NEWSPAPER ARTICLES

Honeydew Producing Insects

by Anne Skinner, Tulare-Kings Counties Master Gardener

Now that Spring is arriving in Tulare and Kings Counties, perhaps you've noticed (or will soon) a shrub or tree not looking as vigorous, with a sticky substance on discolored leaves and dirty-looking areas on the leaves. Honeydew is the sticky clear substance produced as excretion of excess sugar by a leaf-feeding insect. It often will become black from sooty mold fungus growing on it. If the plant is near a walkway, the sticky honeydew on the pavement can become a slip hazard. Ants often can be seen joining the party, as they love to feed on honeydew. Honeydew-producing insects include aphids, soft scales, whiteflies, mealybugs, leafhopper species and psyllids. This article will include some of the more common insects. The UC Integrated Pest Management (IPM) site has detailed Pest Notes on all of these insects and their management. All can be accessed from the Master Gardener Home Page under UC Gardening and Pest Information.

Identification of the insect producing the honeydew
Some honeydew producing insects are primarily a nuisance, such as aphids; and some can cause the death of a mature citrus tree, as can occur with the Asian citrus psyllid.

Aphids are most fond of young succulent growth such as occurs in the spring. They can invade in a crowd and look alarming swarming an early rosebud. They are soft bodied insects and can be dislodged from the plant with a strong stream of water early in the day. Their numbers on the plant will attract the attention of beneficial insects such as the lady beetle and syrphid fly. The larvae of both these insects are major consumers of aphids. Ants have been seen "farming" aphids, by driving off beneficial insects and actually relocating aphid eggs. (Pest Note 7404)

Cottony cushion scale is notable as a white, cottony egg sac attached to an orangish brown insect. The egg sac contains 600-800 red eggs, which hatch into crawlers. They will shed their outer skin and leave white cottony molting skin. The crawlers and nymph stages are found on the leaves until the third-instar, then they move to branches. Cottony cushion scale has two to three generations a year, with faster life cycles in warm weather. Because the scales suck phloem sap from the leaves, twigs, branches and trunk, it can result in leaf loss and dieback of small branches. (Pest Note 7410)

Mealybugs are tiny (1/20-1/5 inch long) and covered with a whitish mealy or cottony wax. They can be found on branches, twigs or leaves where the foliage touches, with groups forming a white cottony mass. They can slow plant growth and cause early leaf or fruit drop and twig dieback. This can cause plant decline or overwhelm a young plant. (Pest Note 74174)

Asian Citrus Psyllids are vectors of the disease Huanglongbing (HLB). When the insect feeds on the leaves of an infected tree, then flies to another tree, it transmits the disease while sucking the sap from its leaves. The insect is a tiny, mottled brown and similar in size to an aphid. The disease is a serious threat to all citrus--orange, grapefruit, lemons and mandarin, in addition to related ornamental plants such as Indian curry leaf, box orange and orange jasmine. The insect lays eggs in the folds of new leaves, and the nymphs feed on soft leaves, stems and flowers. The nymphs excrete honeydew and a waxy curly tube to clear the sugars from its body. These waxy tubes are unique to this insect and help to identify it.

Monitoring by the California Department of Food and Agriculture (CDFA) includes the use of yellow sticky traps to track the insect and disease. For photos of the Asian citrus psyllid and HLB symptoms, visit the California Citrus Threat website. If you think you have found the insect, contact the Tulare County Ag Commissioner's Office at 559-684-3350. The symptoms of HLB can take years to develop, allowing the infected tree to be a source for spread of the disease.

An important point for everyone in the Central Valley is to **not move citrus leaves and branches.** It's tempting to gift some of your citrus fruit with the pretty leaves attached, but this is a mechanism for the psyllid to ride along to another location. Remove the fruit from the branch and all leaves, wash the fruit well and dry it before moving it from your property in a covered container.

Home gardeners can also help avoid the spread of this disease by not moving citrus trees or plant material. Do not obtain citrus trees from other than certified disease-free suppliers. It can be very tempting to accept that free tree from outside of the area, but that is likely how the insect and disease were first introduced into the US. (Pest Note 74155)

Other related Pest Notes include Sooty Mold Management Guidelines, #74108, and Whiteflies, #7401.

