

Twospotted Spider Mite

Twospotted spider mite (*Tetranychus urticae*) mite is the most damaging spider mite species in Colorado. In outdoor grown crops it can be injurious to an extremely wide range of plants, ranging from corn to pears. In yards/gardens it may be present on plants such as eggplant, beans, raspberries, roses, marigolds, and several deciduous shrubs. It is very common on indoor-grown plants and is almost always the species damaging houseplants, certain indoor-grown vegetables (e.g., cucumbers, tomatoes), and herbs. It is also a potentially serious pest of indoor grown *Cannabis*.

The adult twospotted spider mite is quite small, about 0.4 mm (ca. 1/20-inch), and is usually straw color to green. There is a pair of large darker spots on the side of the body. Both males and females are produced, with adult males being somewhat smaller than females. Females lay eggs on the surface of plants, usually on the underside of leaves, and the eggs are quite large in relation to the size of the mother. Eggs, and the shells of eggs that remain after hatching, can be very useful indicators for detecting the presence of spider mites.

Within a day or two after being laid, a minute six-legged stage (larva) emerges from the egg and begins to feed. It subsequently sheds its exoskeleton (molts) to a slightly larger 8-legged stage. Two molts follow and the adult form is produced which soon mates and begins to produce eggs. Under optimum conditions of high temperature and low humidity the entire life cycle is completed in just over a week. A life cycle of 12-15 days is more likely to occur under the conditions of indoor-grown hemp. Regardless, the life cycle is short and numerous generations will be produced in a 2-3 month period, potentially resulting in many thousands of spider mites



(Top) Twospotted spider mite adult females. Molted skins following molting and a single egg are to the left of the mites. Photograph courtesy of David Shetlar, The Ohio State University. (Bottom) Spider mites on the underside of a Cannabis leaf.



Leaf flecking symptoms produced by twospotted spider mite.

On outdoor-grown hemp, where natural controls are normally present (e.g., adverse weather events, predators) twospotted spider mite is likely to rarely, if ever, cause insignificant injury to the crop.

Acari: Tetranychidae

during the course of a crop cycle. Reproduction also may accelerate after flowering begins due to changes in the nutritional quality of plants that are favorable to spider mites.

Outdoors, twospotted spider mites can survive winter under leaf litter and other protective cover. Prior to overwintering they become semi-dormant and slow their metabolism, going into a condition known as **diapause**. The spider mites in diapause usually are orange-red, rather than the yellow-green during their active feeding periods. Changes in day length (short days) and cooler temperatures are most important in causing spider mites to go into diapause. Under continuous conditions of warm temperature and suitable light/dark periods (greater than 10 hours of light), such as occur with indoor production, twospotted spider mite will not undergo a dormant period.

Twospotted spider mite is probably the most important arthropod pest of indoor grown hemp, largely due to the absence of the more important natural controls in these conditions.



Extensive spider mite infestation of Cannabis flowers.