Class Arachnida, Spiders and mites

Order Acari, Mites and ticks

The class Arachnida includes spiders, mites, scorpions, and related 8-legged arthropods that are not insects.

The two largest orders of arachnids are spiders and mites. Arachnids have chelicerae that are fang-like or pincher-like mouthparts for feeding. Like all adult arachnids, most adult spider mites and ticks have eight legs, while first instars have only six. However, eriophyid mites, as discussed in the pest section, have only four legs. Most mite families are predaceous. Only a few families are phytophagous and consume plant juices by sucking out cell contents.
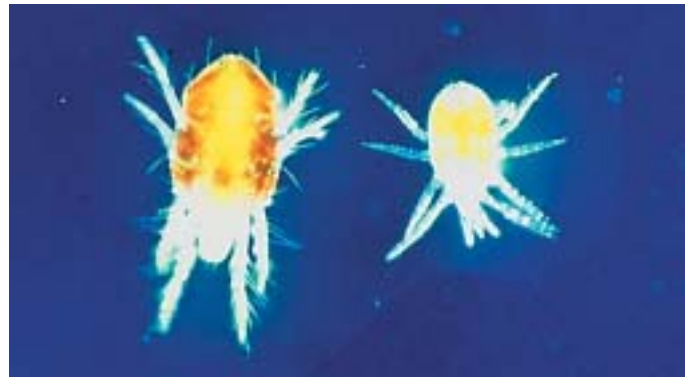
Predatory mites

Family Phytoseiidae

Description and life history: There are several families of predatory mites, but the phytoseiids are the most important for agriculture and horticulture because they are voracious predators of spider mites. Many of these predatory mites are commercially available. Phytoseiid mites are 0.5–0.8 mm long and live in the soil or leaf litter. They feed with a pair of needle-like chelicerae which, when inserted into a plant or herbivorous mite, allow the mite to suck out juices.

Prey species: Although these mites almost always prey on other mites and small insects, many can also feed on honeydew or pollen during times of prey scarcity. Many phytoseiid mites are generalists, but a few have specific prey requirements. Phytoseiids are very effective control agents due to their short generations (1 week), high fecundity (40–60 offspring per female), and hearty appetites (20 spider mites/day while developing and 10/day for 2–3 weeks as an adult). *Phytoseiulus persimilis* is a specialist mite that controls webspinning mites such as the twospotted spider mite.

Phytoseiid mite predator of spider mite. (300)
Photo: John Davidson

Spider mite (left) and phytoseiid mite (right). (301)
Photo: John Davidson

Predatory mite in spider mite colony. (W43)
Photo: Whitney Cranshaw

Phytoseiid mite predator of spider mite. (299)
Photo: John Davidson