

# The Lake County Nursery IPM Program

*Randall H. Zondag, Daniel A. Herms, Charles R. Krause,  
Heping Zhu, Michael E. Reding, and Ross D. Brazee*

Most nurseries are small companies that produce large numbers of crops on limited acreage. These operations deal with a multitude of plant pest, disease, weed, and cultural issues, and they must also take into account worker safety as well as environmental and economic issues. The nursery growers in Lake County, Ohio, asked Ohio State University Extension to work with them over a long term to together help address these issues.

We started the Lake County Integrated Pest Management (IPM) program by developing a prioritized list of key problems. Specialists with knowledge and resources in the area were asked to help growers identify and develop management plans to handle these problems. Growers meet with researchers, Extension professionals, and pest-management product producers every two weeks during the growing season and monthly throughout the rest of the season.

These meetings provided a place for everyone to learn, discuss, and exchange

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*Randall H. Zondag, Ohio State University Extension, Lake County; Daniel A. Herms, Department of Entomology, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster; Charles R. Krause, Application Technology Research Unit (ATRU), U.S. Department of Agriculture-Agricultural Research Service (USDA-ARS), Wooster, Ohio; Heping Zhu, ATRU, USDA-ARS, Wooster, Ohio; Michael E. Reding, USDA-ATRU, OARDC, OSU, Wooster; Ross D. Brazee, USDA-ARS, Spray Technology, Wooster, Ohio.*

information. This article outlines some of the key products of those meetings.

This Nursery IPM program is a cooperative effort between the nursery industry in Lake County, Ohio State University Extension (OSUE), the U.S. Department of Agriculture-Agricultural Research Service (USDA-ARS), and the Ohio State University Ohio Agricultural Research and Development Center (OSU/OARDC).

## Tools Introduced by This Program

This program teaches growers how to scout for pests by looking at a key plant/key pest process. During the growing season, specialists and educators meet with growers to help them identify pest life cycles, level of economic control, and best methods for control.

These regular meetings give growers the chance to suggest new topics for researchers to investigate as well as provide an opportunity for researchers to provide information on new methods for controlling pests. Growers were also schooled on both cultural and biological control options they could be using.

Dan Herms has developed a phenology calendar that gives growers estimated degree days by zip code, allowing for predicted emergence times of insect pests.

(See also: *Biological Calendars: The Statewide Network of OSU Phenology Gardens* in this publication.) This program is linked to the Lake County Extension and the nursery growers web site. From a computer screen, growers were able to look at what was present as well as what could be predicted to emerge soon.

The U.S. Department of Agriculture-Agricultural Research Service placed two weather stations in Lake County that give growers real-time information on temperature, humidity, wind speed, rainfall, and soil moisture. This information was archived so growers would have the ability to look at past trends in making decisions on irrigation, pest potential, and reapplication of products, if needed. This information is available to growers at web sites in our county in real time.

USDA-ARS developed a leaf wetness chart, showing growers how long leaves stay saturated. This information, along with archived information on air temperatures, is a useful tool in determining infection periods for plant pathogens and subsequent disease-control decisions.

This information gives growers an understanding of when rainfall occurs compared to moisture development from humidity on plants. This is useful in helping growers determine when some products are no longer effective in disease control. The information is updated every three hours and can be found on local web sites in the county.

Through grants from OSU, OARDC, and USDA, growers were provided with new methods for detecting pest presence. New pheromone, color, sticky, and light traps helped growers identify pest presence before the pests reach populations that might cause major damage.

Scouts shared information they found and demonstrated how to use these traps at grower meetings. Researchers worked with growers to determine if new traps would be successful in an IPM program.

USDA-ARS and OSU educators worked with growers to determine if spray equipment was achieving the coverage desired by growers. Classes were dedicated to helping applicators do hands-on calibration of both hydraulic and air-blast sprayers. Growers then had to evaluate coverage of crops using U-V sensitive dyes.

The teams learned what they could do to improve sprayer coverage. Classes were involved in looking at new spray technology that growers could purchase to improve control of pests. Trial work was conducted in the use of systemic pesticides to control pests and improve worker safety.

OSU and USDA professionals conducted trials on determining pest life cycles and new products to control these pests. These trials are best conducted in nursery settings using scientific methods. These trials have led to the labeling of several new pesticides. The IR-4 program helped provide funding to run trials of new products that otherwise would not have been considered.

## Summary

The Nursery IPM program is a cooperative effort between the nursery industry in Lake County, Ohio State University Extension, USDA's Agricultural Research Service, and Ohio State's Ohio Agricultural Research and Development Center. Industry input is needed, and without it, the program would fail.

The program provides an environment where growers can interact with

researchers and participate in an environment for exchange.

New technology and information are provided in a timely manner so it can be used by growers in making control decisions. Access to the web site, weather stations, and phenology calendars further enhance a grower's ability to make good decisions. Growers in turn help researchers by providing access to trial sites and pest populations needed for

research. The success of the program is growers supporting researchers along with researchers wanting to help the growers.

This is a model that can be repeated with almost any commodity group in agriculture. IPM requires an industry that will be willing to adapt new technology if it is proven to be better than current practices. We have been fortunate in Lake County to have top researchers working with an industry that wants to be a leader.

