

Damage to Papaya Caused by *Thrips parvispinus* (Karny)

In 2006, *Thrips parvispinus* was first detected in Puna, Hawai'i (E. Villalobos, M. Wright, and S. Swift, public presentation, September 2007). In 2010, heavy infestations were also observed on O'ahu, causing severe economic damage to papaya fruits and foliage. The following are symptoms observed on papaya flowers, fruits, and foliage from a field severely populated with *T. parvispinus*. It is suspected that *T. parvispinus* is responsible for the type of damage shown below.



Damage to young papaya fruit from thrips feeding on and in flower buds. Note the scarring.



Severe fruit scarring, as a result of heavy thrips infestation and feeding in papaya flowers.



Deformation and scarring of flower bud.



The area of scarred tissue enlarges as the fruit develops. This type of damage could be easily confused with that caused by the red and black flat mite.



Tell-tale sign of thrips damage: Leaves have a tattered appearance and are deformed and distorted. The leaf blade may have holes and yellowed areas and gaps in the leaf margin.



If left untreated, the entire top of the plant may become affected. It is suspected that gaps in the fruit column may result when flowers are severely damaged by thrips feeding. However, the thrips-induced abortion of papaya flowers needs to be studied further. Monitor your fields by looking at new growth for the tell-tale signs of thrips damage.



Suspected thrips damage on the blossom end of fruits.



Close up of adult *Thrips parvispinus* (Karny) on papaya. Thrips are very tiny insects that are difficult to find and see.



Target your spray at the flowers and growing shoot of the papaya plant. This is where *T. parvispinus* lives and feeds. Use an approved insecticide that is effective on thrips. Young papaya leaves and fruit tend to have waxy surfaces and can be hard to wet. A surfactant such as Latron B-1956 should be used to improve the spreading and wetting of the leaves and thus provide better control.

Recommendations

- Familiarize yourself with the signs of thrips damage: One clear sign of thrips damage is malformed young leaves.
- Scout fields on regular basis and inspect the young growth for early detection.
- The thrips live and feed in papaya flower buds and the growing shoot (Villalobos, personal communication).
- Thrips feed by piercing and sucking on plant tissue in the flower buds and on very young papaya leaves.
- Targeting your spray at the flowers and growing shoot of the papaya plant, where the thrips live and feed, will help to provide maximum thrips suppression.
- Rotate approved insecticides from different IRAC mode-of-action classes to minimize pest resistance.



Prolonged heavy infestations of thrips may result in damage to the entire fruit column. The russetting and meandering scars may be easily confused with mite damage or spray phytotoxicity.