


**Introduction
And
Exotic Cotton Pests: How
do we know they are not
here already?**

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15 minutes, 0.25 CEU's
25 people**

My Background

- BS in Horticulture, Oregon State University
- Worked with Cooperative Extension Service
- Insect monitoring in sweet corn, snap beans, and Brassica



Oregon State UNIVERSITY **OSU**

I have a Bachelor's of Science in Horticultural Research from Oregon State University. While at OSU, I worked with the Extension Service for 3 years. I monitored pest populations in sweet corn, snap beans, broccoli, and cauliflower. I communicated the population levels to PCA's and growers in person and through a weekly newsletter, so they would know when to increase scouting.

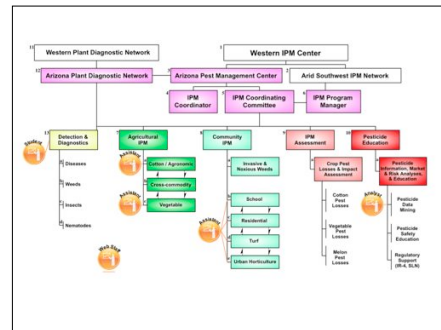
New Hires

Assistants in Extension

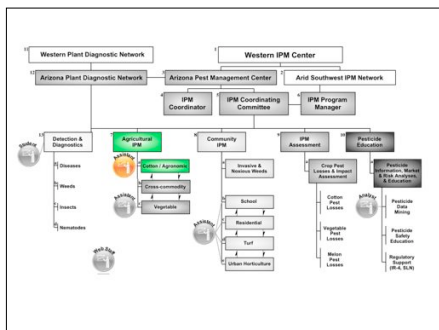
- Marco Peña in Yuma- Vegetable Crops IPM
- Bryan Stevens in Phoenix- Community IPM
- Lydia Brown- Agronomic Crops IPM



The University of Arizona is expanding its Extension Integrated Pest Management programs. New additions to the APMC will help expand and enhance IPM programming throughout Arizona. Marco Peña in Yuma is working in vegetable crops IPM; Bryan Stevens in Phoenix is working with the community IPM group; and I am working in agronomic crops IPM.



This organizational chart shows where the recent hires fit in the overall organization. Besides the new assistants in extension, the AMPC hired Wayne Dixon, a computer programmer, who is working to organize pesticide use data and Theresa Smith, who maintains the website. Soon, student employees will be hired to work in pest detection and diagnostics.



Agronomic Crops Leadership Team

- Peter Ellsworth
- Mike Ottman
- Bill McCloskey
- Randy Norton
- Ayman Mostafa (new County Agent)

Also, I respond to the IPM coordinating committee

This is where I fit in the organizational structure. I will be working with Agronomic Crop IPM– mainly in cotton, alfalfa and small grains. My focus will adapt to any new challenges or priorities.

I am working under the supervision of the Agronomic Crops Leadership team. I will help them with training events, meetings, developing extension documents, field research, identification of program priorities and evaluation of impacts.

I have statewide responsibilities, and I respond to the 20 member IPM coordinating committee. They, in turn, represent the interests of anyone in our system who is developing IPM programs. As long as the project has to do with IPM and is an identified priority, I will respond and help.

My Role

- Work with stakeholders
- Expand and enhance IPM
- Assist IPM faculty



Exotic Cotton Pests: How do we know they're not here already?

I will be working with extension and research faculty to develop and implement extension programs for IPM on a statewide basis; evaluating stakeholders' needs and the outcomes of IPM programs; informing program planning; organizing meetings, demonstrations, and other educational events; and assisting with IPM faculty with research projects.

My first project is writing a reference manual for the USDA. It will provide necessary information on how to determine if exotic pests have arrived in the US.

CAPS program

- Cooperative Agricultural Pest Survey
- USDA-APHIS-PPQ-CPHST
- Designed to identify exotic pests entering the US
 - Secure US food and fiber
 - Facilitate trade

My first project is with the Cooperative Agricultural Pest Survey (CAPS). A grant from CAPS is providing the bulk of the initial funding for my position.

