

SPIDER MITES Acari: Tetranychidae Twospotted *Tetranychus urticae*

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. Spider mites colonize the lower leaf surfaces and produce silk webbing. All motile stages and eggs are found on the lower leaf surface beneath the webbing.

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 mottled or stippled appearance to the leaves. Leaves become yellow, bronze or brown and drop from the plant. In severe infestations the leaves may be tied together with dirty webbing.

DISTRIBUTION AND LIFE HISTORY

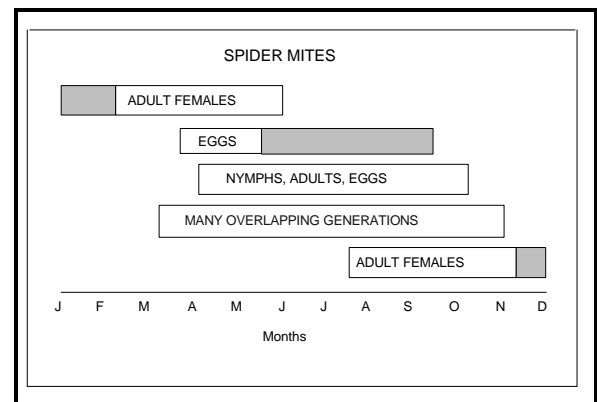
These mites are distributed throughout the northwest. The twospotted spider mite overwinter as females in cracks in the soil, in crop debris and in other protected places in and around the field margins. Females that overwinter emerge in the spring, disperse, and begin laying eggs on the leaves. Each female can lay as many as 20 eggs per day with a total of up to 300 eggs during her lifetime. Eggs hatch into larvae in four to six days and young develop to adults in 7 to 9 days depending on the temperature. Development continues through the proto- and deutonymph stages to the adult. A complete life cycle requires one to three weeks and there are many overlapping generations each year. When populations are high, mites climb to the top of a plant and secrete a web strand. In this way, some mites are carried by the wind and disperse downwind from infested fields. Severe infestations may occur downwind from infested crops such as beans, corn or seed fields and along dusty roads. Adults cease feeding in the fall and migrate to overwintering sites.

MANAGEMENT AND CONTROL

Overhead sprinkler irrigation may dislodge spider mites thereby reducing populations. Since potatoes are grown under optimum conditions, serious problems are not common unless the plants come



Spider mite colony and eggs



under stress due to lack of irrigation, diseases, or other factors. Integrated control is the most promising system for managing spider mites on many crops. The use of selective acaricides may be necessary in some fields, but they must be selected and used carefully to avoid upsetting the predator mite populations (particularly *Typhlodromus* spp., *Amblyseius* spp.), which are the major natural enemies of plant-feeding mites. The need to control spider mites is based on the average number of mites per leaf and predator:pest ratios. In general, if the average number of mites per leaf is more than 10 and there is less than one predator per 10 mites, treatment is justified.

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