

U.S. Department of Defense Armed Forces Pest Management Board's 2006 Strategy

Strategic Approach

DoD's 2006 Strategic Approach reflects our current wartime mission. As our troops operate in areas with serious insect-transmitted diseases such as malaria and leishmaniasis, we must be prepared to counter the risks of these diseases with safe, effective and environmentally sound control strategies within the integrated systems of IPM principles. We must also continue to refine our IPM strategies on US installations which serve as support and training centers for overseas missions and as homes for family members. We anticipate that much of DoD's research, demonstrations and tested products will be made available to improve pesticide and public health risk reduction in the civilian sector as well.

Progress on 2005 Activity 1

As a carryover from our 2004 PESP Activity #2, DoD will continue to cooperate with industry in development, testing and fielding of additional pathogen test kits to determine the presence or absence of human pathogens in insect or other arthropod vectors. This year we hope to complete development and testing to make commercially available test kits for malaria, dengue, Japanese encephalitis, Rift Valley fever and Ross River virus..

DoD will continue in partnership with industry to develop, test, and field pathogen test kits to determine the presence or absence of human pathogens in arthropod vectors. Pathogen test kits are extremely useful monitoring tools for measuring the public health (disease) risk, which can then be weighed against any risks from pesticide applications.

The DoD is steadily progressing in its work with Small Business Research Initiative partners to develop and test pathogen test kits. We have made significant progress in developing and testing kits using PCR or dipstick technology for a variety of vector-borne diseases and we are expanding our programs to include additional diseases. A new malaria dipstick test kit is near completion, and kits for dengue fever, Japanese encephalitis, Rift Valley fever, Ross River virus, leishmania, and rickettsial diseases have been developed and are currently being tested. Development, testing, and ultimate commercial production of these important tools require a lengthy commitment of time and resources.

Progress on 2005 Activity 2

The DOD Armed Forces Pest Management Board (AFPMB) continues to administer the Deployed Warfighter Protection Program, a \$5-million annually, 6-year research program designed to develop new technologies to protect U.S. soldiers from insects that transmit diseases of military significance. The research money is being awarded to USDA-ARS as well as other government, industry and university groups that submit approved research proposals.

The DOD Armed Forces Pest Management Board (AFPMB) administers the Deployed Warfighter Protection Program (DWFP), a \$5-million annually, 6-year research program designed to develop new technologies to protect U.S. soldiers from vector-borne diseases.

The DWFP has funded 20 competitive grant proposals since 2004; six of these in 2005. Several high profile projects focus on development and testing of effective new public health pesticides which are safer for humans and the environment. Other featured projects will improve or design new vector control application techniques, resulting in more efficient and targeted treatments using less active ingredient. Since these are multi-year awards, research results have not yet been published in peer-reviewed journals. However, ongoing progress is monitored at the annual DWFP Research Review.

Progress on 2005 Activity 3

As an outcome of 2004 Activity 3, DoD established the Public Health Insecticide Consortium (PHIC). The group consists of representatives from DoD, CDC, NIH, USAID, USDA, National Pest Management Association, Responsible Industry for a Sound Environment, American Mosquito Control Association, and major industries. The consortium is committed to working closely together with the EPA to lower barriers to developing new, more effective, and lower toxicity public health pesticides that are needed to protect health of civilians and military personnel in the U.S. and abroad. DoD is keenly interested in the development of new, safer products, but does not have the economic resources to discover, develop, and register products alone. This year, the PHIC will develop and begin to implement a strategic plan to address this concern.

DoD leads the Public Health Insecticide Consortium (PHIC) for public health pesticide users and stakeholders. The consortium is working closely together with the EPA to lower barriers to developing new, more effective, and lower toxicity public health pesticides that are needed to protect human health. This year, the PHIC will develop and begin to implement a strategic plan to address this concern.

The considerable expertise of PHIC participants was used to develop a comprehensive strategic plan and priority projects. A working group is currently completing the first priority project to identify specific public health pesticide needs and to determine safe and environmentally sound solutions to reduce or eliminate arthropod pests and disease vectors of public health importance.

Progress on 2005 Activity 4

DoD has a goal out through FY 2010 that 100% of its installations have a current pest management plan. DoD pest management plans are long-range, comprehensive installation planning documents that establish the strategy and methods for conducting safe, effective, and environmentally sound integrated pest management programs. These plans must be reviewed annually by installation pest management and natural resources personnel, and approved by a higher-headquarters pest management professional.

