

Chaetanaphothrips signipennis

Introduction

The banana thrips, *Chaetanaphothrips signipennis*, is of economic importance in many banana-producing countries. When fruits are attacked, the market value is reduced although the quality of fruit is not affected. Circular rusty-red patches appear on affected fruits and later there is superficial cracking of the skin or sometimes splitting of the fruit. This pest has a limited distribution in the Caribbean and is of quarantine significance.

Identity

Authority	: Bagnall
Classification	
Kingdom	: Animalia
Phylum	: Arthropoda
Class	: Insecta
Order	: Thysanoptera
Family	: Thripidae
Genus	: <i>Chaetanaphothrips</i>
Species	: <i>signipennis</i>
Synonyms	: <i>Scirtothrips signipennis</i> (Bagnall) and <i>Chaetanaphothrips orchidii</i> , <i>Anaphothrips signipennis</i> , <i>Chaetanaphothrips biguttaticonpu</i> , <i>Euthrips biguttaticoupu</i>
Common names	: Banana thrips, Red rust thrips and Banana rust thrips, Thrips del guineo, Thrips du bananier
Role	: Pest

Signs & Symptoms

FAO (1989)

The appearance of feeding damage caused by banana rust thrips varies with host plant species. In most cases thrips prefer to feed on young succulent immature fruits, flowers and foliage. Circular patches of rusty-red discoloration on fruits (bananas), later cracking of skin and sometimes fruit may split (Fig. 1).



Fig. 1: Rusty-red patches on fruit caused by banana thrips.

Morphology

Thysanoptera adults can usually be distinguished from other insects by their slender wings, which are fringed with long hairs (Fig.2). However, the adults of many species are wingless as are the young stages. Adults also differ from other insects in having an eversible bladder on each tarsus, and only have a single mandible in their heads. Two suborders are recognized: in one, the females have a saw-like ovipositor, whereas in the other, both sexes have the last abdominal segment tubular. Generally, thrips are soft-bodied insects about 2 mm long, elongated and cylindrical in shape. The legs are slender and unmodified. The mouthparts are asymmetrical with a cone formation at the base of the head. There are piercing organs within the cone.

Biology & Ecology

The eggs are laid under the epidermis of the plant on shoots, edges of the sheaths and young leaves. On the fruit, eggs are also laid in sheltered bases and between fruits for protection. The eggs hatch in 1-2 weeks and the larvae crawl and feed for about one week before going to the soil to pupate. The pupae live for 7-12 days and the adults for 27-112 days (average 50-55 days). The adults live on any sheltered part of the plant: in the bunch, under the sheaths or on young leaves and petioles. Adult thrips reproduce sexually and there are more females than males in field populations. Under cool day conditions, the life cycle is prolonged.

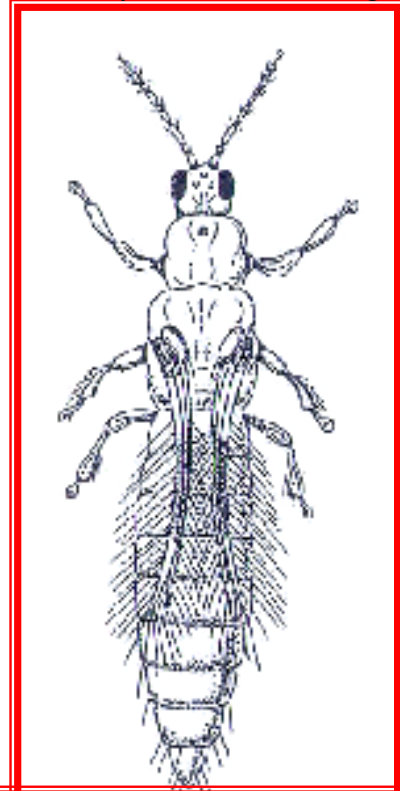


Fig. 2: The Banana Rust Thrip
(*Chaetanaphothrips* sp.)

Natural Enemies

According to Hara *et al.*, anthocorid bugs (*Orius tristicolor*, *O. persequens*, and *O. insidiosus*) are general thrips predators, but the extent of their effectiveness against banana rust thrips is not known. Some lacewings, ladybird beetles, and predacious mites may also exert some control on nymph and adult thrips, while ants may prey on prepupae and pupae in the soil, medium or surface debris near the base of the host plant. Several fungi, including *Paecilomyces* spp. and *Verticillium lecanii*, have been isolated from other thrips species and may infect banana rust thrips as well.

Dispersal & vectors

Adults are dispersed via infested plant (banana bunches) and wind currents.

Management

Inspection Procedures

Both cultural and chemical strategies have been used for control of the banana thrips. In new plantations only peeled and washed rhizomes should be used since the pest can spread by infested sets, young suckers and soil infested with pupae.

In addition to spraying of the pseudostem and suckers, young fruits are bagged. The bunch is bagged using a polyethylene sack, which is impregnated with an insecticide to prevent infestation of thrips from the pseudostem to the fruit. Fruits should be washed and treated before shipping since live insects can be carried on them.

Fruits should be inspected for live insects.

Host Notes

The primary host of *C. signipennis*, are Banana, Anthurium and Bracaena although not specific to bananas (*Musa spp.*) affects banana as its main host. Feeding has been recorded on citrus and tomato and a number of weed species (Simmonds, 1959).

Distribution

The pest has a diverse distribution. In Asia, it is present in India, Indonesia, Java, Philippines and Sri Lanka.

In the Western Hemisphere, it has been recorded in Brazil, Costa Rica, French West Indies, Honduras, Mexico, Panama, Puerto Rico and Trinidad and Tobago. In the USA the pest is present in Hawaii and Florida. In Oceania, the banana thrips is recorded in New South Wales and Queensland (Australia), Fiji and Papua New Guinea (Schotman, 1989).

Pest Significance and Phytosanitary Risk

The species is considered to be a pest of substantial economic importance. Damage by thrips reduces the marketability of the fruit although quality is not affected (COPR, 1977). Adults are weak fliers and distribution is mainly by wind or movement of infested plant material.

Bibliography

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Web Resources -

<http://www.extento.hawaii.edu/IPM/Certification/banana/bansheet.pdf>

<http://www.dpw.wageningen-ur.nl/locust/loclit/thrips.htm>

<http://www.growingedge.com/community/archive/read.php3?c=PD&q=602>

<http://www.dpi.qld.gov.au/horticulture/4995.html>