not apply with a nozzle height greater than 4 feet above the crop canopy.

General Chemigation Requirements

- Apply this product only through one or more of the following types of systems: sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set or hand move irrigation systems. Do not apply this product through any other type of irrigation system.
- Crop injury or lack of effectiveness can result from non-uniform distribution of treated water.
- If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.
- A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

Requirements for Chemigation Systems Connected to Public Water Systems

- Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventor (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favor drift beyond the area intended for treatment.

Requirements for Sprinkler Chemigation

- The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.
- The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed through storage and disposal.

Pesticide Storage:	Store under well-vented, cool and dry storage conditions. Do not store under moist conditions.
Pesticide Disposal:	Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Container Handling:	This is a nonrefillable container. Do not reuse or refill this container. Empty the package completely into application equipment by shaking and tapping sides. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller, or, if allowed by state and local authorities, by burning. If burned stay out of smoke.

LIMITATION OF WARRANTY AND LIABILITY

Read the entire label before using this product, including this Limitation of Warranty and Liability.

If the terms are not acceptable, return the product at once unopened for a refund of the purchase price.

This Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes set forth in the Directions for Use, subject to the inherent risks described below, when used in accordance with the Directions for Use under normal conditions.
TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, ISAGRO MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

Buyers and Users of this product must be aware that there are inherent unintended risks associated to the use of this product, independent from the control of Isagro. These risks include, but are not limited to, weather conditions, soil factors, moisture conditions, diseases, irrigation practices, condition of the crop at the time of application, materials which are present in the tank mix with this product or prior to the application of it, cultural practices or the manner of use or application, all risks which are impossible to eliminate. The Buyers and Users should be aware that these factors may cause: ineffectiveness of the product, reduction of harvested yield of the crop (entirely or partially), crop injury or injury to non-target crops or plants or to rotational crops caused by carryover in the soil, resistance of the target diseases to this product. Therefore additional care, treatment and expense are required to take the crop to harvest.

If the Buyer does not agree with the acceptance of these risks, then THE PRODUCT SHOULD NOT BE APPLIED. To the extent consistent with applicable law, by applying this product the Buyer acknowledges and accepts these inherent unintended risks and AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

To the extent consistent with applicable law, in no event shall ISAGRO or Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product (including claims based in contract, negligence, strict liability, other tort or otherwise). To the extent consistent with applicable law, the exclusive remedy of the User or Buyer and the exclusive Liability of Isagro or Seller shall be the return of the purchase price of the product, or at the election of Isagro or Seller, the replacement of the product.

To the extent consistent with applicable law, this Company does not warrant any product reformulated or repackaged from this product except in accordance with this Company's stewardship requirements and with express written permission from this Company.

Isagro or its Seller must have prompt notice (within 7 days of observation) of any claim so that an immediate inspection of Buyer's or User's growing crops can be made. To the extent consistent with applicable law, if Buyer and User do not notify Isagro or Seller of any claims, in proper time, it shall be barred from obtaining any remedy.

To the extent consistent with applicable law, by applying this product the Buyers and Users are deemed to have accepted the terms of this Limitation of Warranty and Liability, which may not be modified by any verbal or written agreement.

Amendment CLL 06272013
Amendment Revisions 08292013
Amendment Revisions 09292013 CL (ISAGRO) and 10032013 CLL
Amendment Revisions 11182013 CLL

EXHIBIT G

ABOUND® FLOWABLE FUNGICIDE APPROVED LABEL

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GROUP	M2	FUNGICIDE

MICROTHIOL® DISPERSS®

MICRONIZED WETTABLE SULFUR

OMRI Listed

ACTIVE INGREDIENT:	
Sulfur	80.0%
OTHER INGREDIENTS	20.0%
TOTAL	100.0%

NOTIFICATION
MAR 1 2 2010

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID

IF ON SKIN OR CLOTHING:
- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF SWALLOWED:
- Call a poison control center or doctor for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to do so by poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF INHALED:
- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

EPA Reg. No. 70506-187
Net Contents: _____

EPA Est. No. 44420-FR-1
Batch/Lot # _____

United Phosphorus, Inc.
630 Freedom Business Center, Suite 402
King of Prussia, PA 19406

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Harmful if swallowed, inhaled, or absorbed through skin. Avoid breathing dust or spray mist. Avoid contact with skin, eyes, or clothing.