DoD has a goal out through FY 2010 that 100% of its installations have a current, annually reviewed, pest management plan.

At the end of FY 2005, DoD had 438/572 (77%) of its pest management plans updated. We continue to improve our plan maintenance program each year.

Progress on 2005 Activity 5

By reducing the total amount of pesticide used.

DoD will maintain the 55% reduction in pesticide use achieved between 1993 and 2003.

DoD reduced its total pesticide usage from 892,000 pounds to 351,000 (61%) from 1993 to 2005, representing an additional reduction of 15,000 pounds of active ingredient since last year. DoD continues to exceed the current goal without switching to products with higher toxicities. This continual trend is especially impressive given the extensive and unprogrammed vector control efforts for hurricane relief last year, as well as new mandates for invasive species control, and perimeter security, which may involve heavy herbicide applications.

Progress on 2005 Activity 6

DoD has set a goal, out through 2010, that 100% of its pesticide applicators will be certified, even if they are using only non-restricted use pesticides. For military personnel and government civilians, this means DoD pesticide applicator certification. For stateside contractors, this means a valid state certification. For foreign nationals and contractors at installations overseas, this means completion of a DoD pesticide applicator certification class that does not grant a FIFRA certification. .

DoD has set a goal that 100% of its pesticide applicators will be certified, even if they are using only non-restricted use pesticides.

At the end of FY 2004, DoD had 1,478/1,486 (99.5%) of its pesticide applicators certified. We are very proud of this achievement and feel that this goal probably reduces

pesticide risk more than any other because our pest managers are well-trained in the principles of IPM and in safe and effective pesticide use.

Activities for the Coming Year

Activity 1

As a carryover from our 2005 PESP Activity #1, DoD will continue to cooperate with industry in development, testing and fielding of additional pathogen test kits to determine the presence or absence of human pathogens in insect or other arthropod vectors. This year we hope to complete testing to make commercially available kits for leishmania, malaria, dengue, Japanese encephalitis, Rift Valley fever, Ross River virus, and rickettsial diseases.

How does this activity reduce pesticide risk?

In a deployment situation, military personnel survey the area (with various traps) to see if species of mosquitoes or sand flies known to transmit diseases in that region are present. If potential disease vectors are present, we must assume they are infective and use insecticide to minimize the disease risk to personnel. If a field pathogen test kit is available to test the trapped insects to see if they actually are infected, we will know the actual risk to personnel. If the insects are not infective, they may be considered a nuisance instead of a health risk, and we may avoid treatment with insecticide. Pathogen test kits are extremely useful monitoring tools for measuring the public health (disease) risk, which can then be weighed against any risks from pesticide applications.

How will you measure the risk reduction gained from this activity?

Unfortunately, we anticipate many opportunities to field test these kits in the Middle East in 2006-07. Military personnel are also exposed to vector-borne diseases in the U.S. as they work to support the wartime effort or train for deployment. Since we keep records of our surveillance activities as well as our pesticide treatments, once these kits are fielded, we will be able to pinpoint times where pathogens were not detected and insecticides were not applied because no disease prevention was needed.

Activity 2

The DOD Armed Forces Pest Management Board (AFPMB) continues to administer the Deployed Warfighter Protection Program (DWFP), a \$5-million annually, 6-year research program designed to develop new technologies to protect U.S. soldiers from insects that transmit diseases of military significance. The research money is being

awarded to USDA-ARS as well as other government, industry and university groups that submit approved research proposals.

How does this activity reduce pesticide risk?

Most of the current pesticides and repellents registered for public health use in the U.S. are old, and the costs of research and development have discouraged the private sector for investing in new pesticides for the very small public health market. Research grants from this initiative should jump-start development of new, safer, more effective public health pesticides and more efficient pesticide application equipment. Additionally, our cooperative work with EPA through the Public Health Insecticide Consortium will ensure timely and efficient registration of these new technologies.

How will you measure the risk reduction gained from this activity?

Research is a long-term endeavor, and will not yield results for several years. Eventually, it should result in development of new, safer and more effective pesticides and more efficient pesticide application equipment.

