Training Activities – Hands-On Demonstrations to Go along with Honeydew Presentation

1. Monitoring and Identification

Objectives:

1. Identify various honeydew-producing insects.
2. Use tools to help see key features.
3. Understand many techniques to prevent and manage honeydew-producing insects.

Materials:

- Hand lenses and microscopes.
- Samples of various species and life stages of aphids, soft scales, and whiteflies on host plants.
- Samples of natural enemies or parasitized pests.
- Copies of the Pest Notes and Quick Tips for aphids, scales, and whiteflies.
- Copies of Pests of Landscapes Trees and Shrubs and Pests of the Garden and Small Farm.
- Sticky traps, reflective mulch, refillable ant bait station, tanglefoot, double-sided sticky tape
- Insecticidal soap
- Neem oil

What to do:

Before the session, identify locations where aphids, scales, whiteflies, or other honeydew-producing insects are feeding. During the session if possible, take the group to these outside locations and give each participant a hand lens. Have the group monitor plants for pests and remove samples to bring indoors. If going to outside locations is not possible during the session, bring in samples of pest problems on host plants and show them to the group. Ask what the defining characteristics are of each species. Be sure to point out the cornicles on aphids. Emphasize that many different aphid species vary in color, but also note that several different colors of aphids can occur together, often belonging to the same species. (For example, melon and rose aphids). Remove adult female scale insects from host plant and turn over to observe eggs or waxy deposits that remain after hatch. Observe various stages of whiteflies and scales.

Ask the group to describe examples of how they would manage honeydew-producing insects. Show yellow sticky traps and reflective mulch for preventive methods. Show double-sided sticky tape for monitoring scales. Show bait station and tangle foot, and emphasize the importance of ant management so that natural enemies can do their job. Discuss hosing off and pruning out pests. Reinforce that if insecticides are
needed, use the least-toxic materials and only after other methods have been tried. Show the soap and oil products.

Late spring (e.g. late April/May) is an ideal time for this activity since this is when many scale and aphid species are most active. Whiteflies become abundant when temperatures are warm.
2. Natural enemies

Objectives:

1. Identify common natural enemies of honeydew-producing insects.
2. Recognize parasitized aphids, scales, and whiteflies.
3. Understand ways to encourage natural enemy activity.

Materials:

- Hand lens or microscopes
- Samples of live or dead natural enemy species or good color photos. Good places to look for natural enemies include plants, such as roses, with lots of aphids. Live natural enemies can also be ordered from beneficial suppliers such as [www.rinconvitova.com](http://www.rinconvitova.com). Find good printable photos in the online natural enemy gallery at [http://www.ipm.ucdavis.edu/PMG/NE/index.html](http://www.ipm.ucdavis.edu/PMG/NE/index.html)

What to do:

Before the session, collect various natural enemy species, including general predators as well as specialized predators of whiteflies and scale insects. Also bring parasites of the various pest groups and samples of parasitized scales, whiteflies, and aphids. Show the group the samples of natural enemies and have them identify the species and note if they are predators or parasites, generalized or specialized. If specialized, ask what pest group they attack. Have the group look at samples of parasitized insects. Distinguish whitefly parasite exit holes from pest emergence holes.

If you have a microscope, put aphids and a natural enemy in a Petri dish and let participants watch them feed.

Collect aphid mummies several days before hand. Put them in a jar and wait for wasps to emerge. On the day of the presentation, put them in a covered Petri dish with aphids to see if they “sting” or lay eggs in them.

Ask the group how to encourage natural enemy activity. Be sure to emphasize managing ants, choosing plants that provide nectar, and shelter, and eliminating insecticide applications or choosing pesticides that don’t harm natural enemies.