PERSONAL PROTECTIVE EQUIPMENT

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- long-sleeved shirt and long pants
- chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- shoes plus socks
- personal protective eyewear

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS

Users should:

Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not apply where runoff is likely to occur. Do not contaminate water when disposing of equipment washwaters.

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling, and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains

requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.
Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- coveralls
- chemical resistant gloves made of any waterproof material
- shoes plus socks
- protective eyewear

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box only apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

For non-agricultural turf and grass uses (golf courses, home lawns, and landscapes around buildings) do not enter or allow entry into treated area until sprays have dried.

APPLICATION INSTRUCTIONS

Apply through any type of handheld, knapsack, mechanical or pneumatic spraying equipment.
MIXING: Pour the required amount of MICROTHIOL DISPERSS into the indicated amount of water while stirring. MICROTHIOL DISPERSS disperses instantly.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Dilute Application:
Field: Specified rate in 20 to 60 gallons of water per acre.
Orchard: Specified rate in 100 to 800 gallons of water per acre.
Concentrated Application:
Field: Specified rate in 5 to 10 gallons of water per acre.
Orchard: Specified rate in 20 to 100 gallons of water per acre.
Aerial Application:
Field: Specified rate in 3 to 20 gallons of water per acre.
Orchard: Specified rate in 10 to 20 gallons of water per acre.

SPRAY COVERAGE

Foliage must be completely covered on both the upper and lower leaf surfaces for effective control. Dense canopies can limit complete coverage. Adequate spray volume for thorough coverage is essential.

COMPATIBILITY

MICROTHIOL DISPERSS is compatible with most Bordeaux mixtures, copper fungicides, liquid fertilizers, organic fungicides, insecticides, acaricides and herbicides.

USE INSTRUCTIONS

Some crops may be damaged by sulfur under certain climatic conditions, such as when temperature is high. United Phosphorus, Inc. does not recommend application if temperature will exceed 90° F within the three days following spraying, due to the risk of crop injury. Crops grown in greenhouses may be more sensitive to sulfur injury, so the lowest labeled rate (or below labeled rates) should be tried initially. Do not use on any crop unless sulfur has been shown to be safe in your locality. Do not allow spray to drift onto sulfur-sensitive crops such as apricots, cranberries, spinach and d'Anjou pears.

Do not use within two weeks of an oil spray treatment, except for Dormant, Delayed Dormant, or Postharvest applications with a suitable oil. For citrus, do not apply within 21 days of an oil spray. Spreader/stickers are not required for use with MICROTHIOL DISPERSS. If spreader/stickers are used with MICROTHIOL DISPERSS, foliar injury may be enhanced under high temperatures. When growing crops for processing, consult the processor before applying sulfur.

NOTE: The application rates specified for each crop are the maximum that may be applied. These amounts may be reduced if experience or local practice indicates that lesser amounts may be effective. Consult State Agriculture Experiment Station or State Extension Service specialist for rates recommended in your local area.

NUTRIENT USE

Microthiol Disperss applications will provide sulfur needed to meet a plant's nutrient requirements and should be considered for use in total nutrient applications. Microthiol Disperss can be used as a micronutrient supplement when applied on the foliage or soil to the crops listed on this label. Consult your State Agricultural Experiment Station or Extension Specialist for advice in selecting treatments that best fit local conditions.

VEGETABLE CROPS

Crop	Pest	Rate Lbs/A	Directions
Artichokes (all varieties)	Leaf Spot Powdery Mildew	10-20	Begin when disease first appears and repeat at 7- to 10-day intervals or as needed.
Asparagus	Mites Rust	10-30	Apply after cutting, irrigate and cultivate before applying. Repeat at 7- to 10-day intervals, or as needed, through fern growth season.

