

## Six-Spotted Mite<sup>1</sup>

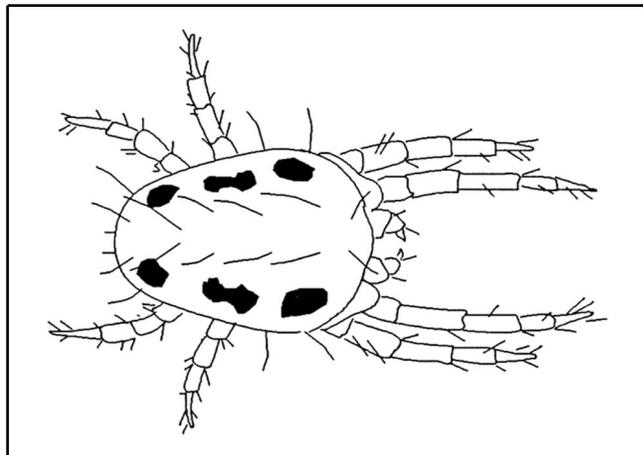
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The six-spotted mite, *Eotetranychus sexmaculatus* (Riley), was first mentioned as a sporadic pest on orange trees in Florida in 1886. This mite continues to be a spring season pest of occasional importance. Grapefruit appears to be a preferred host, although the mite can become a problem on oranges.

### Physical Description

**Adult:** The adult six-spotted mite is readily identified by its pale yellow to greenish color and the presence of one to three pairs of dark spots on the upper surface of the body. These dark spots sometimes are indistinct or missing. The female is plump, oval in shape and about 1/57th of an inch long (Figure 1). Many long hairs or bristles are present on the upper body surface. The male is smaller, thinner and has a somewhat tapering to pointed abdomen characteristic of the male sex in all spider mite species (Figure 2).

**Immature Mites:** (Figure 3) The three active immature mite stages look like the adults, but are smaller (Figure 4).



**Figure 1.** Adult female six-spotted mite.

**Eggs:** (Figure 5) Six-spotted mite eggs are round, clear to light yellow and have a short stalk or mast on the upper surface. Tiny silk strands are frequently attached to the stalk and secured to the leaf surface by the female mite (Figure 6).

### Behavior and Population Dynamics

The six-spotted mite differs from the Texas citrus mite and the citrus red mite by feeding primarily on the lower leaf surface. Leaves are first

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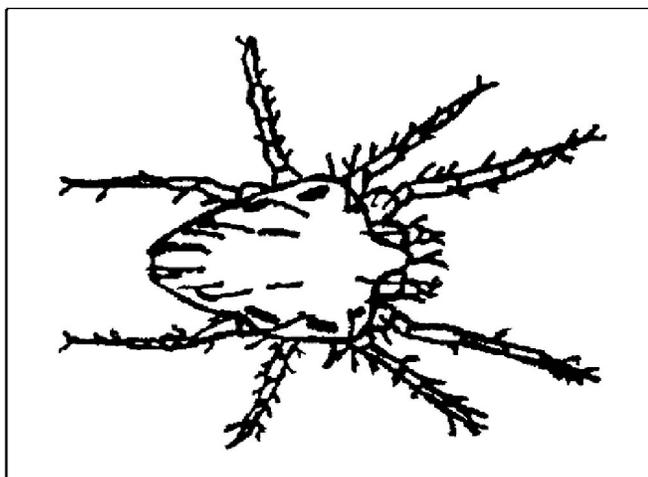


Figure 2. Adult male six-spotted mite.

