

COORDINATING INTEGRATED PEST MANAGEMENT RESEARCH & EXTENSION PROGRAMS FOR THE WESTERN U.S.

Integrated pest management (IPM) attempts to provide sustainable, long-term pest prevention and control while minimizing risks to people and the environment. IPM involves a combination of pest control techniques such as modifying habitats, changing farming practices, releasing natural predators, and growing resistant crop varieties. This type of pest management is vital to agricultural productivity, environmental quality, and human health.

Due to budget cuts and shrinking resources, individual states and institutions in the western U.S. have fewer researchers and Extension specialists available to address the increasing number and diversity of requests for help with pests. To make the most of limited resources, western land-grant universities are working together to coordinate their IPM research and Extension efforts and align with regional priorities.

Improved communication and coordination has led to region-wide research collaborations, repositories of shared tools and resources, sustainable funding sources, and successful leveraging strategies that help support IPM personnel and activities. Regional coordination also makes it easier to share cohesive messages about IPM strategies with wider audiences, including regional policymakers.



Volunteers gather insects that can keep toadflax weeds in check in Montana. Photo by Steve Elliott/Western IPM Center.

WESTERN IPM RESEARCH & EXTENSION PROGRAMS ARE HAVING IMPACTS.

PEST CONTROL TRAINING & EDUCATION

- Hawaii Extension taught farmers with limited English skills and farming experience how to protect workers, food safety, and the environment. The Local Immigrant Farmer Education program taught immigrant farmers about crop production, business planning, marketing, and risk management strategies that will make their farms more viable.
- Arizona Extension continuing education programs help pest control professionals maintain their licenses and use the safest, most effective practices. Companies who participated in the programs say at least 10% of their growth in 2012 (nearly \$100,000) was related to what they learned. This growth has increased company sustainability and competitiveness.
- Through a Montana State University Extension program, pest control professionals in Montana can receive training to be Certified Urban IPM Practitioners. This program ensures that practitioners are using the most up-to-date strategies and tools, and certification helps practitioners attract clients. Alaska recently adapted this program for their state's needs.
- Hawaii Extension trainings helped 30 farmers with over 170 acres make informed decisions about managing fruit flies on farms and gardens. After attending the Easy as 1-2-3 Fruit Fly Suppression program, many farmers adopted new practices, which resulted in fewer pests and less crop damage.

PROTECTING COMMUNITIES

- Education about the risks of toxic chemicals from pesticides has led to safer pesticide use in homes and gardens in Guam.
- Arizona IPM programs have impacted over 303,600 students statewide. IPM in schools has reduced pest incidence by 78% and pesticide use by 71%, protecting student health and safety.
- Utah State University helped design educational signs that were installed in demonstration fruit and vegetable gardens to show the public how IPM can be used by all gardeners to grow healthy, productive and safeguard the environment. More than 20,000 people visit these gardens each year.

DETECTING & IDENTIFYING PESTS

- Northern Marianas farmers have had dramatic yield increases after learning and using new pest detection methods.
- Idaho, Utah, New Mexico, and Washington collaborated on Pests of the West, a USDA-APHIS funded program to help agriculture professionals identify new invasive pests. Proper identification is the first step in any IPM program.
- In 2016, Montana Extension personnel diagnosed 3,500 pest samples. Confirming pest presence helped farmers take action before serious crop damage occurred. Finding out a sample was not a pest, weed, or disease helped farmers avoid unnecessary pesticide, herbicide, and fungicide use. Diagnoses also helped homeowners avoid damage and costs associated with pests and helped a tick bite patient avoid serious suffering and expenses. Clients reported saving an estimated \$4 million by using diagnostic information and recommendations.
- Researchers identified plant samples that were toxic to livestock. Identification enabled early, rapid response, preventing further spread of these toxic invasive plants, which cost millions in control costs and lost forage production.

PREVENTING PEST SPREAD

- Preventing the spread of pests is key to minimizing the damage they cause. Research showed that hot water treatment is a practical, cost-effective, chemical-free way to remove pests from potted ornamental plants before shipping. Hot water treatment has been adopted in Oregon to treat Christmas trees and in California for nursery plants.
- Extension workshops are improving growers' and shippers' ability to identify pests and natural predators, parasitoids, and insecticides that can provide control. Preventing the transport of pests helps avoid quarantine, saving time and money.

CONTROLLING DISEASE IN CROPS

- Utah and Colorado are collaborating on a project to manage onion thrips and iris yellow spot virus in onion crops. Research shows growing new onion varieties that are less susceptible to these threats could increase yields in Colorado by 10%, an increase valued at \$5 million.

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