Areawide Pest Management Program

USDA Agricultural Research Service

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Agricultural Research Service
USDA’s chief scientific in-house research agency.

Mission: Conduct research to find solutions to agricultural problems that affect Americans every day from field to table.

Scope:
• 750 research projects, 17 National Programs
• 2000 PhD Researchers + 6000 other employees
• 90 research locations, including 4 overseas labs
National Program 304: Crop Protection and Quarantine

Conduct research that develops

- Safe, integrated insect pest and weed management methods for key pests of agriculture and natural ecosystems.
- Safe systems for protecting post-harvest commodities (e.g. grains and fruits) for trade and food distribution.
Area-wide Pest Management Program

- Develop effective, sustainable strategies for controlling pests of significant economic or ecological consequence
- Target pests that require an area-wide approach for effective control
ARS Area-wide Pest Management Program

- ARS is not a granting Agency (that is NIFA)
- Within our research programs: developed from the ground up
- Request project ideas from ARS researchers
  - Competitive evaluation
  - Annual funding cycle
Area wide Projects address:

An agricultural pest problem of severe economic, ecological, or med-vet health impact in the United States

- Demonstrated need for an area wide approach to solve the problem
- Relevant pest control tools already exist, a system for implementation is needed
- Customers and stakeholders are likely to implement the proposed strategies by the end of the project
- Continues after ARS project funding ends
Area-wide Components

- **Operational component**
  - How the project is implemented—
  - Control methods, system of integration, locations involved, general design of the pest control system
  - The primary goals of an AWPM project are development and implementation

- **Research component**
  - “Scale-up” needs
  - Developing decision support models
  - To quantify the success or failure of pest control under AWPM.
Area-wide Components...

- **Outreach and Technology Transfer component**
  - Identify the end users (e.g., private land owners, pest control companies, local governments)
  - Provide outreach to expand users’ knowledge and understanding of the area-wide methods and strategy.
  - Ensure a continued, broad adoption of the strategies
  - Achieve early user buy-in to the project.

- **Assessment component**
  - Define progress and success using quantifiable measures
  - Measure and assess progress
  - Define who is involved in evaluating project progress
  - Economic & ecological impacts, as well as pest control
Area wide Project Phases

- **Phase I. Initiation**
  - Solidifying teams, planning, site selection
  - Feasibility studies
  - Base-line data collection and limited implementation.

- **Phase II. Implementation and program assessment**

- **Phase III. Completion**
  - Demonstrate full implementation
  - Adoption by the end-users
Herbicide-resistant weed epidemic corn/soybean rotations

Initiated in 2015

- Crop rotation
- Cover crops
- Reduce weed see spread: Harrington Seed Destructor
Aquatic weeds, Sacramento San Juaquin Delta

Initiated Area wide in 2014

- Landsat & modeling to identify nursery populations
- Targeted herbicide applications
- Biological control agents
Aquatic weeds, Sacramento San Juaquin Delta
Coffee Berry Borer

Initiated in 2013.

Developing a multi-prong attack on this beetle:

• Sanitation methods to remove berries left in the field after harvest
• Repellents to ward off beetles
• Organic-approved plant treatments to synchronize bean ripening and harvest (starving the beetle between harvests)
• Sampling trees to spray only when necessary, using an organic-approved fungal biocontrol product
• Enhance native biological control agents
Major partners

- University Researchers & Extension
- Areawide Project
- Farmers, Ag Producers
- People who use the commodity
- Agricultural Industry
- Government