Crop	Pest	Rate Lbs/A	Directions
Beans, Peas	Leaf Spot Powdery Mildew Red Spider Mite Rust	3 - 10	Apply at early leaf stage and repeat at 10- to 14-day intervals or as needed.
Broccoli, Brussels sprouts, Cabbage, Cauliflower Kohlrabi	Powdery Mildew Red Spider Mite Septoria Leaf Spot	3-10	Begin in early leaf stage. Repeat every 10 to 14 days or as needed.
Carrots	Petrobia Mite Powdery Mildew	3-10	Apply at early leaf stage and repeat every 7 to 10 days or as needed.
Celery	Powdery Mildew Red Spider Mite Rust	4-6	Apply at early leaf stage and repeat every 10 to 14 days or as needed.
Cowpeas	Rust	2-9	Begin applications soon after seedlings emerge. Repeat at 7- to 10-day intervals as needed throughout the season.
Cucumbers	Powdery Mildew	2-4	Apply when disease first appears and repeat as necessary. Do not apply more than 2 pounds MICROTHIOL DISPERSS per acre per application during periods of high temperatures.
Eggplant	Powdery Mildew	4-6	Apply when first true leaves appear. Repeat at weekly intervals or as needed.
Endive Escarole Swiss Chard Salsify	Powdery Mildew Red Spider Mite Rust	4-6	Apply at early leaf stage and repeat every 10 to 14 days or as needed.
Greens: Collards, Kale, Mustard, Beet, Turnip	Powdery Mildew Red Spider Mite Rust Septoria Leaf	3-10	Apply at early leaf stage and repeat every 14 days or as needed.

Crop	Pest	Rate Lbs/A	Directions
	Spot		
Lettuce (Head and Leaf)	Powdery Mildew Red Spider Mite Rust	5-10	Apply at early leaf stage and repeat every 14 days or as needed. Thorough coverage is required.
Melons	Powdery Mildew	5-10	Apply when disease first appears and repeat as needed. Sulfur can injure plants, especially when temperature reaches 90° F. Do not use on sulfur sensitive varieties.
Okra	Leaf Spot Mites Powdery Mildew	3-10	Apply at early leaf stage and repeat every 14 days or as needed.
Onions, Garlic, Dry Onions Dry Shallots	Petrobia Mite Powdery Mildew	3-10	Apply when disease and/or mites first appear and repeat as needed.
Potatoes Sweet Potatoes	Leaf Spot Powdery Mildew Red Spider Mite	5-10	Apply at early leaf stage and repeat every 10 to 14 days or as needed.
Peppers	Broad Mite Leaf Spot Powdery Mildew Red Spider Mite	3-10	Apply at early leaf stage and repeat every 10 to 14 days or as needed.
Spinach	Powdery Mildew Rust	4-6	For use on spinach to be processed only. Do not use on fresh spinach as sulfur has been shown to have phytotoxic effects on certain varieties of spinach. Spray on a small area first to test for phytotoxicity before making a full application. Apply when disease first appears and repeat at 7- to 10-day intervals or as needed.
Squash (including Pumpkins, Summer and	Powdery Mildew	5-10	Apply when disease first appears and repeat as needed. Sulfur can injure plants, especially when temperature reaches 90° F. Do not use on sulfur sensitive varieties.

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Crop	Pest	Rate Lbs/A	Directions
Winter Squash)			
Table Beets	Powdery Mildew Red Spider Mite	3-5	Apply at first indication of problem with or without other pesticides. Repeat as necessary.
Tomatoes	Powdery Mildew Russet Mite Two-Spotted Mite	5-20	Begin application when symptoms first appear and repeat at 7- to 10-day intervals or as needed. Thorough coverage is required. For Russet Mite apply 10 to 20 pounds per acre.
Turnips Parsnips Horseradish Radishes Rutabagas	Powdery Mildew Red Spider Mite Rust Septoria Leaf Spot	3-10	Apply at early leaf stage and repeat every 10 to 14 days or as needed.

FRUIT AND NUT CROPS

Crop	Pest	Rate Lbs/A	Directions
Almonds	Brown Rot Flat Mite Leaf Spot Powdery Mildew Red Spider Mite Rust Silver Mite	10-20	Apply at dormant through harvest, alone or in tank-mixes with other fungicides/miticides for disease protection, mite suppression, and resistance management. Repeat applications at 7- to 10-day intervals or as needed.
Apples, Pears	Powdery Mildew Scab Blister Mite Red Spider Mite Silver Mite Two-Spotted	10-20	Apply at prebloom and petal fall. Apply with cover sprays throughout the season. Do not apply to d'Anjou pears or sensitive apple varieties (i.e. Ontario or Cox Orange).

