

European Red Mite

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Entfact-205

The European red mite is another introduced pest in the US. It is a pest of nut, pome and stone fruits, and some berries. This pest damages leaves and causes fruit to russet. European red mites can have 6 to 8 generations per year, depending on the temperature. Summer generations may develop in as little as 14 days.

The adult female mites are brick red with white spots at the base of six to eight hairs on their back. The male mite is more slender and lighter in color than the female, with a more pointed abdomen. Eggs are red, globular and somewhat flattened (onion shaped) with a slender stalk on the upper side. European red mites overwinter as eggs laid in roughened bark around the bases of buds and spurs on small branches. During the summer eggs are laid on the underside of leaves. Egg hatch in the spring is closely correlated with bud development and begins close to the tight cluster stage. During the summer, eggs require 7 to 14 days to hatch.

All active stages of the European red mite injure the foliage by feeding with piercing mouthparts and removing cell contents, including chlorophyll. Moderate to high numbers of mites can cause the leaves to initially turn pale and with continued feeding the leaves turn bronze. Heavy mite feeding early in the season can reduce tree growth, yield, and also affect fruit bud formation for the following year. Some apple cultivars, such as 'Red Delicious' and 'Braeburn', are more prone to mite buildup and injury.

European red mites are rarely a problem on backyard apple trees. Predatory mites, ladybird beetles and the six-spotted thrips help to maintain these European red mite at non-damaging levels. This mite is considered a secondary pest, it typically only builds to damaging levels after its natural enemies have been depleted by insecticide applications used to control codling moth or other pests. **Minimizing insecticide usage and selecting insecticides that are least toxic to beneficial organisms will help to minimize problems with this mite.**

Monitoring

To monitor for mites, examine 5 hardened-off leaves from each of four scaffold limbs per tree. Commercial orchardists should examine at least 5 trees per acre. Certain varieties, such as Red Delicious, are more likely

to develop large numbers of mites, so be sure to make samples representative of the varieties in the orchard. Using a hand lens, count all active stages of pest and predatory mites. Predatory mites are more active and are tear-drop shaped. Determine the average number of European red mites per leaf.

The economic threshold for the mites varies with the time of year. A miticide is recommended early in the year (until April 1) if numbers of active mites exceed an average of 5 per leaf, during April and May when mite numbers exceed 10 per leaf, or the rest of the season if mite numbers exceed 15 per leaf. Some insecticide cover sprays are less severe on mite predators, consult *ID-92, Commercial Tree Fruit Spray Guide*, for a list of those sprays and their ratings against mite predators.

Management

Overwintering mite eggs should be controlled through the use of a delayed-dormant oil treatment, anytime between just before bud swell until half inch green. Control with dormant oil improves the closer to egg hatch.

Management of mites during the growing season is based on scouting and the use of miticides or summer oil treatments. Use of pyrethroids or other pesticide highly toxic to mite predators should be minimized to avoid inducing mite problems. Producers should alternate among these miticides such that a miticide with a different mode of action, is used with subsequent treatments.

Some producers are using these oil applications routinely in place of miticides. Care must be taken to avoid sulfur containing pesticides used within 14 days of an oil application in order to avoid phytotoxicity. Horticultural oils are phytotoxic at higher temperatures (above 90F and high humidity), and may affect fruit finish on some varieties. Oil provide an alternative to traditional synthetic miticides and are able to kill all mite life stages through suffocation.

For more information on reduced insecticide apple management programs, see *ENTFACT-201, Controlling Apple Insect Pests with Reduced Insecticide Usage*.

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