

GROWERTALKS

Pest Management

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Building a Successful IPM Program

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The end goal for a successful integrated pest management (IPM) program is to build cost-effective, sustainable management strategies that produce high-quality plants. IPM leverages a combination of compatible and effective management options, such as cultural, mechanical, chemical, biological and host resistance. In doing this, growers reduce their reliance on a single option—such as spraying plant protectant products—for the control of pests, weeds and diseases. A successful IPM program is built on the following key components.

Sanitation

Starting clean and staying clean is the best approach any greenhouse or nursery grower can take to successfully produce high-quality plants. Following strict sanitation guidelines to maintain a clean environment minimizes opportunities for introducing pests, diseases, disorders and weeds.

The use of new potting material or properly disinfecting re-used pots and materials helps reduce pathogenic micro-organisms (bacteria and fungi), tiny insects (eggs and pupae), and even weed seed from carrying over between production cycles. Taking the time to properly clean and remove fallen or old plant debris and soil from the entire production area (such as floors, benches and greenhouse walls) will reduce the potential for contamination and subsequent issues.

Scouting

Early detection of pest and disease activity is the foundation of any IPM program, so routine monitoring is essential. Employ adequately trained staff or hire consultants capable of inspecting plants, production areas (benches, floors, walls) and surrounding adjacent areas for the presence of insects, diseases, disorders and weeds. Sticky cards, trap crops and indicator plants are often used to assist with monitoring pest populations and can be useful tools for scouts.

Diagnosis

Use diagnostic resources to properly identify problems (e.g., disease, insect, disorder, etc.). Knowing what pests or diseases you have makes managing them more successful and cost-effective. Selecting products that specifically target the pest, disease or weed can save time and frustration.

Documenting and keeping records of symptoms associated with pests, diseases and disorders will aid in early detection and successful control in future crops. You're much more likely to be cost-effective when making informed management decisions as opposed to guessing.

Planning

Information gained from routine scouting—such as disease incidence and severity, insect counts and weeds—should be used to create a management plan. A successful management plan should account for the pressures obtained from the scouting report, including product choices and the type of application needed (i.e., drench vs. foliar spray) and the frequency of application to control the issue. The ability to quickly identify areas or crops that could be the initial source of inoculum for disease, insect hot spots or weed infestations is crucial for adequate control.

Best management practices

In addition to cost efficiency, IPM programs should have a reduced impact on the environment. As a result, implementing a successful IPM approach in the greenhouse or nursery relies on the proper and judicious use of pesticides and fertilizers. Bayer recognizes the need for reduced risk pesticides (such as Altus) and their compatibility with beneficial insects used for pest control.

Integrated solutions

IPM programs should incorporate a variety of tactics to ensure high-quality plants, including:

- **Cultural practices:** An adjustment to soil pH or fertility can correct many disorders, along with constant monitoring and adjusting of irrigation to minimize the conditions favorable for pests and diseases.
- **Mechanical strategies:** These include activities like the removal of diseased tissue to reduce pathogen inoculum or installing screens to inhibit insects and mites from entering production areas.
- **Conventional solutions:** The use of conventional pesticides to control insects, diseases and weeds.
- **Biological controls:** The use of biological-based pesticides or the release of natural insect predators can and should be used in conjunction with traditional chemical controls in a successful IPM program.

Compatibility

When building out an agronomic plan, it's critical to understand which products are compatible with biologicals and natural predators.

Research conducted by Dr. Lance Osborne at the University of Florida, for example, determined that Altus insecticide can be used as both a drench and a foliar spray with the predatory mite *Amblyseius swirskii* for increased control of MED whiteflies. In addition, Dr. Osborne determined that drench applications of Altus were compatible with the whitefly parasitoid *Eretmocerus eremicus* for control of the MED whitefly. These are good examples of how conventional pesticides have been shown to be compatible with living predators.

As the awareness and use of biologicals and other IPM strategies continues to increase, we stand to gain even more practical knowledge to help build successful, cost-effective programs. Be sure to consult experienced users, manufacturers and especially suppliers for information on product compatibility and any potential side effects that may occur following an application. **GT**

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