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Crop	Pest	Rate Lbs/A	Directions
	Mite		
Apples, Pears (Dormant, Delayed Dormant or Postharvest)	Blister Mite Pear Psylla Red Spider Mite Two-Spotted Mite	10-20	Apply with a suitable spray oil postharvest and during the dormant periods of bud development. Do not apply to sensitive varieties of pears except at these stages.
Avocados	Brown Mite	10-20	Apply as needed.
Bananas	Mites	10-30	Apply as needed.
Citrus	Broad Mite Bud Mite Citrus Rust Mite Flat Mite Red Spider Mite Silver Mite Six-spotted Mite Thrips Yuma Spider Mite	10-20	Apply as needed. Do not apply within 21 days of an oil spray.
Dates	Banks Grass Mite	20	Apply in sufficient water to provide thorough coverage of the date clusters. Begin applications as mites or mite webbing are first observed. Repeat applications every 14 days or as necessary, until dates are mature and are no longer subject to mite feeding injury.
Figs	Mites including: Eriophyid Mites Fig Mite	5	Apply at a minimum of 100 gallons per acre. Begin applications in the spring, and continue on a 3-4 week schedule or as necessary.
Grapes	Powdery Mildew Phomopsis Blister Mite Bud Mite Red Spider Mite	3-10	Apply throughout the season at 7- to 14-day intervals or as needed. Thorough coverage is required. Note: Use with caution on Concord, Labrusca type, and other sulfur sensitive grape cultivars as injury can occur after bloom.

Crop	Pest	Rate Lbs/A	Directions
Mangos	Powdery Mildew	10-30	Begin application before bloom. Repeat at bloom, after fruit set, and 3 weeks later or as necessary.
Olives	Olive Mites	10-30	Apply as needed.
Papaya	Mites	10-30	Apply when mites first appear and repeat as necessary to maintain control. Do not apply in combination with emulsifiable pesticide formulations as foliar injury may occur. Do not apply to low vigor or moisture stressed plants. Do not apply prior to or during periods of excessively high temperatures, periods of low rainfall or within two weeks of an oil spray.
Pecans	Leaf Spot Powdery Mildew Sooty Mold Eriophyid Mites (including Hickory and Pecan) Flat Mite Red Spider Mite Silver Mite Two-Spotted Mite	5-10	Apply throughout the season as needed. Note: Some varieties of pecans are sensitive to sulfur sprays under certain conditions. Do not apply unless varieties are known to be tolerant of sulfur.
Pineapple	Mites	10-30	Apply as needed.
Pistachios	Mites	10-20	Begin applications in June-July. Make additional applications as necessary. When temperatures exceed 90° F, lower rates and more frequent applications are advised in order to avoid crop injury.
Pomegranate	Mites	3-10	Begin applications in May or June. Make additional applications on a 3-4 week schedule, or as necessary. Use higher rates if past mite damage has been high. If temperatures exceed 90° F, lower rates and more frequent applications are advised in order to avoid crop injury.
Quince	Brown Rot	10-30	Begin applications at early leaf stage and repeat

Crop	Pest	Rate Lbs/A	Directions
	Powdery Mildew Scab		as necessary. Do not use on sulfur sensitive varieties.
Stone Fruit: Peaches, Plums, Cherries, Nectarines, Prunes	Brown Rot Flat Mite Leaf Spot Powdery Mildew Red Spider Mite Rust Silver Mite	10-20	Apply at dormant through harvest, alone or in tank-mixes with other fungicides/miticides for disease protection, mite suppression, and resistance management. Repeat applications at 7- to 10-day intervals or as needed. For Brown Rot of fruit, apply when fruit starts to ripen. Do not apply to apricots.
Walnuts, Macadamias	Almond Mite Broad Mite European Red Mite Pacific Mite Red Spider Mite Two-Spotted Mite	10-20	Apply throughout the season as needed. Note: Some varieties of walnuts are sensitive to sulfur sprays under certain conditions. Do not apply unless varieties are known to be tolerant of sulfur.

FIELD CROPS

Crop	Pest	Rate Lbs/A	Directions
Alfalfa Including: Seed Alfalfa	Atlantic Mite Pacific Mite Red Spider Mite Lygus (suppression)	12-25	Apply throughout the season as necessary.
Cereals: Corn, Wheat, Barley, Oats, Rye, Sorghum	Atlantic Mite Banks Grass Mite Pacific Mite Powdery Mildew Red Spider Mite	8-15	Apply when mites or symptoms first appear and repeat applications as necessary.

