

# Two-spotted Spider Mite

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**SCIENTIFIC NAME:** *Tetranychus urticae* Koch

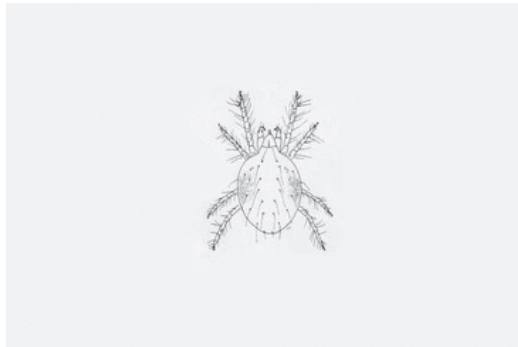
**CLASS:** Arachnida

**ORDER:** Acari

**FAMILY:** Tetranychidae



*Two-spotted spider mites (Frank Peairs, Bugwood.org)*



*Two-spotted spider mite adult (NC State Extension)*

## Description

### Adults

The eight-legged adult can be pale green, greenish amber, or yellowish. Usually having two (sometimes four) black spots on top, the two-spotted spider mite is about 0.4 millimeters long.

### Eggs

The spherical egg ranges from transparent and colorless to opaque straw yellow.

### Larvae

The six-legged larva is colorless, pale green, or yellow.

### Nymphs

Similar to the adult except in size, the nymph has eight legs and is pale green to brownish green. Large black spots may develop on each side.

## Biology

### Host Plants

Two-spotted spider mites have been reported on over 300 host plants, that include over 100 cultivated species. Violets, chickweed, pokeweed, wild mustard, henbit, vetch, and blackberry are common foci from which infestations develop on nearby crops.

## Damage

Two spotted spider mites pierce the epidermis of the host plant leaf with their sharp, slender mouthparts. When they extract the sap, the mesophyll tissue of the leaf collapses in the area of the puncture. Soon a chlorotic spot forms at each feeding site. After a heavy attack, an entire plant may become yellowed, bronzed, or killed completely. The mites may completely web over entire plants.

## Life Cycle

Two-spotted spider mites are important pests on more crops than any other arthropod in the Southeast. Though insects and mites are in a group called the Arthropoda (meaning jointed foot) because jointed legs are common to both, spider mites are not actually insects. They are more closely related to spiders, and they derive their name from the thin web which some species spin. In North Carolina, two-spotted spider mites overwinter as adults in the soil or on weed hosts such as violets, henbit, and hollyhocks. In mild winter weather, two-spotted spider mites continue to feed and lay eggs, although development in the winter is much slower than in the summer. From the eggs hatch six-legged larvae. They develop into eight-legged nymphs which pass through two nymphal stages. After each larval and nymphal stage, there is a resting stage. The adults mate soon after emerging from the last resting stage, and in warm weather the females soon lay eggs. Each female may lay over 100 eggs in her life and up to 19 eggs per day. Development is rapid in hot, dry weather. Each generation may take as many as 20 or as few as 5 days to mature. They often damage one species of plant quite heavily and then disperse to other hosts. When a plant is heavily damaged, the mites migrate to the outer periphery of the plant. From here, even the gentlest of breezes can carry them a significant distance to attack new hosts.

## Management Strategies

### Cultural control

If spider mite infestations are detected early enough, a daily misting or spraying with water can be an effective control.

### Pesticides

The use of foliar insecticides in hot, dry weather can induce spider mite outbreaks by killing the beneficial arthropods that would normally feed on the mites. In addition, a fungal pathogen attacks spider mites following short periods of cool, damp weather. Certain fungicides can eliminate this fungus and should be avoided for several weeks if plants are infested, and such conditions occur. The resting stages and eggs of the two-spotted spider mite are more tolerant to pesticides than the motile forms. Consequently, a second application of pesticide may be necessary at 4 or 5 day intervals in hot weather (7 to 10 days in cool weather) to kill those mites that may have survived the first application.