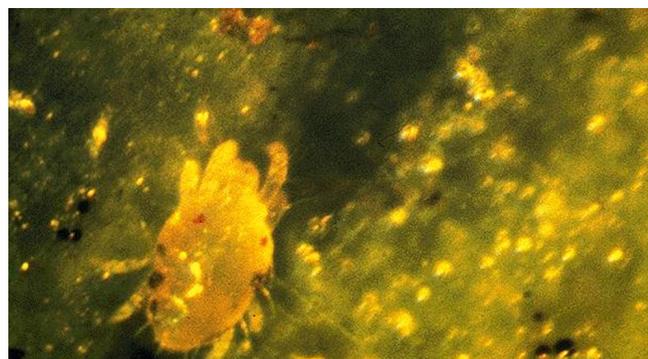


Figure 3. Immature mites.

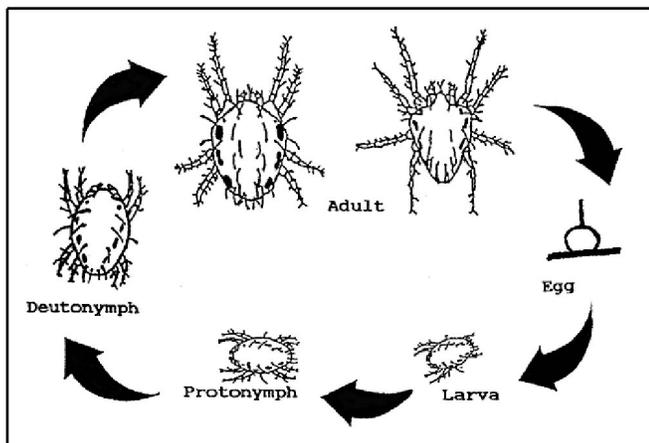


Figure 4. Six-spotted mite life cycle.

attacked along the petiole and the midvein. The mite lives in localized colonies on the underside of interior leaves with heavy infestations spreading to the outer canopy leaves. Eggs are deposited on the lower leaf surface. Silk webbing by the mite is obvious in the colonized areas and around the eggs. The mite is usually first evident on mature leaves around the lower skirt of the tree during March or April.

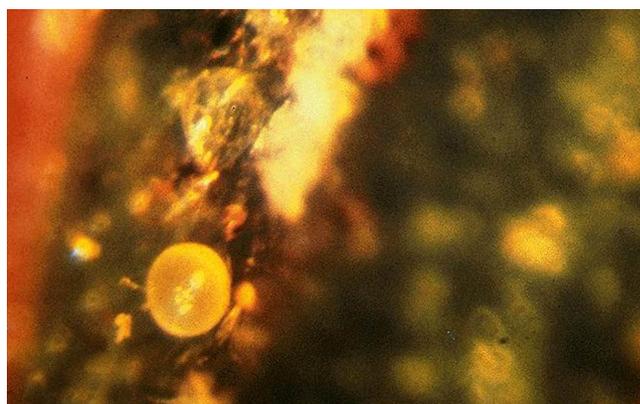


Figure 5. Six-spotted mite eggs.

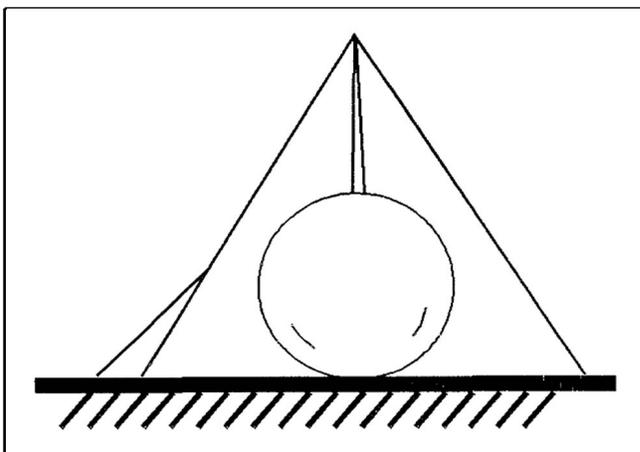
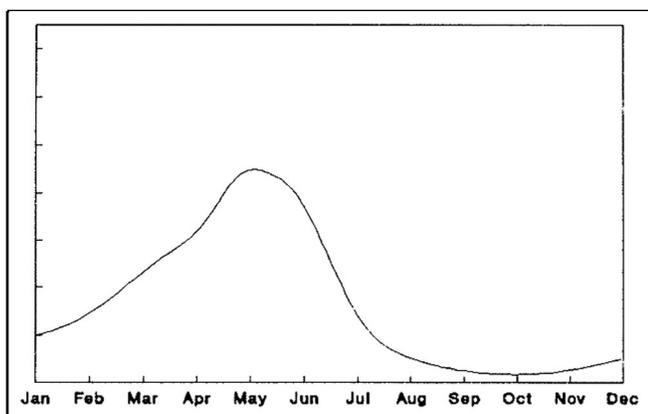


