Growers and University Researchers Discuss Pest Management for Nursery Crops

Authors: Rosemary Hallberg, Communication Specialist, Southern Region IPM Center;
Amy Fulcher, Extension Associate for Nursery Crops, Department of Horticulture, University of Kentucky;
Joe Neal, Professor, Department of Horticultural Science, NC State University;
Kelly Ivors, Assistant Professor, Department of Plant Pathology, NC State University;
Anthony LeBude, Assistant Professor, Department of Horticultural Science, NC State University;
Steven Frank, Assistant Professor, Department of Entomology, NC State University

Phytophthora ramorum is a tragedy in the forest. In a nursery, it's deadly. So when a group of ornamental growers, university researchers, Extension professionals, and others in the nursery industry met together to talk about the most serious pests, *P. ramorum* (cause of sudden oak death) was at the top of the list.

The list of primary pests will be part of a new document called a "pest management strategic plan." Pest management strategic plans are usually commodity-driven, listing primary insects, weeds and diseases, ways to control them, pest management challenges, and ways that researchers, educators and regulatory agencies can help the industry.

To facilitate dialog and create content for the plan, growers and others met during a pest management strategic planning workshop at the Mountain Horticultural Crops Research & Extension Center in Mills River, North Carolina in late July. Participants represented the woody plant ornamental industry from five southeastern states as well as the land grant university faculty charged with helping the nursery industry.

When asked about their use of integrated pest management, many growers expressed frustration about consumer expectations for the "perfect" plant. Growers shared their desires and efforts to reduce the amount of pesticides they use, but felt consumer expectations made that challenging.

Integrated pest management includes pesticides as part of a package of pest management strategies but does not rely solely on the use of pesticides to control pests.

"We try not to spray any more than we have to," said one grower. Others added that they focus their pest management efforts only on the plants they are selling that year.

Growers face yearly battles with insect pests. Of all of the insects that growers face, scale, borers, and mites are the hardest to control. Many growers requested information on how they can implement IPM methods efficiently and profitably to control those pests.

Growers listed *P. ramorum* as the worst disease. Although some growers chlorinate their irrigation water to prevent Phytophthora diseases including *P. ramorum*, the treatment is expensive, and growers with smaller nurseries often can't afford to treat their water. Growers asked researchers for more information on ways to sanitize water that controls diseases caused by pathogens like *P. ramorum*.

The biggest weed problems in nurseries? That depends on the nursery. In field production it is nutsedge – a perennial weed that is not controlled well by most herbicides labeled for use in nurseries and is spread by cultivation. Container nurseries have very different weed populations, with spurge and bittercress being the dominant (and most costly) species. One central theme from growers was a desire to have more cost-effective weed management

The group discusses their thoughts on the PMSP during a barbecue lunch at the end of the meeting.

Continued on next page

Nursery Crops PMSP (continued from previous page)

options – using knowledge and new technologies such as greater longevity of residual control, more postemergence options, and access to better tools and decision aids.

Amy Fulcher, Extension Associate from the University of Kentucky, said the plan that will result from the discussions at the meeting will be a good resource for the nursery crop industry. The research and Extension attendees recently formed a collaborative working group to design and implement strategies that control pests by using IPM.

"We now have a comprehensive needs assessment and a clearly defined set of priorities about how to advance pest management for Southeastern nursery growers," she said.

Nursery Crops PMSP: Priorities for the Industry

Insect Issues

Most Important Insects:

- Boring insects
- Scale
- Mites

Research Needs for Insect Pests:

- Influence of production practices on insect outbreaks and complexes
- Biology of granulate ambrosia beetle, mites, and armored scales
- Practices to manage the pest complexes to consolidate insecticide applications

Extension Needs for Insect Pests:

- Develop monitoring techniques and thresholds
- Organize scales into groups and give control based on the group
- Education on the effects of stress and production practices on insect problems

Disease Issues

Most Important Diseases:

- *Phytophthora ramorum*, *Rhizoctonia*, and *Pythium* root rots
- Fungal leaf spots
- Powdery mildew

Research Needs for Diseases:

- Sanitizing irrigation water
- Field diagnostics for bacterial and fungal diseases
- Relationship between irrigation, fertilization and diseases

Extension Needs for Diseases:

- Efficacy tables for fungicides/diseases

Weed Issues (field and container)

Most Important Weeds:

- Spurge
- Bittercress
- Yellow nutsedge
- Horseweed (glyphosate resistant)
- Crabgrass

Research Needs for Weeds:

- Technologies for extended longevity of weed control
- Selective weed management options
- Cost analysis of weed management options and systems

Extension Needs for Weeds:

- Develop economic thresholds
- Education on herbicide-resistant weeds
- Education on avoiding crop damage from herbicides

Overall Needs

- Regional website and/or manual with cultural and pest control information
- Research on cost-effective IPM systems
- Pest ID and management resource development