Slug: Ask the Master Gardener
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Close examination of some cone bearing evergreen trees may reveal little white cottony tufts at the base of needles or a white waxy substance on the trunk and branches. These white structures are a sign of a sucking insect called adelgid. Adelgids feed exclusively on young conifer trees.

They are a member of the Hemiptera order of insects and are close relatives of aphids. In fact, they are often referred to as woolly aphids but actually are quite different from aphids. Adelgids have more complicated life cycles with as many as five stages spent on two separate hosts. The sprays that are effective on aphids have little if any affect on adelgids. Each species of adelgid has specific hosts and their varying forms are produced only on the appropriate host.

Adelgids live on a variety of evergreen trees: spruce, true fir, hemlock, pine, balsam, and larch. Some trees will tolerate infestations of adelgid with minimal damage while the pest devastates others. One example is the balsam woolly adelgid, a small bluish black or purple insect covered by woolly strands of wax. Balsam and fir trees are the host plants for this adelgid. Apparently, all firs can be infected but some like the noble fir are very tolerant while balsam, sub-alpine firs and Frasier firs are severely damaged. The balsam woolly adelgid over-winters as first stage nymphs on balsams. In the spring, it continues to develop and mature until the buds begin to swell. The female lays her eggs attached to a waxy thread. As the weather warms, the eggs hatch and it is at that time that the "crawlers" are dispersed by the wind, on animals and birds, or may even be carried from one area to another on camping equipment. Infected nursery stock also account for movement of the crawlers. They are carried until they find a fir on which to spend the next stages of life.

Another troublesome adelgid is the Cooley spruce gall adelgid. It is a wooly problem on Douglas firs and a gall problem on spruces. This adelgid spends its winters on spruce trees where the nymph pierces the tender bark below a bud. As it ingests the tree sap, a digestive enzyme is injected into the tree. The tissue around the bud begins to swell and form a pinapple-shaped cone, which encases the insect. The gall causes the bud to die and the tree becomes deformed. On firs, spruce gall adelgids appear as little white fuzzy specks. They cause yellow spots where they have sucked the juices from the needles.

Symptoms of adelgid damage are needle loss, yellowing spots on the needles, galls on spruce and of course the tell-tale white fuzz. Control is tricky and timing is all-important. Sprays have to be applied when the insect is in the crawler stage. That is the only time the insect is out from under its waxy cover, or out of the cone, and is vulnerable. Spray firs in early spring, at bud break, and spray spruce trees in the fall as the crawlers are again on the move. Be sure that young trees receive enough water in the dry season and are not stressed which makes them more susceptible to infestation. Check with your WSU Extension office for the current recommended sprays for adelgid.



This column is written by Washington State University/Skagit County certified Master Gardeners. Questions may be submitted to WSU/Skagit County Extension, 306 S. First Street, Mount Vernon, WA 98273-3805.