

This stage is often considered as fourth stage called pupa, false pupa or quiescent nymph. Dispersal happens when the adult males use their fourth pair of legs to carry around young pharate females (quiescent nymphs) that are still in their larval cuticle. Wind, insects and man can also disperse the mites passively. Mating occurs as soon as the adult female emerge from the larval cuticle. Broad mites have no eyes.

### Management

#### Mechanical control

- Remove affected apical shoots during early stage of infestation.
- Water spray on the underside of the leaves to suppress the population.

#### Botanical

- Spray *Vidi Greenpath*: 2 ml/litre with Adpro Shootin 0.3 ml/litre of water. Two sprays @ weekly interval.

#### Chemical

- Spray wettable sulphur 80% WDG @ 3 g/litre of water. **SP: 5 days.**
- Cyenopyrafen 30% S.C (Commercial name KUNOICHI) 0.5 ml/litre of water. **SP: 15 days.**



- Fenazaquin 10% EC (Magister) 1.5 ml/litre of water. **SP: 20 days.**

#### Biological Control

- At early stage of infestation, release *Blaptostethus pallescens* (anthocorid) @ 1000 nymphs or adults per acre at weekly interval.



#### Note:

- Spraying should be done thoroughly, at the underside of young leaves.
- SP: Safety Period

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## Broad mite *Polyphagotarsonemus latus* (Banks) Infesting Mulberry and its Management



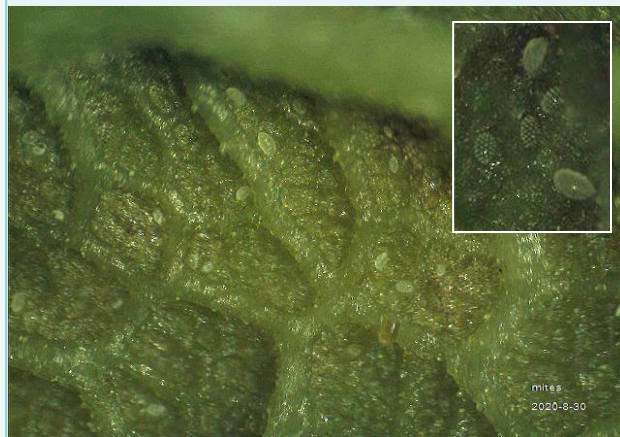
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Around 15 species of mites infest the mulberry plants across the world, more than half are reported from India. *Tetranychus equitorius* and *T. ludeni* are very common in mulberry. The red spider mite, *Eutetranychus orientalis* had been reported from mulberry gardens of Coonor. The yellow mites or broad mites, *Polyphagotarsonemus latus* (Banks) (Acari: Tarsonemidae), was also reported from mulberry gardens of SSBS Coonor. It was a minor pest in the beginning and currently they have become a major pest, causing severe damage to the mulberry crops and the pest is spreading at a faster pace. During 2019-20, broad mites have caused huge economic loss to the sericulture industry in many parts of Karnataka and Tamil Nadu. Broad mites are highly polyphagous and attacks numerous plant crops from diverse families and covering more than 250 species of plants.

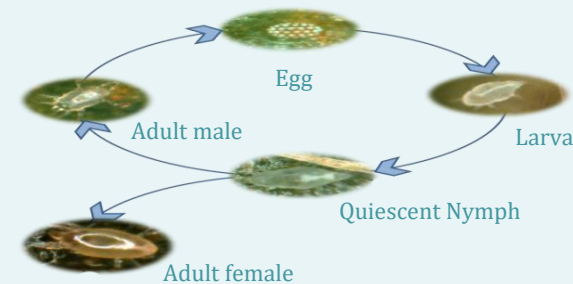


### Damage symptoms

The broad mites prefer young, growing tips of mulberry and as a result the younger leaves are badly damaged. The pest mainly attacks on the adaxial surface of the young leaves, which tends to cause the leaf to turn brown and curl upwards or downwards. The highest degree of infestation results in the leaf and shoot growth severely damaged by way of curling of leaf margins, firmness of infested leaves, necrosis of growing points, aborted buds and growth inhibition. In heavily infested mulberry garden single mulberry leaf contains 1000 to 4000 mites population, where as the ETL for broad mites is 5 mites/leaf. Although there is no evidence that *P. latus* transmits plant viruses, the damage caused by the broad mites may be mistaken for virus or herbicide damage. Symptoms of attack is visible even after the mites have been controlled.



### Life cycle of Broad mites



The broad mites complete a generation in 4-7 days under optimal conditions (at 25°C temp. & high humidity). The life cycle has egg, larva, and adult stages. An adult female can lay approx. 30-40 eggs. A sex ratio of 1:4 (male: female) is observed. Female broad mites lay their eggs mainly on the ventral surface of the young mulberry leaves. The eggs are elongated, oval, firmly attached to the surface and are rather large (about 0.07 mm) compared with the subsequent, active stages. They are transparent and speckled with white dots. The larvae have three pairs of legs adults possess four pairs. After moulting to the third larval stage the larvae stay in their cuticle for one or two days and then emerge as adults called quiescent nymph. The male use their fourth pair of legs to carry around young pharate females (quiescent nymphs) that are still in their larval cuticle. Mating occurs as soon as it emerge from the larval cuticle. The emerging adult mite is roughly 0.2 mm long, oval, broad and pale yellow or yellow-green in colour, depending on the type of food. Females have a white stripe on their back.