

Diagnostics & Identification A Key to Pest Management

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The Art of Identification

Insect Identification Clinic

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Arizona Plant Diagnostics Network: Western Region

A Host of collaborators establishing
database

What is WPDN

- **The Western Plant Diagnostic Network is one of the keys to our Homeland Security effort to protect agriculture in our nation. It is one of five regions in the National Plant Diagnostic Network. Members include the states of Alaska, Washington, Oregon, Idaho, California, Nevada, Utah, Arizona, New Mexico, Hawaii and U.S. Territories in the South Pacific.**

The First Step in IPM-Identification



This is the key to doing the right thing. If you learn what critters are involved, then you have the biology at your fingertips and can plan action to mediate problems. If you cannot identify or find critters you think are involved don't do anything or you may exacerbate the situation.

Insect Identification: Critical Observations



- Bollworm
- Budworm
- Two Caterpillars that look alike but have very different capabilities

This story emphasized the importance of proper identification. Caterpillars were found in cotton, but were identified as bollworms. The farmer sprayed on schedule, but the caterpillars didn't respond. Continued spray did nothing but the caterpillars enjoyed it, because it turned out they were budworms and they had developed resistance to the insecticide so they did better and crop was lost.

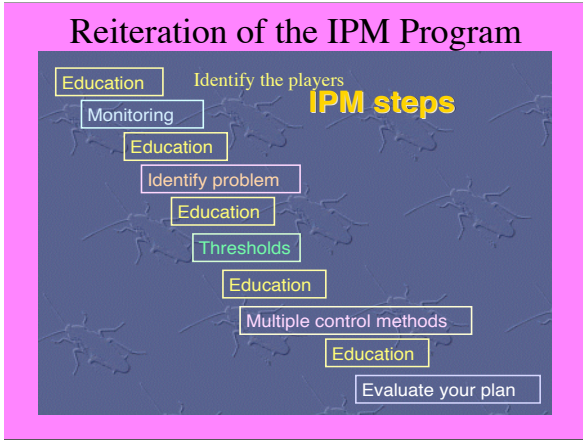


IPM: What does the 'P' Stand For? A Different Perspective



- **IPM: A Definition**
- **Integrated Population Management, an ecologically based management strategy that provides long-term management of insect problems with minimum impact on human health, the environment and non-target organisms. IPM programs are educationally based and focus on our knowledge of insect biology and its relationship within the environment.**
Dawn Gouge/Carl Olson

I typically talk about IPM as population management, using tools to bring populations into equilibrium state, a healthy place. Total extermination is not a healthy plan for the ecosystem because the bugs are necessary at proper levels. Eradication is not an option, and shouldn't be a goal either. IPM too, may just be Integrated People Management because people create the problems and need to be trained to not cause the problems but help mediate it.

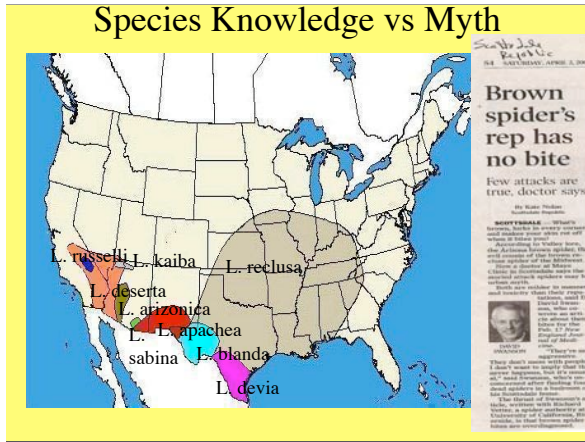


IPM really means education, because one must always be learning whether about the key players (plants, insects), what the problem is perceived to be, if numbers are such that problems are imminent, what methods can one employ to correct it, and did one solve the problem or must one seek other strategies.



- **Brown Recluse Paranoia: Is it or isn't it? Concerns! What to do?** Many similar necrotic problems arise from fungi, bacteria (*Staphylococcus aureus*) that are misdiagnosed and thus mistreated.

Our society seems to run on fear today, and people trying to sell or create a situation take maybe a one in a million situation and make it seem the norm, thus causing people not educated about insects, biology, etc., to become fearful and hire these false or misleading advertisers to save them. There probably isn't the problem, but these people are taken and lose money because of the fear employed.



As an entomologist I try to put the facts before the public in hopes of waylaying the misunderstandings created by ads or perceptions that are wrong about bugs.

Another Misidentification: More Anxiety Unjustified

- **Kissing Bugs: Fear of Chagas Disease; Stories of acute allergic response to bites.**
- **Picture Identification by unaware public thinking they have been surrounded by these insects**
- **Incorrect Identification leads to unnecessary worry and probably unwarranted insecticide attack**

Science continues to work on biological situations that can and do sometimes impact humans, but those stories need to be presented in a calm fashion, not the hype of the media. TV and other media create disproportionate stories that make people anxious because they don't know who to believe, and then they may do worse things to their life in an attempt to 'protect'.

Diagnosis Again: Is it a Problem?

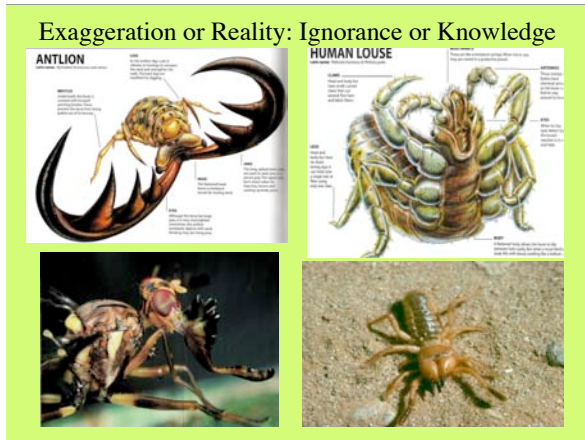


We talked about identification, but then you must determine if indeed there is a problem or you have just been brainwashed into thinking bugs are bad. Bugs have a very important part in keeping Nature healthy, not kill it. There needs to be a re-educating of people now, and a new appreciation of aesthetics of Nature.

Belief in Biology: Trust Education over Hearsay



So often biology has examined a situation and knows the truth, but can't bring ones self to believe what they learned. Too often bad things are done because there is no faith or belief in the facts. Here are predators and parasites that do manage herbivores and others to keep systems in balance without man's intervention. And it works.



We live in times when everything must be bigger to be better. Hype or exaggeration sells, whether newspapers, products, stars. This hype is used to also create fear and panic about the bug world, giving power to some. Education is the key to keeping things in proper perspectives. If you stay ignorant you stay fearful, and that isn't life.



Certainly bugs are in control, and rightfully so, but people can share in the wealth of Nature and blend in with them. Learn the values of the bug world in yours, and you will start to understand they are not evil, but work for you in so many positive ways.