

Clover Mite, *Bryobia praetiosa* (Acarina: Tetranychidae)

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The clover mite is a regular spring and fall invader in homes, especially those recently constructed. It has also been found, although not commonly, on bedding plants and perennials in Pennsylvania greenhouses and garden centers. Several other mites in the genus *Bryobia* also occur in Pennsylvania and are difficult to distinguish from clover mite, except through host and habit.

Hosts and distribution: Clover mite feeds on clover, for which it is named. It also has a long list of herbaceous hosts, including turf grasses and other low-growing plants. Grass that is over-fertilized is especially attractive to this pest. Occasionally, clover mite is found in greenhouses and garden centers, and recently we have noted damage to several hosts, including impatiens and lobelia.

Brown mite, *B. rubrioculus*, is a related species found on aerial portions of deciduous and coniferous trees. It can be a serious pest in fruit trees but is not known to cause economic damage to ornamentals. *Bryobia kissophila* is a European species that has been collected occasionally in Pennsylvania; it is restricted to ivy. Clover mite and brown mite are distributed worldwide.

Identification: *Bryobia* species are difficult to separate in the adult stage but the two most common species, clover mite and brown mite, can easily be distinguished as larvae. Larvae of all species are rounded, almost disklike, and salmon- to pink colored. But clover mite larvae have broadly rounded dorsal body setae while the dorsal setae of the brown mite are longer and more slender.

The adult body is oval, flattened dorsally, and is dark green or occasionally dark red. The posterior body margin may appear ridge-like and bears small, fanlike setae. Clover mites do not have the long hairlike dorsal setae normally found on other spider mites. Anteriorly, clover mite has 2 pairs of elongate, setae-bearing projections over the rostrum (Fig. 1).



Fig. 1. Clover mite nymph emerging from chrysalis. Propodosomal protuberances are shown at arrow.



Fig. 2. Adult (female) clover mite.

Clover mite adults are larger than tetranychid spider mites, such as twospotted and spruce spider mites. Females are 0.75 mm long (1/64th inch) and can easily be seen without magnification. Their legs and mouthparts are pale in contrast to the dark green or red body. The first pair of legs is almost twice as long as the other legs. These long, pale legs may be mistaken for antennae as the mite walks over the substrate, using the front legs to feel their environment more than for support (Fig. 2).

Clover mite eggs lack the dorsal hairlike stipe found on some spider mite eggs. They are round and generally dark red. Eggs are deposited singly, usually in a protected place, but when populations are high eggs may appear to be grouped.

Life history: Clover mite is one of the "cool season" mites. They overwinter predominantly in the egg stage in Pennsylvania, but some immatures and adult females may survive in protected areas. With the first warm days in spring, overwintering eggs hatch; the females that survive winter begin to deposit eggs. Overwintering immatures start to feed and complete their development. These events usually occur when temperatures are between 28-46°F for one week and result in delayed hatches, or "broods," of the spring generation – one resulting from the overwintering eggs, one from spring eggs, and another from eggs deposited by females that have developed from overwintering immatures. Overwintering adults are usually gone by mid-June.

As is typical of "cool season" mites, clover mite populations are low in summer. This mite takes it to the extreme, however, and actually oversummers, or aestivates, in the egg stage. In fall, when the daily maximum temperature drops below 70°F, these eggs hatch and fall populations result. There are multiple generations of clover mite each year. Males are not known in the United States; females reproduce parthenogenetically.

Damage and detection: Clover mite is one of the easiest spider mites to diagnose. First, because of its size, it can be seen with the naked eye. Secondly, the feeding damage on succulent growth of herbaceous plants is characteristic. Initially, the damage may resemble symptoms of leaf miners. Clover mite creates long, winding trails composed of numerous pale spots (Fig. 3) on the upper leaf surface of hosts. The trails resemble scratches but are characteristic of clover mite feeding.

On turf grass, clover mite causes silvering of growth, especially in early spring. This is best observed from a slight distance and may resemble winter desiccation. In extreme cases, clover mites can kill grass and other low-growing plants.

As a household pest, clover mite can also damage furnishings, walls, and carpet. The damage is not from feeding but from the stain left behind when the mites are crushed in



Fig. 3. Clover mite feeding damage on impatiens.



efforts to remove them. The red or green stain is similar to grass stain and is just as difficult to remove. Clover mites will not survive indoors due to lack of host material and the high temperature and low humidity found in most homes.

Management strategies: Clover mite populations on herbaceous plants can be controlled, if necessary, with any miticide. In most cases, populations are too low to cause economic damage on these plants, and any minor damage will be covered by new growth. On fruit trees, brown mite often causes economic damage and controls are often warranted.

Prevention and control of clover mites that enter dwellings requires some planning. Clover mite females usually climb nearby vertical surfaces to deposit eggs. If this surface is the foundation of a home, larvae hatching from the eggs may enter the building accidentally. The larvae are attracted to light and will gather at windows, where they are trapped and die quickly. To prevent their entrance, caulk openings around windows and doors and otherwise seal the window as much as possible. On the outside of the house, modification of the exterior planting will have a significant effect. Eliminate turf or any low-growing herbaceous plants within 2-3 feet of the foundation. A "no-host zone" will act as a barrier to keep the mites at a distance.

Another factor in preventing clover mite outbreak is reduction of fertilizer to turf areas. The succulent growth following fertilization is ideal for mite feeding, and well-fed, lush grass adjacent to a building invites invasion. If necessary, a band of insecticide can be applied around the foundation to kill mites before they enter the structure. Application of an insecticide inside the home is rarely recommended.

References

Jeppson, L.R., H.H. Keifer, and E.W. Baker. 1975. Mites injurious to economic plants. Univ. Calif. Press. Berkeley and Los Angeles. 614 pp.

Lehman, R.D. 1982. Mites (Acari) of Pennsylvania conifers. Trans. Amer. Entomol. Soc. 108:181-286.