

Scouting a Real Life Experience®

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INTRODUCTION

Consumer demands during the 1990s were for picture-perfect plants. In a baseline study done in 1996, there was a heavy reliance on pesticides and chemicals. New economic, environmental, and regulatory issues are driving growers to explore other environmentally friendly practices. Such practices include scouting (frequent monitoring of the crop) and incorporating biological controls when possible.

Other realities include stronger regulation of water use, increased monitoring of groundwater quality, loss of effective chemicals for pest control, and a greater concern about pesticide application procedures and worker protection standards. At the same time, producers must compete in markets that often support the lowest price structure for finished crops.

The 1996 Food Quality Protection Act, established the goal of having 75% of all crop acreage in the United States under integrated pest management by the year 2000. Once the Food Quality Protection Act is fully implemented, other effective organophosphate and carbamate pesticides may be removed from the market. The loss of Pentac, Vydate, and Temik created a void in pest management programs. The industry was then forced to use less effective chemicals, which often resulted in resistance as well as increases of some minor pests.

While the use of biological controls can be a viable alternative in some situations less than 10% of producers surveyed in the mid-1990s used natural predators to control mites and other pests. In the relentless pursuit of perfection, Florida's ornamental plant industry had become dependent on pesticides. A University of Florida integrated crop management program has reduced the use of chemicals by as much as 60% without compromising the aesthetic quality of crops. A major thrust of the program is utilizing nursery scout training classes as well as an annual pest management up-date program. Other contributions from the team include listservers on biological control and pest alert information and insect information can be found at the following Web site: <www.mrec.ifas.ufl.edu/lso/>.

EXPECTATIONS

Now that you've committed to having a scouting program at your nursery here are some items you need to consider. You should have a general working definition of integrated pest management (IPM) and scouting — the use of a broad range of inter-related cultural, chemical, biological, and other methods of pest control in combination with routine monitoring to produce quality agricultural crops.

Other areas to be incorporated when scouting are cultural requirements for healthy plant growth — if any are out of balance, the plants become stressed and more susceptible to pest and disease problems. Be sure to check on the irrigation — too much or too little stress plants and influences fertility. For fertilization, one needs to know when and how much. Light and temperature levels must be correct. Good air circulation is a must in minimizing plant stress.

Your chemical arsenal should include pesticides, soaps, and oils. Other tools are

in the biological controls category and include predatory insects — good bugs that eat the bad bugs. Beneficial parasitic insects use the bad bugs (pests) to support their next generation. Friendly fungi such as *Paecilomyces fumosoroseus* (PRF) (commercially known as PFR-97 from Olympic Horticultural Products) uses the pest to support itself and eventually smothers the pest or may actually penetrate the pest and use it as a food source. Applying bacteria, such as *Bacillus thuringiensis* (Bt), commercially known as Dipel; the insect eats the Bt which interrupts the insect's eating by paralyzing its intestinal tract. Some well established means of mechanical control include: squishing, squashing, scalding weeds and insects (fire ants) with hot water, and blasting with high-pressured water to remove pests. Discarding a few infected plants is frequently more cost effective than spraying chemicals.

BENEFITS OF SCOUTING

Benefits of scouting are a more efficient pest management program. Chemicals are applied only when needed, matching the appropriate chemical with the pest and its life cycle stage. Other benefits of scouting include avoiding loss of control due to poor chemical coverage, minimizing pest resistance, and early detection of any chemical differences of insect mortality. Benefits of scouting also include the opportunity to use biological control, early detection of phytotoxic reactions and timely sample submission, which can save time and money. All this gives a true sense of security. By scouting you know if your program is working — this allows you to be a good steward of the environment and promotes a positive image of agriculture to the general public.

MYTHS AND REALITIES

One of the myths about IPM and scouting is that you will spray less. This simply is not true. In reality you may spray more because you're monitoring more closely at shorter intervals. Another myth is that IPM is ineffective. With a complete program in place, IPM is highly effective. A third myth is that IPM only uses biological control. In effect all the available tools are utilized — cultural, biological, and chemical.

Realities of IPM and scouting include establishing a damage threshold, based on your customers' requirements and on the ornamental crops grown. You must be committed to scouting and keeping accurate records. Records should include everything from weather and wind to time of day. Records establish seasonal occurrences and heighten a manager's awareness for next year's crop. It is a combination of chemical, biological, and cultural control tactics, which enlarges the arsenal of tools for an effective pest management program.

CONCLUSIONS

In our program, scout training and education began in 1996. A follow-up baseline study is scheduled for 2002 to observe what changes have occurred in the industry since the program's initiation. We can report that there has been up to a 60% decrease in pesticide use by adding scouting to the pest management program. Growers have begun using biological controls in place of routine pesticide applications. Predatory mites, beneficial nematodes, and parasitic wasps are now being used throughout the ornamental industry to control aphids, mites, fungus gnats, mealybugs, and thrips on crops.

For more information on scouting and pests as well as a copy of the PowerPoint presentation of this paper, visit the webpage: <www.mrec.ifas.ufl.edu/lso>.