

Highlands Soil & Water's PESP Strategy

Describe your Organization's Five-Year Goals Related to Pesticide Risk Reduction

Highlands Soil & Water believes that a successful long-term approach to pesticide risk reduction involves a fundamental change with respect to current agricultural production models. We believe sustainable reductions in pesticide use can be achieved by adopting a production model that focuses on establishing and maintaining a healthy and functioning soil foodweb. Our programs support innovative efforts that enable producers to decrease reliance on pesticides while maintaining or improving economical outcomes. Our strategy is through the use of demonstration trials and scientific observations; we can define the benefits of employing reduced risk alternatives.

In five years, our goal is to have a significant impact on the use of pesticides for the production of strawberries, wine grapes and leafy vegetables. Highlands will assume a leadership role in offering strawberry and vegetable growers viable alternatives for their current use of soil fumigants and fungicides.

In line with the current food safety issues affecting the production of leafy green vegetables in California, in five years Highlands will have demonstrated that through the introduction and maintenance of biological diversity in the soil using non-manure based materials, it is possible to reduce the potential risk of contamination from fecal coli forms.

Highlands will continue to demonstrate the viability of sustainable models of production for wine grapes. In five years, it is our goal to have demonstrated the benefits of such programs exceeds those of conventional cultural practice. One such benefit is the reduction of pesticide use resulting from the maintenance of vigorous vines grown in healthy soil.

Highlands will continue to develop a soil management program for recreational turf and golf courses. Over the past two years it has been demonstrated that programs designed to increase the diversity and function of the soil foodweb have had significant benefits in reducing fertilizer, pesticide and water usage. Our plan is to continue to seek innovative partners in government and industry to further demonstrate and promote alternatives to current pesticide programs.

In 2007 Highlands launched a program (BIO_LIFE) in the Las Vegas Valley that offers homeowners an alternative to conventional fertilizer and pesticide applications. The program is organically based and environmentally sensitive. The program includes updates and newsletters to keep clients aware of issues affecting the health of their residential environment.

What do you envision doing (broadly) to try to resolve your major issues?

A major issue needing to be resolved is the recognition that soil management is the new horizon for IPM. The management of soil microorganisms, soil aggregate structure and nutrient utilization (recycling, retention, availability, etc.) can provide for significant reductions in pesticide use and risk. By expanding the view of IPM to include the soil is its future in agriculture. Highlands is involved in a continual educational process with our clients to emphasize this and provide innovative solutions.

Practical, acceptable and sustainable solutions exist but often contradict conventional practice. The most effective strategy has been to lead by demonstration and education. The down side is the process is slow. Regardless, Highlands has been able to grow and increase the use of alternative programs consistently over the last five years. This has provided field data and testimony that soil management is an important and valuable exercise. Highlands is in the process of building on our prior success and reaching beyond the innovators and into the mainstream of our target industries.

Goal 1 and Tactics

Our first goal is to provide an alternative for strawberry and vegetable producers to their current use of soil fumigants and fungicides. We have the technology and understanding, the challenge is to gain the confidence and acceptance of the market. Through the education of our clients and increasing the awareness of the 'underground' aspects of agriculture, we have been able to create enough interest to have growers try our programs. Because of the success of these efforts, our customers expand their commitment to the programs. Highlands programs have a re-user rate of over 95% within the targeted markets.

The EPA could assist by providing resources to expand our educational efforts within the strawberry and vegetable industries. It is very difficult for a small company such as Highlands to support an educational program that simply responds to the current interests and needs of our existing customers let alone an entire industry.

Our success will be measured in the reduced use of soil fumigants and fungicides by our clients. Currently, it is not unusual for growers to reduce pesticide usage 20-30% annually. The profitability of our clients express both economic and objective measures of the success of the approach.

Goal 2 and Tactics

The goal of addressing food safety within the leafy green industry of California is an example of an approach consistent with the goals and practices of classical IPM.

Eliminating the presence of potential pathogens from the fields where crops are cultivated is an unrealistic goal and would lead to the increased use of pesticides. The approach of creating a field environment that discourages the growth and success of pathogens while at the same time promotes the presence of a diverse and numerous populations of beneficial organisms is a sustainable alternative.

Many of the existing and proposed measures by the industry will have positive effects on food safety within the industry. Little or few resources have been directed towards field sanitation as a function of soil biological diversity. This is an area that requires study and focus. The EPA could assist by increasing the awareness of the benefits of biological diversity in the soil. The EPA could assist by facilitating cooperation with industry organizations and leaders.

Our tactic is: with the assistance of grower cooperators demonstrate the benefits of growing leafy greens in soil that contains a healthy and diverse population of microorganisms. Highlands promotes programs that address soil fertility with a line of materials that are not derived from manure or manure byproducts. We will measure our success by assessing the economic impact upon our clients. Building upon our prior experience we will expand our monitoring to satisfy industry guidelines for the production of safe leafy green vegetables. Reductions in pesticide use will be determined by historical and realtime comparisons.

Goal 3 and Tactics

Many established commercial wine grape production models use pesticides and fertilizers in a manner that can limit the biological diversity of the soil in which they are grown. The result of this is the development of a weakened or unhealthy root system that can be prone to disease. Highlands promotes programs that focus on the lifting of the fertility of the soil by establishing and maintaining a healthy soil foodweb within the vineyard. By elevating plant vigor and vine health, vineyards require fewer applications of pesticides. By conditioning soil, effective weed control can be achieved without the use of pre-emergent herbicides.

We continue to work within the wine grape industry demonstrating the benefits of sustainable farming. The economic impact of such programs has been significant. Along with the observed reduction of use of pesticides comes the increase in yield of high quality juice and wine. The quality differences are complex and often subjective but the results from vineyard 'in house' evaluations has been positive.

The pressures to increase quality production from vineyards is increasing. Sustainable programs focused on managing the vineyard soil offer alternatives to increased use of conventional fertilizers.

Education within the industry is key to promoting sustainable production and reducing the use of pesticides within the industry. The EPA could provide resources to assist with this education.

Goal 4 and Tactics

Highlands has set a goal of having 100 residential properties on an organically based fertility and soil building program in the Las Vegas Valley within twelve months. The equipment and infrastructure has been established to support an organic program in the desert environment. Our test marketing was successful and the focus has been shifted to increasing customers.

The program offers the public a means to control their residential environment and a clear option to the conventional landscape fertilizer program. Landscape is maintained without the use of pesticides. Water usage is drastically reduced.

The goal is to expand the program to schools and government properties. The EPA could assist by facilitating introductions to key individuals seeking alternatives to existing practices and reductions in their use of pesticides, fertilizer and water.