

## **Making Pennsylvania's Greenhouse Industry More Profitable!**

### **A Rapidly Expanding PA Industry**

The ornamental greenhouse industry has experienced tremendous growth in the last ten years. The floriculture component alone is worth \$158 million to the state with approximately 23.4 million square feet in production. In 1999, PA was ranked sixth in the US in square feet of greenhouse production. In addition, the value of greenhouse vegetable production is approaching \$37 million per year.

Greenhouses (and the developing high-tunnel system) allow growers to extend the growing season to serve urban and suburban markets with fresh, locally produced food and plants.

### **What is Being Done in PA?**

The Pennsylvania Department of Agriculture (PDA) and the Pennsylvania State University (PSU) through their collaboration Pennsylvania Integrated Pest Management Program (PAIMP) are piloting a unique program to help growers adopt IPM in their greenhouses. PAIMP is providing one-on-one instruction for greenhouse growers about various aspects of IPM including pest monitoring, biological control, starter plant inspection and proper pesticide selection. In addition, the pilot program provides training for PDA plant inspectors, cooperative extension personnel and others so that the greenhouse IPM message can be carried across the state.

### **Why is IPM Important?**

In addition to maintaining structures and raising plants, greenhouse growers have to contend with a host of insects, diseases and weeds. Over the last decade, reduced pesticides registrations have removed pesticides from the market that growers had traditionally used to fight pests. Regulations such as Worker Protection and the Food Quality Protection Act put pressure on growers to consider alternatives to traditional pesticide use.

Integrated Pest Management (IPM) provides a framework to institute these pest management changes. IPM is the smart way to manage pests, employing systematic crop inspections and knowledge of pest habits to make effective management decisions. These decisions generally result in lower pest damage, reduced pesticide use and increased profits.

IPM also accommodates new technologies and alternatives. One of the alternatives, biological control (using good bugs to get rid of bad bugs) has been particularly successful in the state.

### **The IPM Approach**

- Practice Prevention - many pest problems can be stopped before they start with proper prevention techniques.

- Proper Pest Identification - many insects can be found in the greenhouse but not all of them are pests.  
One example of successful biocontrol is the Encarsia Formosa parasite for control of greenhouse whitefly.
- Threat Assessment - are there enough pests present to worry about them?
- Tactic Selection - what type of management activity is necessary? Will biological control work? Are pesticides needed?
- Record Keeping - what has worked in the past? What has failed? What strategy saved money? What reduced pesticide use?
- Results Evaluation - was the management action successful? Do I need to do anything else?

### **What Needs to Happen Next?**

The successful demonstration in the pilot project and the benefits provided to the participating greenhouse growers should be made available throughout the state. This will require the continued presence of a greenhouse IPM expert with the time committed to working with individual growers and teaching other PDA and PSU personnel.

### **Benefits to Greenhouse Operators**

- Up to 50% or greater reduction in traditional pesticide use.
- Easier for growers to comply with Worker Protection Standards.
- Greater understanding of pest biology, greenhouse IPM and alternative control methods.
- Exposure of future greenhouse managers to IPM methods.
- Increased marketing options, such as “organic labels,” yield greater profit potential.

### **Grower Testimonials**

"IPM has become a permanent program at Bucknell University, impacting other areas of the university as well as the community" - Flora Eyster, Greenhouse Manager.

"Our transition to using IPM techniques has resulted in a drastic drop in our pesticide use. We have a safer, more accessible facility for student use" - Lana Baker, Pennsylvania College of Technology

"When using IPM we have a lot of peace of mind by reducing our dependence on chemicals" - Boyd Mertz, greenhouse tomato grower.