

[Article ID : 01/X/01/1021]

MURANI MITE (*Polyphagotarsonemus latus*) – A SERIOUS PEST OF CHILLIES

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Abstract

Chilli has become an important spicy component in everyone's food everywhere. Cultivation of chilli is being affected now a days by a broad range of pests particularly mites. One such mite called the yellow murani mite (*Polyphagotarsonemus latus*) causes serious damage and yield loss in the chilli crop. The farmers need more knowledge in managing the mites and in controlling them. This review articles gives almost all details regarding this non insect pest.

Keywords : chilli , curling , mite , stunting

Introduction

Chilli is one of the most important commercial spice crop of India. The botanical name of chilli is *Capsicum annum*. It is grown widely all over the world. There are almost 400 different varieties of chillies all around the world. It is called by various names like bell pepper, hot pepper, sweet pepper, etc.. . The world's hottest chilli is "Naga Jolokia" that is widely cultivated in the hilly terrain region of Tezpur, Assam. The biting pungency of chilli is due to the presence of a pigment called capsaicin. More than 20 species of pests have been reported attacking leaves and fruits of chillies. Thrips and mites causes a major damage to the pest. Mites are becoming a major serious pests now a days . The yellow murani mite *Polyphagotarsonemus latus* belonging to the family Tarsonemidae has become an emerging non insect pest in chilli crop. This article briefly explains about the host range, biology , symptoms of damage and management of this serious non insect pest.

Host Range

This pest is a polyphagous pest and affects crops like cowpea , green gram , horse gram , pillipesara , sesamum , lablab , jute , cotton , potato , tomato , brinjal , cucurbits , tea , beans and amaranthus.

Biology and Ecology

- Adults are large, oval and green yellowish bearing 4 legs. The larva or nymph are tiny, translucent white.
- Early winter is more favourable for adult forms and mid-winter for apterous forms are observed in large number.
- They are responsible for spreading the infestation from plant to plant and establish new colonies.



Figure.1 Adult



Figure.2 nymph

Life Cycle

The life cycle of this yellow mite has three distinct stages namely egg, nymph and adult. The figure.1 displays the complete life cycle of murani mite.

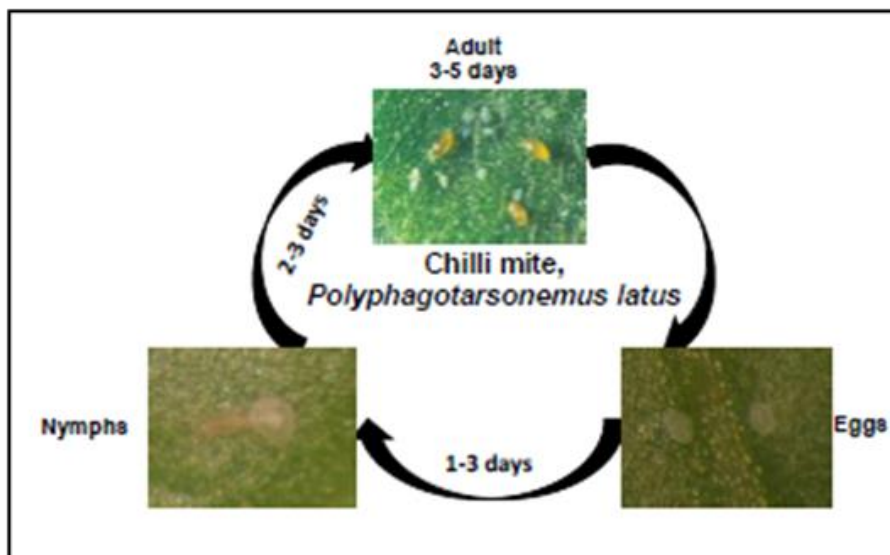


Figure.3 life cycle of yellow murani mite.

Egg : The eggs are minute and oval in shape laid on the ventral side of young leaves. The incubation period lasts for about 1-3 days.

Nymph: After hatching, the larval is sluggish with three legs and this stage lasts for a day. After a day it gets transformed into a quiescent nymph. First instar nymph or larval period varies from 12h – 1.5 days and the second nymph or larval period is of 12hr. Total nymph or larvae period lasts for 1-2 days.

Adult : The adults measure 0.1 mm in length and bear 4 pairs of the legs. They are yellowish green in colour and translucent in nature. Adult longevity varies from 3 - 5 days. The total life cycle is completed within 6.5 – 10 days.

Nature of Damage : Both the adults and nymphs sucks sap from the young leaves and fruit tips.

Symptoms of Damage : Sudden curling and crinkling of leaves followed by development of blister patches. Severe stunting of growth and death of plants. Petiole in a few cases becomes elongated and it is referred to “rat tail” symptom. Later they stop growing and die.



Petiole elongation

Figure.4



Stunted growth

Figure.5



Figure.6 downward curling

Management

Cultural practice :

- Growing tolerant varieties like Guntur types
- Management of nutrients and water will also helps in reducing the mite population.

Biological control: The potential predator *Amblyseius ovalis* controls the population of yellow murani mite in chilli ecosystem.

Chemical management:

- Karnataka: Spraying of Fenazaquin 10 EC @ 2 ml/lit or Vertimec 1.9 EC @ 0.2 ml/lit or dicofol 18.5 EC @ 2.5 ml/lit or Wettable sulphur @ 3 g/lit for management of mites.
- Tamil Nadu and Spice board: Spray dicofol 18.5 EC @ 2.5 ml/ lit or wettable sulphur 50WP @ 5 g m / lit of water and avoid application of monocrotophos.
- Andhra Pradesh: Spray Dicofol (kelthane) 5ml or Wettable sulphur 3g/ Micronised sulphur 2.5g/litre of water. In severe conditions repeat the spray with 4-6 days interval.
- National Horticulture Board: Spray phasalone 3ml/litre (Severe conditions) or Wettable sulphur 3g/litre of water or dicofal 5ml/lit of water.

Conclusion

Mites are generally non insect pests which attacks the crops and brings about serious yield losses. Different mites causes peculiar symptoms in crop plants. In chillies, the mite *Polyphagotarsonemus latus* causes crinkling and curling of leaves and finally brings about plant death. It is a polyphagous pest and attacks many other field crops too. The recommended

chemical acaricides controls these mites to an extent. For effective control, an extensive research is need which in turn will be of great benefit to the farmers.

References

- A. Regupathy, R.Ayyasamy. 2019. A guide on crop pests. Namrutha publications. 102pp.
- Cho, M.R., Jeon, H.Y., La, S.Y., Kim, D.S. and Yiem, M.S., 1996. Damage of broad mite, *Polyphagotarsonemus latus* (Banks), on pepper growth and yield and its chemical control. Korea J. appl. Ent.35: 326-331
- Lagarmalai, J., Grinberg, M., Perl-treves, R. and Soroker, V., 2009. Host selection by the herbivorous mite *Polyphagotarsonemus latus* (Acari: Tarsonemidae). J. Insect Behav. 22: 375-387