Beneficial insects to the rescue
The champion in controlling cottony cushion scale is the vedalia beetle, one of the 200 species of ladybeetles in California. The beetle lays eggs under the female scale or her egg sac. The beetle eggs hatch into larvae which feed on scale eggs and crawlers. Adult beetles feed on all scale stages. Other lady beetles feed on aphids, mites and psyllids.. They will lay a row of eggs near an aphid infestation so the emerging larvae have food available. On a single rose plant, I've seen lady beetles, their eggs and larvae, syrphid flies and their larvae, all having a party on the aphids.

A parasitic fly, *Cryptochaetum iceryae*, lays eggs in the second or third instar or adult female scale. The hatching larvae feed inside the scale, pupate and emerge as an adult fly.

Mealybug destroyer is a mostly black ladybeetle with a red-brown head. The adult beetle and larvae feed on all stages of the mealybug. The larvae are covered with waxy curls and resemble the mealybug, something to keep in mind when cleaning pests off of the plant. They can be obtained from insectaries and may need to be reintroduced each year, as they do not survive in the cold.

You can help the beneficial insects
Control dust on the leaves of the plant with a strong stream of water early in the day.

Control ants around the plant or tree as they will protect the scale or aphids from predators to obtain the honeydew. Apply a sticky substance such as Tanglefoot to a collar of fabric tree wrap or duct tape around the trunk of the tree. Monitor the sticky material for debris which will give ants a bridge to cross into the tree trunk. Ant bait stations provide a pesticide the ants take back to their nest to eliminate the colony. Treat for ants in early spring before their population increases.

Maintain good growing conditions for your plants, particularly irrigation, to increase their resistance to pest problems. Prune off heavily infested twigs and branches and clean up fallen leaves. Proper pruning to open up the canopy of the plant exposes scales to heat and parasites to reduce their population. Reduce weeds from around garden beds to avoid competition for water and habitat for pest insects.

Providing the beneficial insects with native plants which bloom in different seasons gives them pollen and nectar and a reason to stay close to your yard until their pest insect prey arrive.

Aphids are on the menu for a number of beneficial insects and prior to their arrival, can be dispatched with a strong stream of water from small shrubs such as roses.

Chemical control
Because of the detrimental effect on beneficial insects, use of chemicals should be avoided. The application of chemicals directly on the pest is not so simple. The cottony cushion scale eggs are well protected in their egg sac and insecticides don't control adult scales well due to their waxy covering. Cottony cushion scale infestation may be worsened if the vedalia beetle is poisoned by an insecticide, allowing the scale to proliferate. Mealybugs also have a waxy covering blocking contact with chemicals.

Application of a narrow range horticultural oil to a deciduous plant during the dormant season is an option, as the beneficial insects would not be present.

The UC IPM Pest Notes are a great resource
Honeydew is a nuisance, but also can be an indicator of a serious problem such as the Asian Citrus Psyllid. On the Master Gardener web site, the UC IPM section has more details and photos of the insects, damage and management of these pests. The photos and descriptions of the various pests can help with correct identification of the source of honeydew and appropriate methods of treatment. The IPM Pest Notes can also be obtained from the Master Gardeners at our information booths.

The Tulare-Kings Counties Master Gardeners will answer your questions in person:
Visalia Farmer's Market- 1st & 3rd Saturdays, 8-11 am, 2100 W. Caldwell Ave (behind Sears)
April 22 - Kid's Day at Hanford Mall Parking Lot - 9 am - 2 pm
April 29 - Earth Day at Summers Park, 247 W. Ferguson Ave., Visalia - 11 am - 3 pm
April 29 - Mission Oak Car Show Info Table, 3442 E. Bardsley Ave, Tulare - 10 am - 2 pm
Questions? Call the Master Gardeners:
Tulare County: (559) 684-3325, Tues & Thurs, 9:30-11:30;
Kings County: (559) 852-2736, Thursday Only, 9:30-11:30 a.m
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