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Managing Yellow Mites on Chili Plants: Effective Strategies for Control and Prevention

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Chilli, scientifically known as *Capsicum annuum*, is a crucial spice crop in India, where it is commonly referred to as 'Mirchi.' It is widely cultivated across India for its pungent and non-pungent fruits. In addition to chilli, sweet pepper, bell pepper, and green pepper are also grown in the country. India is the world's largest producer, consumer, and exporter of chilli. In 2022, Andhra Pradesh was the leading producer, with an estimated production of approximately 700,000 metric tons, followed by Telangana, Madhya Pradesh, and Karnataka. The yellow mite, also known as the broad mite (Scientific name: *Polyphagotarsonemus latus* Bank), is a highly destructive pest of chilli crops, causing significant yield losses. Infestation by these mites can result in yield reductions of 20-80%. Among various mite species, the yellow mite is particularly severe in its impact on chilli plants.

Signs of mite infestation in chilli plants

- **Downward Curling and Crinkling:** Leaves curl downward and become crinkled.
- **Brittle Leaves with Blisters:** Leaves turn brittle and develop blisters on the underside.
- **Inverted Boat Shape:** Leaves may appear boat-shaped.
- **"Rat Tail" Petioles:** Elongated leaf stalks, known as the "rat tail" symptom.
- **Clustering of Young Leaves:** Young leaves bunch at the branch tips.
- **Dark Green Leaves:** Affected leaves may turn dark green.
- **Drying Tips and Shedding Buds:** Growth tips dry out, buds shed, and leaves fall off in severe cases.
- **Stunted Growth and Plant Death:** Causes stunted growth and can lead to plant death.

Identification of pest

Egg: Oval shaped eggs and white in color
Nymphs: white in color
Adult: Large, oval and broad and yellowish in color


Damage Stage: Nymphs and adults


Stage of occurrence: Seedling to fruiting stage

Preventive Measures for Mite Infestation

- **Grow Mite-Tolerant Varieties:** Choose chilli varieties that are resistant to mites.
- **Border with Maize:** Plant 3-4 rows of maize around the chilli crop.
- **Field Sanitation:** Remove and destroy crop residues and weeds.
- **Manage Watering:** Avoid both water stress and water logging.
- **Prune Infested Parts:** Regularly prune infested leaves or remove symptomatic plants.
- **Overhead Irrigation:** Use sprinklers for irrigation.
- **Limit Chemical Use:** Reduce excessive application of chemicals.
- **Crop Rotation:** Rotate with non-host crops like legumes and cucurbits.
- **Regular Monitoring:** Check crops regularly to detect mites early.
- **Neem Spray:** Apply neem seed kernel extract or neem oil every 10 days.
- **Use Natural Predators:** Introduce predatory mites like *Amblyseius ovalis*.
- **Economic Threshold Level (ETL):** Act when there are 5 to 10 mites per leaf.

Management

Encourage Predators: Use *Amblyseius ovalis* to control mites.
Chemical Control: Recommended insecticide given below.

ACARICIDES	DOSE
Buprofezin 25% SC	8.0 ml/10 liters
Chlorfenapyr 10% SC	1.5 ml/liter
Diafenthiuron 50% WP	8.0 g/10 liters
Emamectin Benzoate 5 SG	4.0 g/10 liters
Ethion 50% EC	2.0 ml/liter
Fenazaquin 10% EC	2.0 ml/liter
Fenpyroximate 5% EC	1.0 ml/liter
Hexythiazox 5.45% EC	8.0 ml/10 liters
Milbemectin 1% EC	6.5 ml/10 liters
Oxydemeton-Methyl 25% EC	2.0 ml/liter
Propargite 57% EC	2.5 ml/liter
Quinalphos 25% EC	1.5 ml/liter
Spiromesifen 22.9% SC	5.0 ml/10 liters

Conclusion

The yellow mite (*Polyphagotarsonemus latus*) poses a significant threat to chilli cultivation in India, with the potential to cause severe yield losses. Effective management of this pest requires a combination of preventive measures and targeted control strategies. Preventive

practices such as growing mite-tolerant varieties, maintaining field sanitation, and employing crop rotation can help mitigate mite infestations. Regular monitoring and the use of natural predators like *Amblyseius ovalis* are also crucial for early detection and control. In cases of severe infestation, the application of specific acaricides, as outlined, provides a viable chemical control method. It is essential to follow recommended dosages and integrate chemical control with other management practices to minimize resistance development and environmental impact. By adopting a comprehensive approach to pest management, farmers can protect their chilli crops and sustain their production in the face of mite challenges.