



# IAPPS NEWSLETTER

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## Contents:

- [IR-4: A PROGRAM IN THE UNITED STATES THAT INCREASES PEST CONTROL OPTIONS FOR MINOR CROPS](#)
  - [INFORMATION SOURCE ON SUSTAINABLE FARMING IN THE UNITED STATES](#)
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## **IR-4: A PROGRAM IN THE UNITED STATES THAT INCREASES PEST CONTROL OPTIONS FOR MINOR CROPS**

**HISTORY.** Crop producers have depended upon the agricultural chemical industry to provide them with safe and effective chemicals that supplement their pest control practices to maintain crop yields and protect the health of animals. As the costs of meeting regulatory requirements increased, crop protection registrants concentrated their registration efforts so they could obtain sufficient economic returns to justify their research and development costs. This resulted in greater registrations of products for the large acreage crops such as maize, cotton, soybeans and wheat, and fewer registrations for minor crops as well as minor uses. A minor crop is defined as any crop grown on 300,000 acres or less. This includes most vegetables, fruits, nuts, herbs, spices, nursery and landscape plants and flowers. Almost all food crops are minor crops except for the large acreage crops like maize, soybeans, wheat, oats, rice and cotton. Minor crops account for over 40 billion U.S. dollars in annual sales, which is about forty percent of the total agri-cultural sales for the U.S. Minor uses also involve limited pest control treatments to the large acreage crops due to localized or sporadic pest problems.

Lack of available pest control products for minor food crops is not new. Directors of state agricultural experiment stations recognized the problem in 1963. Working with the U.S. Department of Agriculture (USDA), they organized the Interregional Research Project No. 4, commonly known as IR-4, to help minor crop producers obtain tolerances and registrations for pest control products. IR-4 is called the "minor use" program. It is a government and university sponsored program to develop the data necessary for submitting minor crop pest control options to the Environmental Protection Agency (EPA) for approval. Through the years IR-4's mission has expanded to include ornamentals and biopesticides (including microbials such as bacteria and viruses, and biochemicals such as pheromones and growth regulators), but the goal has remained the same, which is to provide pest management solutions to minor crop growers. Since the Food Quality Protection Act (FQPA), which was enacted in 1996, threatens to restrict or eliminate many long-standing pest control products, IR-4 is focusing on "reduced risk" and safer chemistry to ensure that producers of minor crops have an adequate toolbox of pest control products, both traditional pesticides and biopesticides. IR-4 works with farmers, agricultural scientists, commodity organizations and extension personnel to provide pest management solutions to growers of minor crops. IR-4 receives major funding from two of the USDA agencies: the Cooperative State Research, Education and Extension Service and the Agricultural Research Service.

**THE PROCESS.** Pest management needs, in the form of clearance requests, are initiated by individual growers, grower organizations, nurserymen, agricultural scientists and extension personnel. A Pesticide Clearance Request (PCR) form is submitted to IR-4, and a selection process begins for the projects that will be studied. Each PCR is reviewed regionally as well as nationally at the IR-4 sponsored Food Use and Ornamentals Workshops. State and federal minor crop pest control experts, growers, commodity organizations and representatives from EPA and industry attend the workshops and set research priorities. Priorities are developed, based on the importance of the pest problem, the availability of alternatives, the existence of data gaps, and the value to integrated pest management programs. Only high priority projects are slated for research. IR-4's work is limited to field testing for effectiveness against the target pest, testing for crop safety, and residue analysis for food crops. Thus, IR-4 must check to ensure that all the necessary core data requirements, such as chemistry, toxicology and environmental fate, have been completed by an agricultural registrant and accepted by EPA. The registrant's review determines whether data gaps exist that may create delays in reviewing and approving IR-4 petitions for tolerance or exemptions. The registrant must then agree to support the proposed use. This allows IR-4 to focus resources on projects with the greatest likelihood of successful completion.

Each research project begins when the research outline, called protocol, is written and approved. All phases of research from this point forward are conducted according to Good Laboratory Practice (GLP) requirements mandated by EPA. The research process is rigorous. State and federal agricultural scientists conduct the field research phase. The numbers and location of the research

trials, predetermined by EPA, relates to the important production areas for the crop (see Food and Feed crops of the United States for specifics on test locations and crop groupings). During the field research phase, pest control products are tested on the specific crop or crop grouping for plant safety and effectiveness. Field samples of food crops are sent to labs where they are analyzed for magnitude of pesticide residues. IR-4 quality assurance personnel frequently inspect and monitor the field and laboratory research to assist the project in the GLP compliance assessment.

All of the data generated during the field and laboratory phases of research are sent to IR-4 Headquarters. The data are critically reviewed by scientists at IR-4 and written in final format for submission to EPA. For food crops, the final format is a petition request for either the establishment of a tolerance or an exemption from the tolerance requirement. A tolerance is the safe, legally allowable maximum amount of pesticide residue on a crop following treatment. Ornamentals, both conventional chemical and biopesticide data packages, do not require residue tolerance information. All petitions are reviewed one last time by the registrants before they are submitted to EPA. The time from study initiation to petition or data package submission is 30 months for the highest priority projects.

EPA reviews the IR-4 petitions and data packages, and when EPA approves a petition, a Notice, followed by a Final Rule, is published in the Federal Register. The time frame for EPA approval can range from three months to two years or more. Registration follows after the registrant requests EPA's approval of the specific directions for use which will appear on the label. The product may be made available for national use, be confined to a limited geographical region, or be identified for Special Local Need (24c) in a specific state or states.

**ACCOMPLISHMENTS.** IR-4's success can be measured by the large number of minor crop pest control clearances established or retained as a result of IR-4's efforts. Over 5500 food-use clearances, over 8800 ornamental clearances and over 150 biopesticide clearances have been established since 1963. This quantity is over 40% of the total number of clearances granted by EPA.

To learn more about IR-4, visit their website at: <http://www.cook.rutgers.edu/~ir4>

#### **INFORMATION SOURCE ON SUSTAINABLE FARMING IN THE UNITED STATES**

A nation-wide sustainable farming information center called Appropriate Technology Transfer for Rural Areas (ATTRA) provides a wealth of information that may have applications beyond the U.S. Funded by the U.S. Department of Agriculture and located at the University of Arkansas, ATTRA has been a primary source of sustainable agriculture information to farmers and others in commercial agriculture since 1987. ATTRA addresses topics relating to sustainable agriculture, alternative crop and livestock enterprises, organic farming, and related topics. Pest management, especially Integrated Pest Management with an emphasis on the use of non-toxic pest management tools, is a major topic. Many resources can be accessed through the web page of this organization. The publications are largely compiled in response to requests from farmers. Of particular interest to those in the area of pest management are the publications in the Pest Management Series and those in the Horticulture Series. You may learn more about this organization and access their publications through their web site: <http://www.attra.org>

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IAAPS Mission: to provide a global forum for the purpose of identifying, evaluating, integrating, and promoting plant protection concepts, technologies, and policies that are economically, environmentally, and socially acceptable.

It seeks to provide a global umbrella for the plant protection sciences to facilitate and promote the application of the Integrated Pest Management (IPM) approach to a the world's crop and forest ecosystems.

The *IAPPS Newsletter* welcomes news, letters, and other items of interest from individuals and organizations. Address correspondence and information to:

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