

Woolly Apple Aphids

Art Agnello, edits by Monique Rivera and Mike Basedow

Intro

Woolly apple aphids have been showing up in increasing numbers the past few years in Eastern New York orchards. In addition to apple, its hosts include American elm, hawthorn, and mountain ash. It overwinters as an egg in bark cracks and crevices, or as a nymph on roots underground and in various protected locations on trees. WAA is attracted to the base of root suckers and around pruning wounds and cankers on limbs and trunks, and colonizes both above-ground parts of the apple tree as well as the roots. In the spring, the nymphs, which are reddish-brown with a bluish-white waxy covering, crawl up from the roots to initiate aerial colonies. These initially build up on the inside of the canopy on sites such as wounds or pruning scars, and later become numerous in the outer portion of the tree canopy, usually during late July to early August.



Terminal infested with woolly apple aphid. Photo courtesy OMAFRA.

Damage

The aerial colonies occur most frequently on new growth, water sprouts, unhealed pruning wounds, or cankers. The main injury to young and mature trees is stunting due to the formation of root or twig galls; mature trees are usually not severely damaged. However, heavy infestations cause honeydew and sooty mold on the fruit and galls on the plant parts, which interferes with harvest operations because red sticky residues from crushed WAA colonies can accumulate on pickers' hands and clothing.

Monitoring

Beginning now and extending through June, water sprouts, pruning wounds, and scars on the inside of the tree canopy should be examined for WAA nymphs. During mid-July, new growth around the outside of the canopy should be examined for WAA colonies. No economic threshold has been determined for treatment of WAA, but they are difficult to control, so the occurrence of any colonies should prompt the consideration of some remedial action.

Control Options

WAA is frequently parasitized by *Aphelinus mali*, a tiny wasp that is also native to North America. Parasitized aphids appear as black mummies in the colony. *A. mali* has been successfully introduced to many apple-growing areas of the world, and is providing adequate control of the WAA in several areas. It does not provide sufficient control in commercial orchards in our region because of its sensitivity to many commonly used insecticides; however, the wasp is thought to reduce WAA populations in abandoned orchards.

WAA is difficult to control with insecticides because of its waxy outer covering and tendency to form dense colonies that are impenetrable to sprays. Insecticide treatments are more effective the earlier they are applied, since they are more capable of decreasing the population before it becomes widespread, and the insects' waxy covering is less extensive earlier in the season. WAA is resistant to many commonly used broad-spectrum products, but other insecticides are effective against WAA, including Diazinon and Movento, and some additional products such as Admire, Assail, Beleaf, or Sivanto Prime may be good alternatives. For Movento and Assail, addition of a non-ionic surfactant (e.g., LI-700 or Regulaid) or horticultural mineral oil will improve activity. Good coverage to soak through the insects' woolly coverings is integral to ensuring maximum efficacy. In orchards where WAA has previously been noted as a recurring problem, the petal fall to first cover period would be a good time for a protective application of Movento, at the 8–9 oz/A rate. Because this material has systemic activity, the best efficacy will be obtained by following up with a second spray in 14 days. It is additionally effective against San Jose scale, the crawlers of which are anticipated to begin emerging soon and it would be best to use this as a combined treatment for both.