

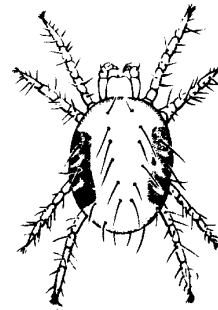
SPIDER MITES Acari: Tetranychidae Twospotted *Tetranychus urticae*, McDaniel *T. mcdanieli*, European Red *Panonychus ulmi*, Yellow *Eotetranychus carpini borealis*

DESCRIPTION

Adults range in size from 0.25 to 0.5 mm long and have eight legs (larvae have six). The **twospotted spider mite** is pale yellow or light green with two dark spots on either side of the dorsum. The twospotted spider mite is the most important species found on mint. McDaniel mites are translucent green to greenish-yellow with three spots on each side near the middle and two spots near the rear. European red mites are brick red to red-brown with white spots at the bases of the dorsal spines. Yellow mites are pale yellow or green with two or three pairs of small spots on the body.



Twospotted Spider Mites

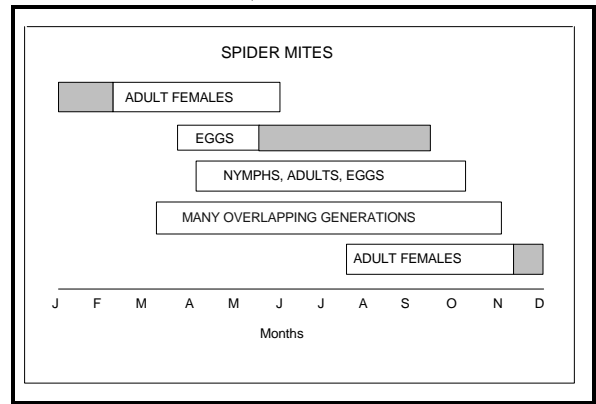


ECONOMIC IMPORTANCE

Spider mites feed by disrupting mesophyll cells and sucking up the cell contents including the chlorophyll. Injured leaves exhibit lower rates of photosynthesis, increased transpiration, deformed leaves, and lower chlorophyll content. This injury causes a mottling of the leaves that may become brown or bronze. Damage to foliage reduces the vitality of plants and, if leaves drop from the plant, reduces oil yield.

DISTRIBUTION AND LIFE HISTORY

These mites are distributed throughout the northwest. The twospotted spider mite, McDaniel mite, and yellow spider mite overwinter as females under loose bark, in cracks in the soil, and in other protected places in the orchard. The European red mite overwinters as an egg on twigs and branches of the tree. Females that overwinter emerge in the spring, disperse, and begin laying eggs on the leaves. Eggs hatch into larvae in four to six days. Development continues through the proto- and deutonymph stages to the adult. A complete life cycle requires one to three weeks. Larvae from overwintering eggs of the European red mite disperse to the young leaves on the peripheral foliage of the tree, usually in April. During the summer, this species lays eggs on the leaves and there are seven or eight generations each year. Adults of the twospotted, McDaniel, and yellow spider mites cease feeding in the fall and migrate to overwintering sites. The European red mite deposits the overwintering eggs on the tree. There are several overlapping generations each year. Integrated control is the most promising system for managing spider mites. The use of selective acaricides may be necessary in some crops, but they must be selected and used carefully to avoid upsetting the predator mite populations (particularly *Typhlodromus*



MANAGEMENT AND CONTROL

spp., *Amblyseius* spp.), which are the major natural enemies of planting-feeding mites. The need to control spider mites is based on the average number of mites per leaf and predator:pest ratios. In mint, if the average number of mites per leaf is more than 5 mites/leaf, treatment is justified. In mint, treatment may not be necessary if the predator:pest ratio is 1:10 or 20 spider mites/leaf, depending on the time of year. Timing of predator release is critical for the successful biological control of spider mites. For example, releasing 2,500-5,000 predators/ha in mid-June to mid-July, when spider mites first become established, can reduce spider mites to low levels in the fall and the following spring.

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