Crop	Pest	Rate Lbs/A	Directions
	Two-spotted Mite		
Clover	Mites Powdery Mildew	2-9	Apply as needed.
Cool Season Forage Grasses (including; Timothy, Orchard Grass, Fescues, Sudan Grass, Bermuda Grass, Bluegrass, and Bromegrass)	Mites (including Banks Grass Mite)	5-10	Apply at first sign of mites. Continue applications at 7-day intervals, or as needed, until mites are below economic levels. The addition of adjuvants (spreaders, surfactants, etc.) can increase the chance of crop injury, and is not recommended. For aerial applications: Use the specified rate in a minimum of 3 gallons of water per acre. For ground applications: Use the specified rate in a minimum of 20 gallons of water per acre.
Cotton	Atlantic Mite Red Spider Mite Two-Spotted Mite	5-10	Apply throughout the season as necessary.
Flax	Powdery Mildew	2-9	Apply at first sign of disease. Repeat at 7- to 10-day intervals or as necessary.
Peanuts	Leaf Spot Powdery Mildew Red Spider Mite Rust Two-Spotted Mite	5-8	Apply at early leaf stage and repeat applications as necessary.
Soybeans	Leaf Spot Powdery Mildew Rust	10-15	Apply at early leaf stage and repeat at 7- to 14-day intervals or as needed.
Sugar Beets	Powdery Mildew	5-10	Apply as soon as symptoms appear and repeat every 7 to 14 days or as needed.

Crop	Pest	Rate Lbs/A	Directions
	Red Spider Mite		
Sugarcane	Mites	8-15	Apply when mite pressure is imminent and repeat applications as necessary.

SMALL FRUITS AND BERRIES

Crop	Pest	Rate Lbs/A	Directions
Blackberry, Boysenberry Dewberry, Loganberry, Blueberry, Gooseberry, Huckleberry , Currant	Powdery Mildew	6-15	Begin application before blossoms open and continue at 10-day intervals or as needed.
Raspberries	Powdery Mildew Red Berry Mite	6-15	Apply each week from first bloom to fruit set. Repeat as the weather requires.
Strawberries	Powdery Mildew Red Spider Mite Two-Spotted Mite	5-10	Begin application at early leaf stage and repeat as needed. Do not use on sulfur-sensitive varieties.

MISCELLANEOUS CROPS

Crop	Pest	Rate Lbs/A	Directions
Spearmint, Peppermint	Powdery Mildew	4-6	Apply when mint is 5-6" tall or when disease appears. Repeat twice, at 30-day intervals. Do not apply within 30 days of harvest.
Hops	Red Spider Mite	2-6	Begin applications at early leaf stage, and repeat as needed.
Ornamentals , Roses	Leaf Spot Powdery Mildew	3-10 by ground or 3-20 by air	Apply to ensure complete plant coverage. Begin when disease first appears and repeat at 5-10 day intervals.

	Two-Spotted Mite		

OTHER ORNAMENTALS

For the ornamentals listed below apply 3 to 10 pounds in 100 gallons of water. Begin when disease first appears and repeat at 5 to 10 day intervals as needed.

For Control of Powdery Mildew on: Alder, Asters, Azalea, Buttonbush, Catalpa, Carnations, Chrysanthemum, Cosmos, Crepe Myrtle, Dahlia, Daisy, Delphinium, Dogwood, Euonymus, Gladiolus, Golden Fleece, Hibiscus, Honeysuckle, Horse chestnut, Hydrangea, Lady's Mantle, Ligustrum, Lilac, Linden, Matrimony vine, Phlox, Poplar, Rhododendron, Sage, Silver vine, Smilax, Spirea, Stag horn sumac, Sunflowers, Sweet Peas, Sycamore, Trumpet vine, Verbena, Violets, Willow, Witch hazel, and Zinnia.

For Control of Red Spider Mites on: Arborvitae, Carnation, Cedars, Chrysanthemums, Clematis, Hydrangea, Rose, Snapdragon, and Sweetpeas.

For Control of Rust on: Aster, Carnation, Chrysanthemum, Rose, and Snapdragon.

For Control of Leaf Spot on: Calendula, Cherry Laurels, Clematis, Columbine, English Ivy, Foxglove, Hollyhock, Hydrangea, Petunia, Phlox, Sage, Smilax, and Snapdragon.

For Control of Botrytis Blight on: Hydrangea.