It's a USDA program to survey for and identify exotic pests when they first enter the US. The goal of the CAPS program is to intercept exotic pests early, before they become a problem. The program will help keep US food and fiber secure from new pests. It will also facilitate trade; if we can present data that shows surveys for pests resulted in zeros, we are less likely to suffer from trade restrictions/ barriers or treatments and extra inspections at borders.

CAPS project

- Shifting from being organized by pest to organized by commodity
- Exist for: corn, grapes, citrus, oak, pine, small grains, and soybeans
- I am writing the cotton reference manual

CAPS is a national program. The USDA, APHIS, PPQ, and CPHST compiled a list of exotic agricultural pests that, if introduced, would threaten US agriculture. Participating states survey for the pests annually. Until a few years ago, the program was organized by pest. Now, the program is organized by commodity.

Benefits to being organized by commodity:

1. Each state's survey program can be smaller and more targeted
2. Resources can be better utilized
3. Commodities are easy to organize by economic and geographic importance.

Paired Documents


- Commodity-Based Survey **Reference**
- Commodity-Based Survey **Guidelines**

Each commodity has a pair of documents. The reference document is composed of a series of pest data sheets and mini pest risk assessments.

The survey guidelines document provides guidelines for site selection, number of acres to survey, number of samples to collect, field methods, survey tools, etc.

Reference Document

- Description of Pest
- Biology and Ecology
- Symptoms and Signs
- Host list
- Distribution
- Risk assessment
- Basic survey methods



The reference document is composed of a series of pest data sheets and mini pest risk assessments. It is highly graphic and illustrates the biology, survey and identification of pests in enough detail that surveyors will be able to confirm whether a pest has been detected. The pests are suggested by the CAPS national committee from the CAPS analytic hierarchy process. We refined the pest list in collaboration with nationwide experts.

Survey Guidelines

- More focused list of pests
- Specific survey methods
- Increase confidence in findings

The survey document covers a shorter list of pests, those deemed most important by the CAPS national committee. Participating states must survey for all the pests listed in this document. The survey guidelines document provides guidelines for site selection, number of acres to survey, number of samples to collect, field methods, survey tools, and instructions on how to transport samples.

The guidelines increase the uniformity of data collection and increase the reliability of the survey data.

Bagrada Bug

- First found in L.A. county in June 2008
- Now distributed in the low deserts of CA & AZ
- If detected when it first arrived, control may have been easier



The hope of the CAPS program is to avoid pest problems like those we are encountering with the Bagrada Bug. In Yuma, the Bagrada bug is threatening vegetable production. If it had been detected earlier, control and eradication may have been possible.

Pest List

• summerfruit tortrix	• cotton seed bug
• silver Y moth	• passionvine mealybug
• cucurbit beetle	• Egyptian cottonworm
• old world bollworm	• false codling moth
• citrus brown mite	• ramie blight (boll rot)
• Asian cornborer	

This is the pest list for this national cotton manual. The manual covers all types of pests, but our list is all arthropods except one pathogen— Ramie Blight (a *Phytophthora*) The insects highlighted in orange are also listed as potential pests of alfalfa, corn, and small grains.

Silver Y Moth

- cotton, alfalfa, corn, wheat, and others
- Asia, Europe, and Africa
- Skeletonizes leaves, cuts petioles



An example of a pest from the list: silver y moth is a pest that can feed on at least 224 plant species. It is considered highly likely of becoming established in the U.S. if introduced. California and southern states have the highest risk based on host availability and climate.

Old World Bollworm

- Cotton, alfalfa, wheat, corn, and others
- Asia, Africa, Europe, Oceania
- 2 or 3 larvae/plant can destroy all bolls within 15 days
- Eradicated early in UK



Old world bollworm is a major pest of field and horticultural crops in many parts of the world. It has a broad host range, high fecundity, high mobility, and it's able to adapt to varying climates. It can cause up to 65% losses in cotton— 2-3 larvae/plant can destroy all bolls in two weeks. It is probable that old world bollworm could establish in every state in the continental US. In the UK, it was discovered early, and eradication programs were successful. Hopefully, the CAPS program will help us to be similarly successful in preventing the establishment of this pest.