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The IR-4 Ornamental Horticulture Program: What, How, and Why[®]

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WHAT IS IR-4?

The IR-4 Project works with growers, researchers, registrants, and regulatory agencies to develop research data so that new products can be registered and new crops, diseases, insects, and weeds can be added to existing product labels. The IR-4 Ornamental Horticulture Program, one of several programs under the IR-4 project, develops information for non-edible specialty crops grown in greenhouses, nurseries, landscapes, Christmas tree farms, and forestry production nurseries.

The IR-4 Ornamental Horticulture Program is supported by two major funding sources: the USDA Agricultural Research Service (ARS) and the USDA Cooperative State Research, Education, and Extension Service (CSREES). The ARS research staff conducts research trials across all pest disciplines and is critical in the effort to provide pest solutions to the green industry. The funding provided by CSREES typically supports research through the state university and State Experiment Station systems.

The CSREES has four regions utilized by IR-4 to coordinate its research efforts — Northeast, North Central, Southern, and Western. The IR-4 headquarters operation is located at Rutgers University in New Jersey. All of these units operate independently under the umbrella of the Project Management Committee (PMC), which has members from each of the units, ARS, and CREES (Fig. 1). Each regional coordinator is based at one of the land-grant universities: Cornell University, Michigan State University, University of California-Davis, and University of Florida. These regional coordinators place research trials with experts in entomology, plant pathology, weed science, and plant growth regulators.

HOW DOES IR-4 WORK?

Identify Grower Needs. The first step for IR-4 to select research projects is to determine the most pressing disease, insect, and weed problems facing growers and landscape professionals. IR-4 solicits input on these issues in several ways. Growers, researchers, and extension personnel can fill out project request forms and submit them to either their regional coordinator or State Liaison Representative, or to the ornamental horticulture program manager via a web-based form. Growers, researchers, and extension personnel can also complete an annual survey to determine which diseases, insects, and weeds are the most problematic, meaning they may not be easily or economically managed with current products.

The 2006 grower/extension survey started 2 June and ended 1 Sept. There were 337 participants this year: 236 growers, 20 landscape care professionals, 70 researchers and extension agents, and 11 allied-industry professionals. People who took the survey ranked 13 different research needs on a scale of 0 (no importance) to 5 (very high importance) and then listed the top three disease, insect, and weed problems

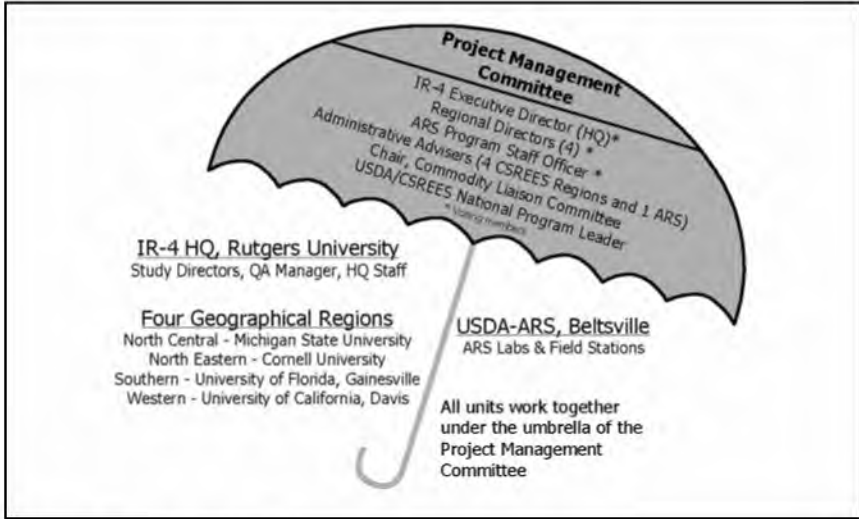


Figure 1. The structure of IR-4.

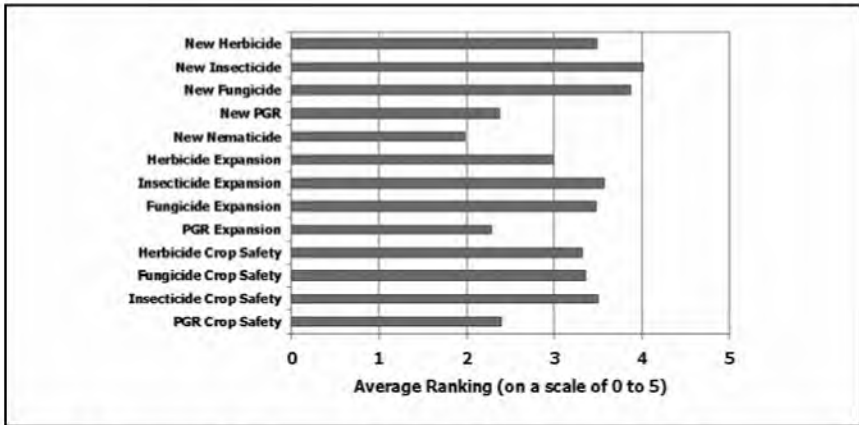


Figure 2. Growers and landscape care professionals rank research needs.

