



Information

Bohart Museum of Entomology

No. 041

Woolly Aphids

Woolly aphids (family Eriosomatidae) occur on many hardwood and coniferous tree and shrub species. They are small (2-4 mm = 1/8 inch), pear shaped insects. These insects are recognizable by a fuzzy, bluish-white wax that covers the body. The wax filaments give this pest a fluffy, cottony appearance, as though they are covered with wool. Woolly aphids belong to the same order as true aphids, and thus have similar habits. There are many species of woolly aphids found in California.

The Asian Woolly Hackberry Aphid, *Shivaphis celti*, is one species of woolly aphid that is becoming more common in California. It first showed up in the northern Central Valley in 2002. It is found on the underside of the leaves of hackberry (*Celtis occidentalis* also called sugarberry), which is a common tree in the Central Valley because of its ability to withstand heat, drought, wind, and alkaline soils. This aphid is not a pest on other plants. The Woolly Hackberry Aphid was first discovered in Florida in 1997, and has since spread rapidly across the south and into California. The aphid itself is quite small (2-2.5 mm long) but may appear larger because of the fuzzy wax covering. The antennae have a banded appearance, and the veins of the wings (when present) are slightly darkened.

Most species of woolly aphids share a similar life cycle, although some details of the life cycle may vary among species. Woolly aphids generally have two hosts: a primary host on which they overwinter, and a secondary host on which they spend much of the summer. They usually overwinter as eggs laid in bark of their primary host. In spring, the eggs hatch into females, which are parthenogenic, meaning they can give birth without mating. This allows females to produce hundreds of wingless offspring very quickly, so populations can grow rapidly. After one or two generations on the primary host, winged females

are produced, and they fly to secondary hosts. They remain on secondary hosts for the remainder of the summer, producing several generations of young aphids through parthenogenesis. In late summer or early fall, a different generation of winged females flies back to a primary host where they give birth to tiny male and female aphids that mate. After mating, females deposit a single large egg (or eggs) into protected locations in the bark and then die.

Woolly aphids feed by inserting needle-like mouthparts into plant tissue and withdrawing sap. They feed on leaves, buds, twigs, and bark. Some species also can feed on plant roots. Because their diet is made up almost entirely of plant sap, these insects produce large volumes of a sticky, liquid secretion called honeydew. The sugary honeydew produced by the aphids often encourages the growth of a black mold. Everything under infested trees, such as cars, picnic tables, houses, and plants, may get a gooey coating of moldy honeydew. Luckily, because the honeydew is water soluble, a strong spray of water may be enough to rinse away the sticky substance.

The damage to trees caused by woolly aphid feeding includes twisted and curled leaves, yellowed foliage, poor plant growth, low plant vigor, and branch dieback. Physical injury may result when large numbers of woolly aphids attack young trees or unhealthy, stressed trees. Fortunately, severe woolly aphid infestations only occur periodically. Spraying smaller trees with an insecticidal soap may serve double duty, by reducing the aphid population and cleaning the sticky surfaces. However, this control measure may have little effect on large infestations (involving many trees) or on a population on a large tree for which it is difficult to spray every leaf. Natural enemies (such as ladybugs and lacewings) may be most effective at reducing the aphid populations in the long run.