

African spider mite

Eutetranychus africanus

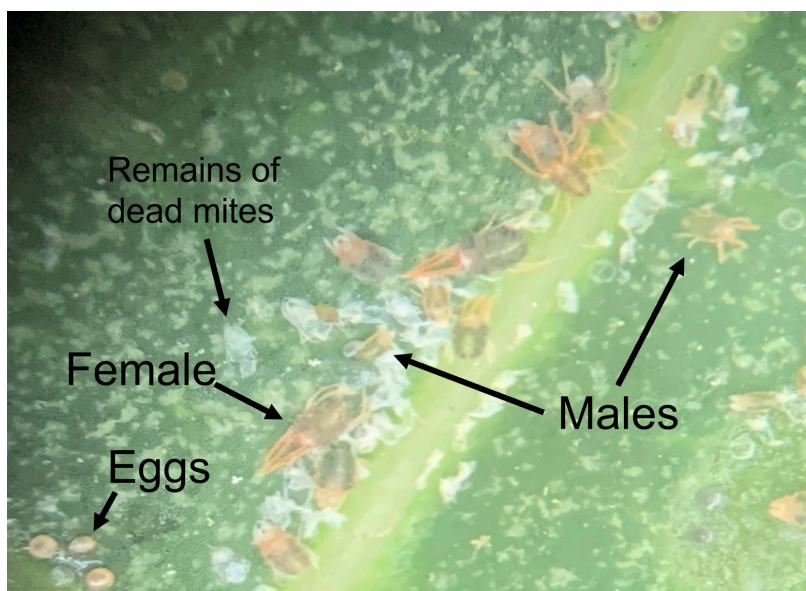
Author: Emily Pattison, QDAF

Introduction

African spider mite is a significant pest of papaya and other tropical crops. Originating from Africa, this pest was first detected in Tully in the early 2000s but was noted to have become widespread in Far North Queensland in 2021. African spider mite can cause substantial damage to papaya plants, affecting both yield and fruit quality. African spider mite has also been recorded on 77 other host plants including peach, citrus, grape, eggplant, cucumber and squash.

Description

- **Adult Mites:** The adult mite is reddish-brown in colour, with an oval body measuring approximately 0.4 to 0.5 mm in length.
- **Eggs:** The eggs are spherical, translucent, and typically laid near leaf veins.
- **Larvae and Nymphs:** The immature stages are smaller than the adults and lighter in colour, often yellowish or pale red.



A photo taken under a microscope depicting African spider mite adult males and females as well as eggs

Life cycle

The African spider mite has four lifecycle stages consisting of: egg, larva, nymph and adult. The lifecycle can be completed in 7-14 days under optimal conditions. Females can lay up to 60 eggs during their lifespan, contributing to rapid population growth, especially in warm and dry conditions.

Symptoms

Upper leaf surface

Unlike the other common papaya pest mite: Two spotted mite; the African spider primarily inhabits the upper surface of the leaf, making it easy to miss early infestations in routine scouts. African spider mite also does not produce webbing.

Leaf damage

Initial signs include pale stippling or 'washing out' of upper leaf surfaces, which gradually turns into patches of necrotic leaf tissue as feeding continues. Severe infestations may cause leaves to dry out and fall prematurely. This can cause issues such as small fruit.



Above: Patches of necrotic leaf tissue developing as a result of African spider mite feeding

Left: A close image of the stippling damage on the upper surface of the leaves

Fruit damage

While the primary damage is to the leaves, mites can also infest fruit creating stippling damage similar to that on the leaves that can downgrade fruit quality



A photo showing stippling damage on papaya fruit

Management

Monitoring

- Regular monitoring of papaya plants, particularly during the dry season, is crucial. Inspect the upper sides of leaves for early signs of mite activity.
- **Threshold Levels:** Determine action thresholds based on the level of mite infestation and the presence of natural predators.

Cultural controls

- **Irrigation Management:** Maintain adequate irrigation to avoid drought stress, which can exacerbate mite problems.
- **Fertiliser management:** High leaf nitrate levels has been associated with increased populations of spider mites.
- **Pruning:** Remove and destroy heavily infested leaves to reduce mite populations and prevent spread.

Biological controls

- **Predatory Mites:** Natural enemies such as *Stethorus* beetles, *Phytoseiulus persimilis* and *Neoseiulus californicus* can help control African spider mite populations.
- **Avoid harsh chemistry:** Avoid the use of broad-spectrum insecticides that can kill



Above: *Stethorus* adult eating a spider mite (photo: Daniel Farrell, QDAF),
Below: *Stethorus* larvae eating a spider mite (photo: Daniel Farrel, QDAF)

Chemical controls

- **Miticides:** Check the APVMA website for a list of registered miticides in papaya.
- **Application:** Ensure thorough coverage of the upper side of leaves, where mites are most commonly found.



Conclusion

African spider mite is considered to be a major pest to papaya in North Queensland. Effective management requires early detection, regular monitoring, and integrated pest management strategies. By understanding the life cycle of this pest and employing a combination of cultural, biological, and chemical controls, growers can minimise the impact on their papaya crops and maintain healthy, productive plants.

References

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