Oak Leafroller

Oaks are favorite hosts of a large number of native caterpillars that feed on the leaves throughout the growing season. In most cases, these caterpillars cause little damage and the feeding is seldom noticed. Predators of these insects such as birds and squirrels tend to keep native caterpillar populations in balance. Periodically, outbreaks occur that cause extensive tree defoliation that will severely weaken trees particularly when this occurs early in the spring. Two consecutive years of defoliation can result in tree mortality especially on newly transplanted trees, old trees and those stressed by other factors such as drought or root damage.

The oak leafroller, *Archips semiferana*, is one of a group of spring feeding caterpillars that roll, fold or tie leaves together with silk (*figure 1*). This insect has a wide distribution throughout much of the United States where it feeds on most species of oak as well as pear, apple and crabapple. Caterpillars produce silken threads from which they will spin down from branches. In severe outbreaks, silk threads can cover the bark and ground beneath the tree and the caterpillars dangling from threads are a severe annoyance to people (*figure 2*).

The adult oak leafroller is a small brown moth that is active in late spring to early summer. Following mating, the female lays eggs on twigs in the crown of its host. Eggs hatch the following spring coinciding with new growth and small green caterpillars feed by webbing together young leaves and concealing themselves in the folds of the leaf. As larvae grow in size, they will roll the margins of a single leaf and feed from within (*figure 3*). When disturbed, larvae spin down on silk threads that can eventually cover the bark and ground. In severe outbreaks, infested trees can be completely defoliated within weeks to a month of emergence of the caterpillars. Fully grown caterpillars are green and less than an inch long. They pupate within rolled leaves, or on bark or on vegetation beneath the tree. In late spring or early summer, moths emerge from pupae, mate and lay eggs on the bark where the insect remains until the next generation in the following spring.

**Management:**

In most years, populations of oak leafroller are minimal and maintained in low numbers by parasites and predators. When outbreaks develop, spray treatments are needed to prevent defoliation and to prevent the aggravation associated with the dangling caterpillars and silk threads. Organic and natural-based spray treatments are available to effectively suppress this pest. Usually one spray treatment during the period in which the caterpillars are active is
sufficient to prevent defoliation. On trees that cannot be treated with sprays, suppression can
be obtained with systemic injection of an insecticide into the lower stem or flare roots. This
treatment can be done in the late summer prior to the following year’s infestation or in early
spring coinciding with new growth. One systemic treatment can provide two years of insect
suppression.

On trees that have been severely defoliated, fertilization based on soil analysis is recommended
to promote new growth. Mulching the root zone of the tree and irrigating during dry periods
also aids in recovery following severe loss of leaves.

Figure 1. Oak leafroller caterpillars roll leaves together with silk.

Figure 2. Silk threads cover the bark and ground.

Figure 3. Oak leafroller caterpillar feeds on a leaf.