Figure 6. Six-spotted mite egg.

Generally, the six-spotted mite is a sporadic pest on Florida citrus. It is capable of rapid infestation and occasionally causes economic problems on grapefruit and oranges. This mite can be found on old leaves during the winter and on hardened new flush during the spring. Infestations are distinctly seasonal and occur in late winter and spring, with populations building rapidly from January through May. During the remainder of the year, very few six-spotted mites are present (Figure 7). The mite overwinters on citrus in all stages in Florida with large populations reported following colder Decembers. The mite is found through-out the citrus producing areas of the state. It is more abundant in the central, north and west areas than along the east coast or in the south. Between 1956 and 1971, the occurrence of this mite was relatively constant. Since 1983, the six-spotted mite has been rarely found on citrus.

The six-spotted mite feeds in colonies on the underside of citrus leaves near the midvein, larger veins and/or on the petioles. A distinct depression



**Figure 7.** Six-spotted mite population curve.

usually forms on the lower leaf surface (Figure 8) where a developing colony occurs. Raised yellow areas develop on the upper leaf surface (Figure 9) immediately opposite the site of established mite colonies. The yellow blistered areas (Figure 10) converge on the upper leaf surface as infestations increase. Heavy infestations cause the leaves to curl, twist, and eventually turn bright yellow.



**Figure 8.** Depression on lower leaf surface.



**Figure 9.** Raised yellow areas on upper leaf surface.



**Figure 10.** Yellow blistered area indicates increased infestation.

Severe defoliation usually follows heavy infestations of this mite. Fruit infested around the stem end reportedly may turn yellow and drop. However, when present, the mite is generally more abundant on leaves than fruit.

## Monitoring Techniques

There is no established method for monitoring spider mites on Florida citrus, and economic threshold data on the three species affecting Florida citrus is lacking. However, certain control methods are available.

## Six-Spotted Mite Control Recommendation

### Biological Control

Several predaceous insects and mites and a fungal disease have been identified as attacking one or more of the three spider mite species on Florida citrus.

Six-spotted mites are controlled naturally by any of the following biological control organisms listed in Table 1.

### Chemical Control

Growers should be alert for potentially injurious populations of this mite between March and June. Normal spray routines between March and June that include one of the commercial miticides listed in the *Florida Citrus Pest Management Guide: Spider Mites*

**Table 1.** Biological Control for Six-Spotted Mites.

<b>Common Name</b>	<b>Scientific Name</b>
Thrips	<i>Scolothrips sexmaculatus</i> (Pergande)
Lady beetle	<i>Stethorus utilis</i> Horn
Mealywing	<i>Semidalis vicina</i> (Westwood)
Tan mite	<i>Galendromus helveolus</i> (Chant)
Shiny button mite	<i>Iphiseiodes quadripilis</i> (Banks)
Yellow mite	<i>Typhlodromalus peregrinus</i> (Muma)
Long haired mite	<i>Amblyseius aerialis</i> (Muma)
Fungus	<i>Entomophthora floridana</i> Weiser and Muma

will effectively control six-spotted mites in commercial citrus groves.