

Colorado Insect of Interest

European Elm Scale

Scientific Name: *Eriococcus spuria* (Modeer)

Order: Hemiptera (True Bugs, Aphids, Scale Insects, Hoppers, Cicadas, etc.)

Family: Eriococcidae (Eriococcid Scales)

Identification and Descriptive Features: The adult females found on twigs have a rounded body form with dark gray coloration and a distinct white fringe. An unusual feature of these insects is that their blood is red and they produce a reddish brown stain when crushed.



Figure 2. Mature European elm scale females and cocoons of males tucked under branch..

European elm scale is one of the most widespread and destructive scale insects in Colorado.

Prolonged infestations weaken branches, often producing premature leaf yellowing (*flagging*) and leaf drop. Heavy infestations cause dieback of twigs and branches. European elm scale can cause serious nuisance problems due to honeydew production with peak production during June and early July as the females mature. Sooty mold often grows on the honeydew, blackening tops of branches and root flares.



Figure 1. Mature female European elm scale and crawlers (small yellow objects).

Distribution in Colorado: Statewide where suitable host plants (e.g., American elm) are present. European elm scale is also associated with Siberian elm, but does not develop high populations on that host.

Life History and Habits: European elm scale spends the winter as second instar nymphs, packed into cracks on twigs and smaller branches. They are oval in general form and pale grey due to the light waxy cover of the body. In spring they resume development and the females swell greatly, becoming darker with a distinct waxy fringe. During late April and May male scales may also begin emerging from small white cocoons and mate with the females. However, males are not always produced and this species can reproduce asexually.



Figure 3. European elm scale nymphs along leaf veins during midsummer.

Eggs hatch within the body of the female and crawlers emerge over a period of several weeks, peaking between mid-June and mid-July. They move to leaves and settle on the leaf underside, the dark yellow nymphs almost always being found tucked next to main leaf veins. In late summer they migrate back to the twigs where they overwinter.

Management: European elm scale has some natural enemies, although these typically fail to provide a high level of control on susceptible hosts (e.g., American elm, English elm). Several species of parasitic wasps commonly kill some scales, causing the affected scales to be stiffened and puffed in appearance (i.e., scale "mummy"). Several general predators such as, predatory plant bugs, predatory mites, and spiders also kill many of the nymphs on leaves. On Siberian elm, competition with defoliators, such as elm leaf beetle and European elm flea weevil, probably kill many of the leaf inhabiting stages of the scale.

Horticultural oils sprayed on branches can control overwintering stages. Treatments should be applied before bud break since older scales are difficult to control with oils. Crawler stages can be controlled by applications of various insecticides made in late June, at onset of egg hatch. Repeat applications may be needed to maintain coverage through the 3-4 week period when crawlers are most active.

Soil applications of the systemic insecticide imidacloprid have provided excellent control of this insect for over two decades and is the standard insecticide treatment for European elm scale. However, in some locations resistance to these insecticides appears to have developed. At these sites imidacloprid - and other neonicotinoid insecticides (e.g., chlothianidin, dinotefuran) - no longer are effective.