Landscape Pest Identification Hands-On Activity from 2009 UC IPM Advanced Training for Master Gardeners

Activity Goals:

- Learn to recognize pest damage symptoms on woody landscape plants
- Learn to use the *Landscape Pest Identification Cards* to identify causes of problems
- Learn how to make a landscape pest identification sample collection for your Master Gardener program
- Designed as a hands-on activity for no more than 30 people

Materials:

- Pest Samples (See handout " How to prepare your own preserved samples" for information on how to make samples). We used about 60 samples in our Master Gardener trainings.
- One *Landscape Pest Identification Card* set for each participant. (These can be ordered from ANR Communication Services at http://anrcatalog.ucdavis.edu/Items/3513.aspx . They will give discounts for county UCCE offices and bulk orders)
- A copy of *Pests of Landscape Trees and Shrubs* and any other references that might help in identification. An Internet connection to the UC IPM web site could be helpful but is not necessary.
- Hand lenses (a few for each table)
- At least six very large tables—or 12 tables doubled-up to make 6. (Number needed depends on how many samples you are displaying.)
- Handout "Pests and Problems on Display" listing the pests on display, host, and associated Pest ID Card number. (See sample handout.) You will need to make your own list that matches the pests from your collection that will be displayed.

If you are demonstrating how to make samples to Master Gardeners—you will also need the following. (This is only appropriate for Master Gardener audiences where you are planning to have them make samples for your program.)

- Handout "How to prepare your own preserved samples"
- Materials to demonstrate how to make a sample including a leaf-twig sample, two paper towels, newspaper, cardboard, and a plastic photo archive sleeve.

Preparation

- Arrange tables in room so participants can walk around all sides.
- Arrange samples on tables in some logical grouping. You can place a sign on each table indicating what that common feature is. Place hand lenses next to samples that require magnification. For our 2009 trainings we placed similar damage symptoms together on the tables with the following categories:
    - Necrosis, leaf spots
    - Curled or wilted leaves
    - Stippled/speckled or whitish leaves
    - Chewed holes in leaves
    - Scales and lerps
    - Borers, galls and distorted wood
    - Natural enemies

PEST ID ACTIVITY (Total time: ~1 hour 20 minutes)

Pre-Activity (~ 20 minutes)

1. Each participant is given a set of the Landscape ID Cards

2. Facilitator reviews the card set features with participants so they are somewhat familiar with them before looking at samples. This should take about 10-12 minutes. We suggest having each participant leaf through their cards as the facilitator points out important features, including the following:

- Note that cards cover about 120 common arthropod and pathogen pests. These are the most common problems. Use *Pests of Landscape Trees and Shrubs* and/or the UC IPM web site to get information on the many other pests that might occur and also more comprehensive biology, identification and management information. (The advantage of *Pests of Landscape Trees and Shrubs* (and the web site) is that you can find pests of specific host plants in the back tables—this makes ID easier in many cases.)
- Show table of contents. Insects are covered first and then diseases. They can use the table of contents to find a card if they think they know their problem.
- Point out that the cards have color-coded tops that group the pests in sub groups.
- Leaf to card #1—General Predators. Note that the first cards in the set cover some very common natural enemies. Predators and parasites and the biological control they provide are the basis of IPM for insect and mite pests in landscapes. It is important to be familiar with natural enemies and be able to distinguish them from pests.
- Show the back of the card. Explain that each card has very basic information to help with identification and management. The management information isn't comprehensive but gives you a quick overview.
- After this, we recommend you go through the cards one-by-one pretty quickly, pointing out common damage features of the pests on each card or pests of special interest. Don't spend more than about 10 seconds on each card, but flipping through each one allows participants to get a general idea of what is covered.
- Note that Thrips have been erroneously classified as "foliage chewing insects". Thrips have rasping-sucking mouthparts and do not cause chewing damage. Their damage is similar to other insects with sucking mouthparts.

3. Review one of the landscape pest samples. Explain that participants will be using their card sets to help them identify the pest samples that are on display. The top side of the sample has a portion of a damaged plant plus some helpful information for identifying the problem including the host plant name and sometimes information about conducive conditions—a rainy spring or a tree under stress from other factors, etc. When they flip the sample over, the underside of the sample tells them what caused the problem—The actual pest name is at the bottom. The sample back also includes a print out of the corresponding Pest ID card that covers that pest (note the card number). Most of the cards cover multiple pests and the preserved samples usually show just one pest. Information about the particular pest displayed is circled in red.

4. *(When training Master Gardeners—not the general public)*--Before participants start to look at the samples, give them information about how to make the samples. Many Master Gardener programs are interested in how they can make a sample collection for their county. These samples can be used to train Master Gardeners or for displays for the public. They are very

useful because you can have teaching samples all year round. We have had some of our samples for several years.

Refer participants to the handout "How to prepare a Landscape Pest ID Sample". Read this handout thoroughly beforehand so you are well acquainted with the process. Quickly demonstrate the basics.

- Place a sample between two paper towels in a newspaper section. Fold it over. Put sample under a stack of books or in a plant press for several days or a week until it is completely dry.
- When samples are dry, they can be mounted on cardboard—show sample.
- On the front, tape information about the host and any other info helpful in identifying the problem.
- For the back, use the templates found on the UC IPM Master Gardener web pages to create an ID page that includes the appropriate Pest ID card image. The templates are Powerpoint files that can be modified to include the information specific to your pest. Type the specific pest name in the box and circle information related to your pest in Powerpoint. Then print it out and tape it to the back of the sample cardboard.
- Put the whole sample in a plastic photo archive preserver sleeve.
- BE SURE YOU HAVE THE PEST CORRECTLY IDENTIFIED!

Main Activity (~ 1 hour)

5. Reviewing the samples. Refer to the "Pests and Problems on Display" handout.

Participants should go around each table alone or in pairs and try to identify each sample using their cards. Working in pairs is a very good way to do this. Once they think they know what the cause of the problem is (or if they give up), they should flip the sample over and confirm the identity. They can then check the pest off their list. The pests on the handout are ordered according to the Pest ID card number—going by the Pest ID card number on the sample is the easiest way to find the pest on the list. After they have identified the pest, be sure to turn the sample back over, so the identity is not revealed to the next person.

Before starting, divide the group so there are only about 4 people at each table. This will avoid bunching up.

Facilitators should make themselves available to help with identification, offer tips, etc. Often participants ask about pests that aren't among the samples. You can look up information in *Pests of Landscape Trees and Shrubs*, other books or the Internet to try to help with identification.