TURF AND GRASS

Crop	Pest	Rate Lbs/A	Directions
Commercial Turf including (but not limited to) golf courses, sod farms, and grass grown for seed	Powdery Mildew Rust	3-10	Begin applications at the very first sign of disease, or as a preventative when conditions favor disease. These are explosive diseases and are very difficult to control once fully established. Repeat applications as needed. Tank mixing with systemic fungicides will improve control and help in a resistance management program with these fungicides.
Bentgrass, Bluegrass, Ryegrass and Fescue	Suppression of Fusarium Patch Suppression of Take-all in	10-55	Apply monthly from September through May. Apply prior to outbreak of disease and use higher rate when conditions favor disease and temperatures are below 80° F. Use lower rates when temperatures are greater than 80° F. May cause Poa Annua decline.

	Bentgrass		

DIRECTIONS FOR USE THROUGH CHEMIGATION SYSTEMS

GENERAL INSTRUCTIONS

Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, hand move; or drip (mini-micro sprinklers, strip tubing, trickle) irrigation systems. Do not apply this product through any other type of irrigation system.

PRECAUTION: Corrosion of aluminum and carbon/galvanized steel irrigation sprinkler systems may be experienced with the use of sulfur fungicides. If the user elects to apply this product through such systems, it is essential that all application equipment containing this product be thoroughly flushed with clean water after each day's use. Continue to operate system with clean water until all product has cleared the last sprinkler head.

Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from nonuniform distribution of treated water.
If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
Do not connect chemigation system to any public water system. Public water system means a system for the provision of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
MICROTHIOL DISPERSS may be applied in conjunction with chemically neutral liquid fertilizers.

SYSTEM REQUIREMENTS

Systems utilizing a pressurized water and pesticide injection system must meet the following requirements:
The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

APPLICATION INSTRUCTIONS

Observe the requirements in the System Requirements section.
Apply MICROTHIOL DISPERSS only through systems containing anti-siphon and check valves designed to prevent water source contamination or overflow of the mix tank and containing interlocking controls between the metering device and the water pump to insure simultaneous shut-off.
Maintain a gentle continuous agitation in mix tank during mixing and application to assure a uniform suspension.
Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute suspension per unit time.
Application of more than recommended quantities of irrigation water per acre may result in decreased product performance.
Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product cannot be flushed and must be dismantled and drained. In a center pivot system, block the nozzle set nearest the well/pivot/injection unit to prevent spray being applied to this area.
Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

SPRAY PREPARATION:

Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water. Prepare a suspension of MICROTHIOL DISPERSS in a mix tank. Fill the tank with ½ or ¾ the desired amount of water. Start mechanical or hydraulic agitation. Slowly add the required amount of MICROTHIOL DISPERSS and then the remaining volume of water.

Sprinkler Irrigation- Notes:

Observe all System Requirements and Application Instructions above.
Set sprinkler system to deliver 0.1 to 1.25 inches of water per acre. Volumes of water higher than this may reduce efficacy. Start sprinkler and then uniformly inject the suspension of MICROTHIOL DISPERSS into the irrigation water line so as to deliver the desired rate per acre. The suspension of MICROTHIOL DISPERSS should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. When treatment with MICROTHIOL DISPERSS has been completed, do not irrigate the treated area for 24 to 48 hours to prevent washing the chemical off the crop.

Do not apply when wind speed favors drift beyond the area intended for treatment.
Where sprinkler distribution patterns do not overlap sufficiently, unacceptable disease control may result.
Check local restrictions and requirements regarding sprinkler irrigation applications, as they may vary from state to state.

STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

PESTICIDE STORAGE: Store in a closed package in a cool, dry, secure place. Do not store near flammable materials. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling, sweep up spillage and dispose of in accordance with the Pesticide Disposal Instructions below.
PESTICIDE DISPOSAL: Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
CONTAINER HANDLING: Nonrefillable container. Do not reuse or refill this container. Completely empty bag into application equipment by shaking and tapping sides and bottom to loosen clinging particles. Then offer for recycling if available or dispose of empty bag in a sanitary landfill or by incineration or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

EMERGENCY TELEPHONE NUMBERS:

CHEMTREC: (800) 424-9300

MEDICAL: (866) 673-6671 Rocky Mountain Poison Control Center

IMPORTANT INFORMATION
READ BEFORE USING PRODUCT

CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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