

Chemical Control

- Foliar spray Insecticidal soaps (such as M-pede), soluble spray oils, Ultra-fine spray oil, neem oil and Volck oil can be effective control methods for homeowners with slightly infested plants. It is important to provide good coverage of the spray mix to the underside of leaves and it will be necessary to repeat applications every 7-10 days until control is achieved. These products are less detrimental to the beneficial insects and natural enemies of the pest.
- For heavy infestations or 'hot spots' other insecticides may have to be used to bring the whitefly populations under control. Foliar applications of systemic insecticides such as Actara (thiamethoxam), Confidor 79WG (Imidachlopid) and Renounce (Bifenthrin) are recommended for use.

These insecticides should be applied by trained applicators and in ALL CASES READ AND FOLLOW THE LABEL. DO NOT USE the same chemical in repetition. Chemicals should be rotated to prevent build up of resistance to the pesticides.

Recommendation for nurseries:

- Monitor Ficus plants for early signs of Ficus Whitefly infestation.
- Trap adult whiteflies using yellow sticky traps, currently available at the DoA. Trapping is effective for early detection as well as for catching the adults of the pest as soon as they move into a new area.
- Include chemicals such as Talstar (Bifenthrin), Merit (Imidachlopid), Actara (Thiamethoxam), Caprid (Acetamiprid) and the spray oils listed above in the existing nursery spray programme. Soil drenches or soil granules applications are recommended. Foliar applications should be used when whitefly populations are high for quick knockdown. Rotate chemicals with different modes of action. This is critical to the effective management of the Ficus whitefly to prevent the build-up of pesticide resistance. If plants receive a soil drench of any of the group of neonicotinoid insecticides (imidaclopid, thiamethoxam, clothianidin, dinotefuran) **DO NOT** apply a foliar spray with another insecticide in this group.

**ALL PESTICIDES ARE POISONS.
PLEASE READ AND FOLLOW THE LABELLED
INSTRUCTIONS CAREFULLY**



Early Ficus whitefly infestation



Late symptom - Defoliated Ficus hedge

For more information
and advice on Ficus Whitefly
please contact:



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FIG or FICUS WHITEFLY
(*Singheilla simplex*)

**A PEST AFFECTING
Ficus benjaminia
IN THE
CAYMAN ISLANDS**



The Fig or Ficus Whitefly

Singhiella simplex

A pest affecting *Ficus benjamina*, in the Cayman Islands

In March 2009 a whitefly was observed attacking Ficus hedges in the George Town area of Grand Cayman. The pest identified preliminarily and confirmed on the 25th March as the Fig or Ficus whitefly, *Singhiella simplex* Singh.

The Ficus whitefly is a native of Asia and since 2007 this invasive pest has made its way to a number of Caribbean countries as well as South Florida. Its attack is specific to Ficus type plants and to date at least seven *Ficus species* are affected by the pest.

Description and Damage:

Like other types of whitefly, the Ficus whitefly feeds from the underside of leaves and therefore, their presence can remain undetected for some time. However, if the foliage of the infested plant is disturbed, a swarm of tiny white, moth-like, adult whiteflies will be seen flying from under the leaves.

Close examination will show that the underside of infested leaves is dotted with small, silver or white spots. These are really the empty "skins" of the final stage of development from which the adult whitefly emerge, Fig. 1.



Figure 1. Empty skins on the underside of an infested Ficus leaf.

The Ficus whitefly has "needle-like" sucking mouthpart which it uses to pierce the leaf surface and feed by sucking sap from the leaves of its host. As it feeds it causes serious injury to the plant. Leaves quickly turn yellow, (Fig. 2) wilt, and large numbers fall off prematurely. Before long infested plants may be reduced to bare stems and twigs, which eventually become dry and the plants die.



Figure 2 Early symptoms - Yellowing of the leaf

Biology of Ficus Whitefly

The life cycle of the Ficus whitefly is approximately 30 days. Eggs are laid on the underside of leaves and hatch into crawlers. The crawlers wander around on the leaf for a short while to find a suitable place to settle and begin feeding. Subsequent stages called nymphs do not move and remain in the same area on the plant. Nymphs are oval flat, clear, simple in appearance and difficult to detect with the naked eye, Fig. 5. The emerging adult resembles a small moth. The body is yellow and the wings are white with a faint gray band across the middle of each wing, Fig. 3.

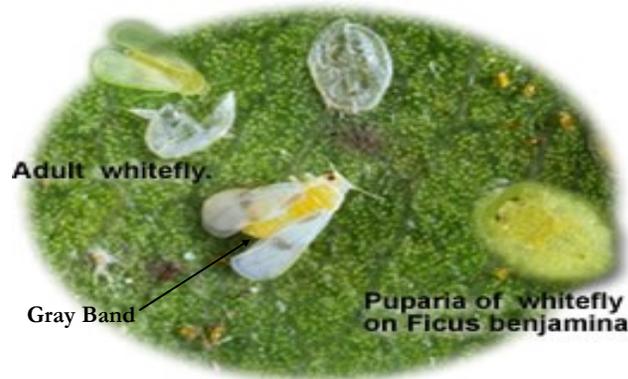


Figure 3 Stages in the life cycle of the Ficus whitefly



Figure 5 Nymphs of the Ficus whitefly

Management Strategies

Efforts to better understand and control this new pest are actively going on in the region. However, based on what is already known there are a number of potential options for its management and control. In making decisions on which strategy to adopt, it is important to consider the site of infestation (hedge, large tree, nursery, etc.), the level of infestation, presence or absence of natural enemies, (such as ladybird beetles and /or tiny parasitic wasps called parasitoids), and the surrounding environment. Most importantly every effort must be made to use control measures that minimize potential negative effects on the survival of the natural enemies which will ultimately provide the best long-term control.

Recommendations for landscapes:

Cultural Practices

- **Monitor** by examining the undersides of Ficus leaves for early signs of Ficus whitefly infestation, it is much easier to manage the pest before populations build to high levels and cause major damage.
- Collect, double bag fallen leaves and dispose of them at the land fill.
- If infested trees/hedges are trimmed leave clippings on the property to allow parasitoids to emerge before double bagging and transporting them to the landfill. Eggs and early larval stages will die on fallen leaves; however the last nymphal stage can survive and emerge as an adult.
- When transporting infested material ensure that it is either bagged or covered with a tarp to prevent further spread of the pest.
- Dispose of infested material at the landfill only.

Mechanical Control

- Trap the adult Ficus whitefly using special yellow sticky traps. These are available at the Department of Agriculture. These traps are useful in non-infested areas as an effective means of providing signs for early detection of the pest as well as to mass trap the adults as soon as they move into a new area.

Biological Control

- The local ladybugs feed on the nymphal stages of the Ficus whitefly while the wasp parasitizes them. Preservation of these bio-agents by not using insecticides that are highly toxic to them, is the best strategy for long-term control of this pest.