

Woolly Apple Aphid

By Laurie Kerzicnik

The Schutter Diagnostic Lab has received two samples (Missoula Co and Lincoln Co in Libby) in the last couple weeks of pear and apple branches with some swellings or pseudogalls around the buds and bases of the twigs.

These swellings appear to match those made by the woolly apple aphid, *Eriosoma lanigerum* (Figs. 1, 2). The woolly apple aphid can be present on both pear and apple, and it is also present on ash, hawthorns, and elm. It is the only woolly aphid that is present on apple. Without natural enemies or biological control, these aphids can increase in populations over the years if left uncontrolled. It is a unique apple aphid in the way that it can infest the aerial and root systems of the tree. These woolly aphids typically use elm as a secondary host (fall-winter) but have adapted to using just apples and pears as their hosts when no elm is present. This is currently a pest of apple and pear worldwide and is likely to occur in all areas where apple is growing. They are on roots year-round (Fig. 3) and overwinter there.

In the spring, small nymphs (immature aphids) will move from the roots to the aerial portions of the tree. The feeding of the aphids produces knot-like growths at each particular area. The woolly aphid will feed mostly on the woody areas, such as the shoots, the main scaffolds (pruning wounds and cracks), spurs, or the roots. They can establish colonies on both fruiting and non-fruiting tissue. The swellings increase in size as the aphids feed. The swellings can affect root function and can severely weaken the trees. If populations get large enough, the feeding around fruit bud tissue can impair development of the buds and affect yields. Aphids also secrete honeydew, which can lead to sooty mold infestations and less desirable fruit. The aphids also might infest the fruit, but they have not been shown to feed directly on the fruit.

The nymphs and adults are reddish/purplish in color and are about 1/16-1/20 inch long. When the aphids are active in the summer, they will produce a waxy covering that looks like a big cottony mass on the tree (Fig. 4). The colonies are usually densely populated at all stages. Hundreds of aphids can be packed into an area of a half-inch or less in size.

The woolly apple aphid can be effectively managed by releasing several natural enemies between May and July and again during a smaller peak of aphid populations in September and October. Some natural enemies include lacewing larvae, ladybeetles, and syrphid fly larvae. The parasitoid wasp *Aphelinus mali* has been imported for control of the woolly apple aphid. These predators can be purchased online through suppliers such as IPM labs, Rincon Vitova, and ARBICO. Native natural enemies for aphid control can also be attracted to the area by bordering the orchards with lots of flowering plants. Broad spectrum insecticides have killed a lot of woolly apple aphid natural enemies for control of other insect pests, which has created a surge in woolly aphid populations. If you wish to use an insecticide, an insecticide with the active ingredient carbaryl (such as Sevin) would work best for treatment, and this would be available at your local garden store. It is also best to mix this insecticide with a horticultural oil to penetrate the waxy covering of the aphid. For timing of the treatments, apply the insecticides as soon as you see the first colonies of woolly aphids appearing on the aerial portion of the trees in late

spring/early summer. If you still see aphids after a couple of weeks, a second treatment might be necessary, taking pre-harvest intervals into consideration.

Thanks to Dr. Diane Alston (Utah State University) and Dr. Chris Bergh (Virginia Tech) for some valuable insight and information regarding these samples.



Figure 1. Swellings around fruit buds from woolly apple aphid feeding.



Figure 2. Swellings around fruit buds from woolly apple aphid feeding.



Figure 3. Swellings/galls on roots from woolly apple aphid. Photo courtesy of Chris Bergh, Virginia Tech.



Figure 4. Woolly apple aphid colonies. Photo by University of Georgia Plant Pathology Archive, University of Georgia, Bugwood.org