Activity 3

As an outcome of 2005 Activity 3, DoD established the Public Health Insecticide Consortium (PHIC). The group consists of representatives from DoD, CDC, NIH, USAID, USDA, National Pest Management Association, Responsible Industry for a Sound Environment, American Mosquito Control Association, and major industries. The consortium is committed to working closely together with the EPA to lower barriers to developing new, more effective, and lower toxicity public health pesticides that are needed to protect health of civilians and military personnel in the U.S. and abroad. DoD is keenly interested in the development of new, safer products, but does not have the economic resources to discover, develop, and register products alone. This year, the PHIC plans to publish its strategy addressing public health insecticide needs to publicize its efforts and garner support. The first priority project, begun in 2005, will be completed upon publication of the strategy in a widely-read, peer-reviewed journal.

How does this activity reduce pesticide risk?

Because the public health pesticide market is very small, there is little economic incentive for corporations to develop lower toxicity products that may replace currently used products. By exploring options and developing a plan overcome this barrier, safer pesticides can be developed and brought to the market.

How will you measure the risk reduction gained from this activity?

Although this activity does not lend itself to a clear metric, any safer and more effective products that can be brought to the market as a result of the efforts of this consortium will clearly reduce risk each time it is used in place of a higher toxicity product. Publication

of these goals and the sound strategies proposed to reach them is the first step of the group's strategic plan to support development of newer, safer products.

Activity 4

DoD has a goal out through FY 2010 that 100% of its installations have a current pest management plan. DoD pest management plans are long-range, comprehensive installation planning documents that establish the strategy and methods for conducting safe, effective, and environmentally sound integrated pest management programs. These plans must be reviewed annually by installation pest management and natural resources personnel, and approved by a higher-headquarters pest management professional

How does this activity reduce pesticide risk?

Pest management plans force installations to plan ahead for how they will address all pest problems. Among other benefits, planning ahead means time to consider the best IPM solution to a given pest problem; gives installation natural resources managers as well as higher headquarters personnel a chance to evaluate proposed solutions; to stock the required supplies and equipment; and to ensure the proper number of applicators are certified or contracted. Planning ahead for pest control reduces pesticide risk.

How will you measure the risk reduction gained from this activity?

DoD has a program in place to annually track the percentage of installations with current pest management plans.

Activity 5

Reducing the amount of active ingredient applied, without increasing the toxicity of the product translates directly into less risk for humans and the environment.

How does this activity reduce pesticide risk?

DoD reduced its total pesticide usage from 892,000 pounds to 389,000 (55%) from 1993 to 2003 and has set a new goal, valid through 2010, to maintain this reduced level without switching to pesticides with higher toxicities.

How will you measure the risk reduction gained from this activity?

We track the annual amount of pesticide active ingredient used by all services in the DoD. The goal will be to stay at or below the achieved reduction usage of 389,000 pounds.

Activity 6

DoD has set a goal, out through 2010, that 100% of its pesticide applicators will be certified, even if they are using only non-restricted use pesticides. For military personnel and government civilians, this means DoD pesticide applicator certification. For stateside contractors, this means a valid state certification. For foreign nationals and contractors at installations overseas, this means completion of a DoD pesticide applicator certification class that does not grant a FIFRA certification

How does this activity reduce pesticide risk?

Training for any type of activity will always reduce the inherent risks of that activity. Certification ensures that applicators will be informed about label requirements, hazard warnings, personal protective measures, application methods, etc., and will therefore reduce the risk of a misapplication or accident. We feel that having all of our applicators well-trained and certified reduces pesticide risk more than anything else we do.

How will you measure the risk reduction gained from this activity?

DoD measures annually the percentage of our pesticide applicators that are certified by keeping records on DoD pest applicators and their certification status.

Activity 7

The DoD recognizes the importance of protecting the military community from risks from unnecessary pesticide exposure. Therefore, the Army Environmental Center (AEC) encourages DoD schools on Army installations to participate in the IPM Star program which provides certification for verified IPM performance. The IPM Star Program is administered by the IPM Institute of North America, Inc. To date, the schools in four Army installations have been awarded this certification for excellent IPM in schools. The AEC has set a goal to achieve IPM Star certification for an additional four installation school systems in the upcoming year.

How does this activity reduce pesticide risk?

The IPM Star program emphasizes strict adherence to principles of IPM to protect children from exposure to pesticides. Schools adopting IPM principles will greatly reduce the amount and toxicity of pesticides used on their property, while still effectively protecting children from insect pests and vectors.

How will you measure the risk reduction gained from this activity?

The IPM Star Program culminates in a formal program evaluation. Successful applicants receive IPM Star Certification, valid for three years. Successful certification of four DoD

school systems in 2006 will be used as the measure for reduced pesticide risk in DoD schools.