

## Spider Mites on Tomatoes

by Bob Bauernfeind

Spider mites are the cause of mid-summer woes for tomato growers. Often times, plants taking on a bronzed appearance (Figures 12). Upon closer inspection, stippling can be seen on individual leaves (Figure 13). Affected leaves eventually die and turn brown (Figure 14).



Figure 12



Figure 13



Figure 14

While spider mites are generally present in late spring and early summer, their initial populations levels are low. However, because mites have relatively short life cycles (under ideal conditions, a generation can be completed in a weeks time) and because hot dry summer conditions favor developmental rates, their populations rapidly escalate. Although small in size (Figure 15), the cumulative effect of many mites results in the rapid deterioration of tomato plants. In fact, by the time damage becomes apparent, many generations of mites have already occurred, and the present population consists of all life stages (Figure 16).

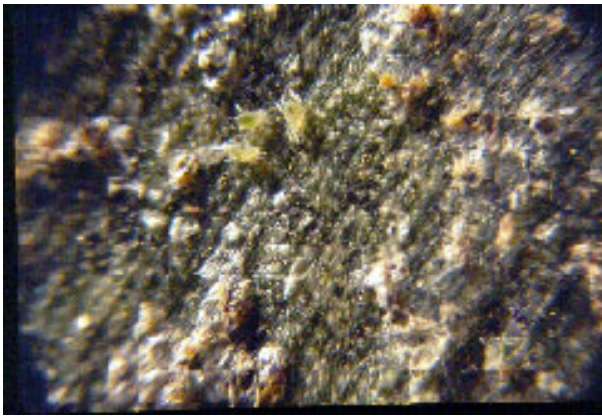


Figure 15

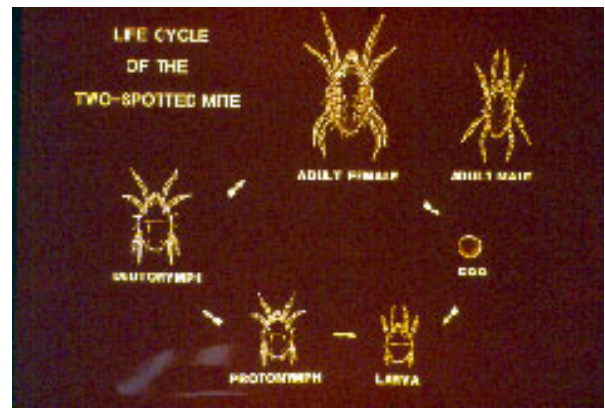


Figure 16

Spider mites tend to congregate on lower leaf surfaces, usually beginning on bottom leaves and working their way to upper leaves. Spider mites damage plants by inserting their stylet mouthparts into individual plant cells and withdrawing cellular liquids and contents. Removal of chlorophyll results in the aforementioned stippling. The coalescence of dead cells results in the bronzed/brown appearance of leaves/plants.

Plants in this late stage of mite activity can be saved. Horticultural oils, horticultural soaps and Kelthane are the 3 most popular materials used to combat spider mite infestations. The key to mite control is **thorough spray coverage** and **timely follow-up treatments**.

**Thorough spray coverage** is especially important when using oils and soaps because these two materials require direct contact with the active mite stages. Once dried, oils and soaps offer no residual control. While Kelthane does have some residual capabilities, thorough spray coverage is still critical when attempting to control mites. Factors complicating thorough coverage include: mites favoring undersides of leaves; mites concentrated on lower leaves, many of which lie on the ground; dense foliage; a webbing (produced by mites) which shields mites from miticide treatments.

**Timely follow-up treatments** are required because initial spray treatments have little effect against mite eggs. And once 6-legged larvae emerge from eggs, they proceed with unimpeded development. Thus the necessity of the second spray treatment application **2 to 3 days** after the initial treatment. All eggs will have hatched and no mites will have attained adult status to deposit additional eggs to begin the mite population buildup anew. As with the first spray treatment, thorough coverage must be attained with the follow-up treatment. Once mite populations have been eliminated, plants will produce new foliage, and regain a healthy form.

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