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Galling Oak Insects

It seems that 2010 may go down as the year of the oak gall. University Extension centers have been deluged with questions this spring about two different oak gall pests. Many people are curious about what is causing golf ball-sized “tumors” on the branches of their pin oak trees. Others wonder what is causing the leaves of their white oaks to turn brown. In either case, the culprit is a tiny wasp.

The pin oak galls are caused by cynipid wasps, about 1/8-inch-long. Two types of gall commonly affect pin oak, caused by two closely related wasp species. In one type, called “horned oak gall”, spiky projections protrude from the gall. The other type, “gouty oak gall” lacks these projections. In either case, female wasps lay eggs on young twigs. When the eggs hatch, the larvae cause the branch swelling which continues for nearly 2 years, causing galls as large as 3 inches in diameter before the adults emerge to make more galls on the leaves. Adults emerging from the leaf galls then make more twig galls, completing the cycle. Since a gall may contain up to 150 larvae, the potential for rapid population increase is great. A large pin oak may have hundreds or even thousands of galls after a few years of infestation.

Generally, even a heavy infestation of gouty or horned oak gall does not kill a tree. Over time, however, with increasing branch dieback, trees become unsightly. Unfortunately, there are no control measures that have proven very effective in controlling this pest on large trees. Although certain insecticide treatments have been shown to reduce the leaf gall stage, they also tend to kill off most of the predators and parasites that help to control the population. Results of long term studies at the University of Kentucky indicate that even treatment with systemic insecticides for several successive years can not eliminate the problem. Often outbreaks such as this run in cycles. Predators and parasites may eventually gain the upper hand and reduce the pest population. Unfortunately, many large pin oaks currently affected by gall wasp may not live long enough to benefit from this. Problems like this point out the wisdom of increasing the diversity of tree species in our urban forests.

The galls leading to the browning of leaves on white oaks are also caused by a tiny insect, the “jumping oak gall wasp” (*Neuroterus* sp.). In this case, the galls are only pinhead-sized, but there are hundreds of them on the underside of a single leaf. The button-like galls eventually drop to the ground, leaving a pock mark. Badly infested leaves usually turn brown and may even fall off, alarming people who are observing the trees. The galls are called “jumping galls” because each one contains an acrobatic larva, causing the fallen gall to appear to jump. This activity allows the galls to work farther into the litter under the tree where larvae are sheltered from adverse conditions. The snow cover that we had during the cold periods last winter may have provided additional protection, leading to the current population explosion. As with the pin oak galls, jumping oak galls almost never cause tree mortality. Natural enemies drastically reduce the population of this pest after a year or two, so control measures are not necessary. Raking and burning fallen leaves may help reduce the infestation the following year.

Although horned, gouty and jumping oak galls cause dramatic symptoms, they are not fatal. There are no effective treatments for large trees and, if there were, it would be too late to apply them when the symptoms are apparent. Keep in mind that such pests usually go through population fluctuations due to natural enemy buildup and climatic conditions. Note, also, that if pin oak had not been over-planted for the past 50 years, Extension centers would not be getting quite so many gall calls in 2010.

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