

Title of project: Nursery IPM Practices - Survey

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Abstract: A survey of New York Nursery growers was conducted in 2007 to assess current cultural and pest management practices. Nearly 150 growers responded to a series of questions regarding production systems, pest problems, management approaches, information and training sources and educational needs. The results indicate an opportunity and interest on the growers' behalf to provide IPM information particularly around pest identification, and biological control. There also appear to be opportunities to increase knowledge of the timing of controls and access to good decision making resources.

Justification: Tree, shrub and perennial nursery growers represent an important portion of the ornamental industry in NY served by the NYSIPM Ornamentals Team. Data on pest management issues and practices will be used to set future research and extension priorities for programming and facilitate impact measurement.

Objectives: To gather baseline data on various aspects of Nursery IPM in NY and aid in the selection of research projects and educational programs that will have the most impact.

Procedures: A survey instrument based on the Greenhouse IPM Practices survey of 2000 was modified by the project leaders to fit the specifics of nursery production. The National Agricultural Statistics Service (NASS) NY office was contracted to carry out the survey. Surveys were mailed to 500 NY growers (approximately 30% of the nursery owners on the NASS list) with follow-up phone calls made to those who did not respond initially. 147 growers completed the survey either through the mail or telephone interviews. Project leaders summarized the survey results from the raw data supplied by NASS. This summary will be used by the NYSIPM Ornamentals team to guide future activities. Results will also be made available to NY Extension and growers through the NY IPM Ornamentals e-Newsletter.

Results:

The Crops:

Evergreens trees were the most commonly grown nursery crop with 65% reporting they grow conifers. Many of the operations also sold these evergreens as Christmas trees. Deciduous trees (31%), perennials (18%) and shrubs (11%) rounded out their nursery land. A diversity of crops on many operations was also noted, with 31% reporting growing other farm crops such as fruit and vegetables.

About the Growers' Nurseries and practices:

In this survey 53% of growers were growing in an area of an acre or more. The most common production system was field grown, followed by container and pot-in-pot. Only 24% reported having a greenhouse as a part of their nursery operation.

The majority (57%) have never tested their water (for carbonates, pH etc.). When asked "how often do you calibrate your sprayers?" 46% responded never, 35% have calibrated once and 27% do it each year.

63% scout their nursery for pests. For 94% it is the owner who does the scouting and 55% do this whenever they are in the nursery, however 24% report scouting just when they have a pest problem.

About 60% get their pest management information from Cornell Extension sources. The internet, ranked second at 28% and pesticide sales reps and other growers were each used less than 15%. Only 18% have Cornell's Guidelines to the Pest Management of Trees and Shrubs and only 10% have the Guidelines for Perennial Production.

Cornell Extension programs were attended by 31% and industry conferences were attended by 14%. With 51%, disease/insect and weed ID led the "What would you like to learn more about?" category followed by IPM (41%) and biological control (39%).

Their Pest Problems:

Insects: Aphids, caterpillars and mites were those reported as most commonly occurring. Ranking at the top of those considered most difficult to control, were aphids, borers and pine shoot tip moths.

For insect management practices 37% report choosing resistant plant material and 9% have a quarantine area. Traps and other devices to monitor insect pests were used by 18%. Microbial insect controls were used by 8% of the respondents and 26% report applying or encouraging beneficials for biological control.

The most common response to the question "What indicators do you use to determine when to apply insecticides?" was the presence of insects (52%). Few use growing degree days (6%) or phenology (4%) to determine when to control insects. The calendar basis is used by 16% to determine when to apply insecticides.

Diseases: Ranking at the top were powdery and downy mildews, needlecasts and fungal leaf spots. Those considered most difficult to control were powdery mildew and the needlecast diseases.

For disease management practices, the majority (69%) reported that they remove diseased leaves, branches or plants to reduce infections. 64% percent report spacing plants to allow for adequate air-flow between plants. Few, (11%), report having a quarantine area for newly acquired plant material.

The most common response to the question "What indicators do you use to determine when to apply fungicides or bactericides?" was the presence of disease symptoms (42%). Growing degree days (8%) or phenology (4%) are not commonly used for disease control.

Weeds: The four that made the top of the list of the most commonly occurring were: crabgrass, chickweed, nutsedge and wood sorrel. Crabgrass was at the top of the list of those considered most difficult to control.

Of the non-herbicide weed management options, mowing between the rows was the most common technique with 63%, followed by removing weeds within plant rows at 48%. Only 15% report identifying weed species before treating.

Implications: The highest numbers of most difficult to control pests came in the insect category, including aphids, borers, pine tip/ shoot moths and mites. Powdery mildews, ranked high as a difficult to control disease and crabgrass is the most challenging weed. Following up to find out in which crops and growing system these pests are a problem will help determine the research and extension possibilities to address these problems.

This survey of nurseries identified priority areas in which trainings seem most needed. These include: pest ID, application timing techniques, and calibration. In addition there is interest in both IPM and biological control topics. And finally there is an opportunity to increase grower knowledge of pest management decision making resources such as the Guidelines for pest management.