where product choices are limited. The research need with the highest average was new insecticide products followed closely by new fungicides (Fig. 2). The top 5 diseases mentioned were *Phytophthora*, *Botrytis*, powdery mildew, *Rhizoctonia*, and downy mildew. The top 5 insects listed were thrips, whiteflies, scales, mealybugs, and spider mites. The top five weed problems were *Euphorbia* sp. and *Chamaesyce* sp. (spurge), *Cardamine* (bittercress), *Cyperus* (nutsedge), *Oxalis*, and *Eclipta*.

Annual Workshop. At the annual workshop, attendees discuss the major pest issues and assign each a priority for research within the IR-4 Program during the following year. The survey results and submitted project requests have the most

influence in establishing the research direction. In general, those diseases, insects, and weeds without registered products are ranked higher than those that can be controlled with commercially available products. There may be situations where the survey and project requests point to a certain research direction, but workshop participants select other diseases, insects, or weeds as the high priority projects. For example, there may be a great need for new products to control a certain disease or pest, but at the time of the workshop there are no new, unregistered products to put into a testing program. Another example where the research direction may be different from the annual survey is a situation where IR-4 has sponsored research into a product not yet registered for ornamental horticulture uses and additional data would not greatly increase the speed of registration or breadth of the product label. Finally, sometimes there can be a lengthy gap between when research is conducted and when the resulting information is used either for extension presentations, technical updates, or label registrations for grower-identified needs.

Research Priorities for 2007. Attendees at the 2006 IR-4 Ornamental Horticulture Program Workshop selected several high priority projects for research in 2007. The two entomological projects were thrips and anything coleopteran (borers, beetles, white grubs, and root weevils), a continuation of the 2006 research priorities. For plant pathology, the ongoing *Phytophthora* and *Pythium* efficacy projects were continued. Workshop attendees committed to two new projects dealing with sedge efficacy and crop safety of products for sedge control along with finishing the 2006 project on crop safety of Sedgehammer, Sulfentrazone, SureGuard, and V-10142 on select ornamental horticulture plants.

Establishing the Research Program. After the high priority projects have been established, the regional coordinators place trials with university researchers and private contractors. These researchers help write the protocols so that the resulting data are meaningful for both growers and the manufacturers registering the products.

Data Summaries and Distribution to Manufacturers. After the researchers have completed their trials, they send the data to their regional coordinators who in turn send it to the ornamental horticulture program manager. The data for each high priority project are summarized into a single report, which is sent to each manufacturer with products in the testing program. These reports can be submitted to federal or state registration officials. The summary report is also posted to the IR-4 website where it is available to anyone interested in reading the results.

WHY IR-4 IS IMPORTANT FOR GROWERS?

The IR-4 program is the only government-sponsored organization that has a mission to listen to and address growers' needs by collecting data, which will lead to registered products with state and federal agencies. In fact, IR-4 has worked to obtain product registrations for growers of food crops for more than 40 years and has facilitated collection of data important to ornamentals growers for almost 30 years. The IR-4 project can serve as an advocate for growers with manufacturers so that products can be tested and then labeled for certain diseases, insects, and weeds. Finally, the IR-4 ornamental horticulture program website can become a source of comparative efficacy and crop safety information so that growers and landscape care professionals can more effectively make decisions about which products to use.

WHO TO CONTACT AT IR-4.

For more information about the IR-4 Ornamental Horticulture Program, contact Cristi Palmer at 732-932-9575 extension 4629 or visit the website at <www.ir4.rutgers.edu>. A Regional Coordinator can also help those who wish to learn more about studies in a particular region. Regional Coordinators can be contacted at: Northeast Region – Edith Lurvey, 315-787-2308, Email: ell10@cornell.edu; North Central Region – Satoru Miyazaki, 517-336-4611, email: ncrir4@msu.edu; Southern Region – Charles Meister, 352-392-2399, email: cmeister@ifas.ufl.edu; Western Region – Rebecca Sisco, 530-752-7634, email: rsisco@ucdavis.edu; and USDA-ARS Office of Minor Use Pesticides – Paul Schwartz, 301-504-8256, email: schwartz@ba.ars.usda.gov.