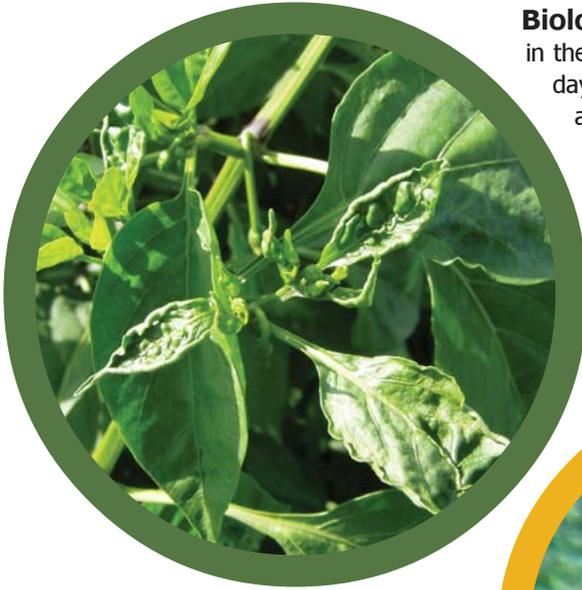
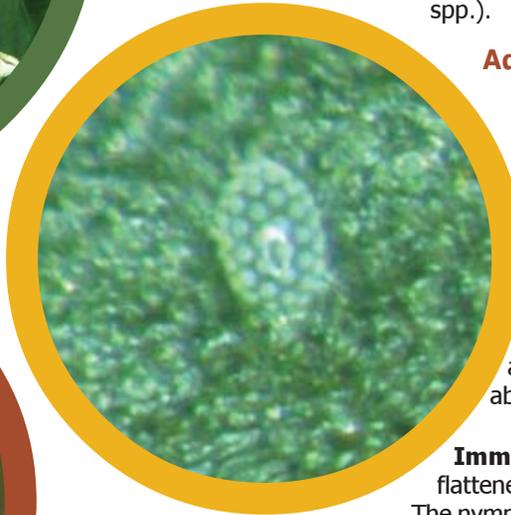


Broad Mite: *Polyphagotarsonemus latus*



Biology & Lifecycle: Eggs are laid singly on the undersides of apical leaves, in the depressions of small fruit and on flowers. The larval stage feeds for 2-3 days and develops into a quiescent nymphal stage. The life cycle only requires about 7 days under optimal conditions of 75°F and high humidity. The mites can disperse by hitching a ride on the legs of adults of the sweetpotato whitefly, *Bemisia tabaci*.

Environmental Factors: Broad mites may be present year round, but are more abundant during the warmer months in the spring and fall. The mite may overwinter on volunteer crop plants and weeds, including pigweed (*Amaranthus* spp.), beggartick (*Bidens* spp.), jimson weed (*Datura* spp.) and galinsoga (*Galinsoga* spp.).



Adult: Very small, requiring a 14X hand lens to be observed (**Figure 4**). Whitish and oval with four pairs of legs. Females have a white stripe on their backs and whip-like hind legs. Males are smaller than the female, lack the stripe and carry the females with enlarged hind legs (**Figure 3**).

Eggs: Eggs are elliptical, colorless and translucent and are covered with about 30 whitish bumps (**Figure 2**).

Immature stages: Larvae are whitish, flattened and oval with three pairs of legs. The nymphal or pupal stage is quiescent, clear and pointed at both ends (**Figure 3**).

Host range: Over 60 plant families host broadmites. Vegetables that are attacked include tomatoes, eggplant and pepper, although damage is most severe on pepper.

Damage: Adults and larvae use their piercing-sucking mouthparts to inject a toxin which causes leaf petioles to elongate (**Figure 6**); leaves to become twisted, hardened and shrunken; and vegetative and flower buds to abscise. Often the damage is the first indication of an infestation and is easily confused with herbicide injury. If damage is severe, the plants may not recover and put on new growth even after the mite populations is removed with pesticides.



Figure 1. Pepper plant damage due to broad mite infestation. Photograph by: David Schuster.

Figure 2. Broad mite egg, notice the bumps on the surface. Photograph by: David Schuster.

Figure 3. Male carrying female nymph. Photograph by: Elio Jovicich.

Actual Size:



Adult

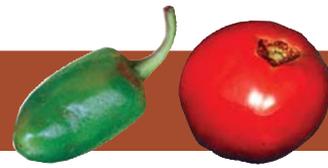
Less than .02mm or 1/50 inch

Monitoring:

Scouting: The undersides of very young leaves should be examined with a hand lens or leaves should be collected and examined with a dissecting microscope.

Action Thresholds: Although no threshold has been developed, as few as 10 mites per pepper plant can cause injury.

Broad Mite: *Polyphagotarsonemus latus*



CULTURAL CONTROLS:

Field Manipulations: Weeds within and around fields should be destroyed, although the wide host range makes this less effective.

The movement of people or equipment from infested to uninfested areas should be avoided.

NATURAL ENEMIES:

- Predatory mites and pathogenic fungi are the major natural enemies of broad mites. Inoculative releases of the predatory mites *Neoseiulus californicus* and *N. barkeri* may be used for biological control, especially in greenhouses.



CHEMICAL CONTROLS:

- Miticides should be applied when the presence of mites is first observed. Sulfur has long been used to manage broad mites, but endosulfan (cyclopropane organochlorine, 2A) and other new miticides are effective.

RESISTANCE MANAGEMENT:

- No resistance has been reported in Florida.
- Rotation of products of different chemical classes is an important resistance management tactic.



Figure 4. Broad mite adult. Photograph by: Dave Schuster.

Figure 5. Seedling damage. Photographed by: Elio Jovicich.

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Figure 6. Broad mite damage. Photograph by: Dave Schuster.

References:

Capinera, J. L. 2001. Handbook of Vegetable Pests. Academia Press, San Diego, CA.

Fasulo, T. R. 2000. Broad mite, *Polyphagotarsonemus latus* (Banks) (Arachnida: Acarina: Tarsonemidae) UF/IFAS EENY-183, http://creatures.ifas.ufl.edu/orn/broad_mite.htm.