

## *Sternochetus mangiferae*

### Introduction

The mango seed weevil (*Sternochetus mangiferae*, Fabricius) is a pest of mango. The weevil is monophagous and undergoes its entire life cycle in the seed of the mango, hence its name mango seed weevil. It was first reported in the Caribbean in 1984 (FAO) and since that time it has continued to spread throughout the mango-growing countries of the region. It is considered to be of quarantine importance to the Caribbean

### Identity

Authority	: Fabricius
Classification	
Kingdom	: Animalia
Phylum	: Arthropoda
Class	: Insecta
Order	: Coleoptera
Family	: Curculionidae
Genus	: <i>Sternochetus</i>
Species	: <i>mangiferae</i>
Synonyms	: <i>Cryptorhynchus mangiferae</i> (Fabricius, 1775), <i>Acryptorhynchus mangiferae</i> (Fabricius) <i>Curculio mangiferae</i> (Fabricius, 1775); <i>Sternochetus ineffectus</i> (Walker).
Common names	: Mango stone weevil, Mango seed weevil, Mango weevil, Seed weevil, Picudo de la semilla de mango, Gorgojo de la semilla de mango, Charancon de la Mangue, Charancon de la graine du manguier, Mangokenussler, mangga-kevertje.
Role	: Pest

### Signs & Symptoms

Outward signs or symptoms of *S. mangiferae* are not readily detectable. The larvae of the weevil can be detected by slicing the seed of the mango.

## Morphology

The adult weevil (Fig. 1) is short, compact and about 7.5 - 9.5 mm length. The legs can be compressed to the body and the snout fits into a ventral groove reaching the mesocoxae; elbowed antennae. The colour pattern varies with age from grey to dark-brown and is due to given by the scales, which are oval underneath and rounded on the upper surface. There are tarsi, but only four are visible (FAO Record; Woodruff, 1970).



Fig. 1: Adult mango seed weevil

## Biology & Ecology

The female weevil lays her eggs singly into a small hole made in the mango skin or stem of the ripe fruit. The eggs hatch in 5-7 days depending on the temperature. A single female can lay up to 15 eggs a day and about 300 in 3 months. The young larvae tunnel into the mango seed and undergo 5 instars before pupation (Fig 2). The pupa develops inside the seed. This stage lasts 7 days. The adult remains near the infested areas waiting for the next fruiting season and has the capability to enter into diapause for several months.

Adults are nocturnal and can live up to 21 months (Pest Alert 2000; Woodruff, 1970).

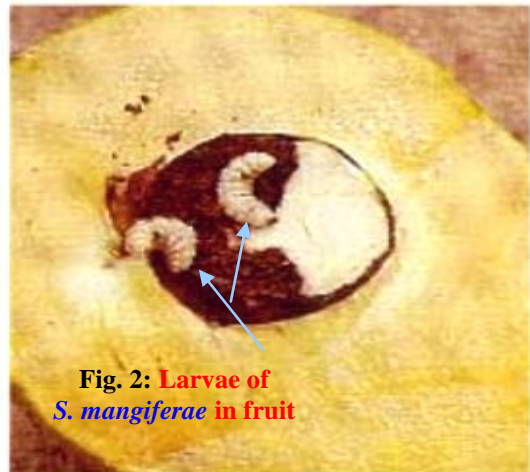


Fig. 2: Larvae of *S. mangiferae* in fruit

## Dispersal

The mango seed weevil is spread by the transportation of the infested fruit.

## Host Notes

The main host plant of this pest is mango (*Mangifera indica*). However, the larvae of this weevil have been reared under laboratory conditions in potatoes, peaches, *Litchi chinensis*, plums, *Phaseolus vulgaris*, and apple, but most larvae failed to complete their development (Pest Alert 2000; Woodruff, 1970).

## **Management**

Woodruff (1970) recommended the use of gamma ( $\gamma$ ) radiation to sterilize/kill the weevil inside the fruit. Fumigation of the fruit with methyl bromide at a rate of one kilo per 1000 cu/ft kills all stages of the pest. This control measure can damage the fruit. Similarly, storage of the fruit at low temperatures will also kill all stages of the pest and may also cause fruit damage.

## **Inspection Procedures for the Pest**

To detect this pest, the seed needs to be inspected as the entire development of the weevil occurs inside the seed. In order for the seeds to be inspected, it must be sliced in half.

The infested fruit ripens early and falls to the ground thus; a good procedure to detect the pest is to search the ripe mango fruit that is on the ground before harvesting. If the search coincides with harvesting season of the mango fruit then the fallen mango might be rejected and inspected (FAO Record).

The mango seed weevil is usually spread by transportation means therefore, all ripe mango fruit must be checked, particularly if the fruit fell before harvesting. Transport of infested fruit within the country and among countries, and from infested areas to non-infested areas must not be permitted. In addition, rigid sanitation and strict quarantine measures at ports of entry in the Caribbean sub-region.

## **Pest Significance**

The mango seed weevil is an important quarantine pest of mango in the Caribbean.

## **Distribution**

The mango seed weevil is considered to be an emerging pest in the Caribbean Basin. It is now established in Barbados, Dominica, French Guiana, Guadeloupe, Martinique, St. Lucia, Trinidad and Tobago, British Virgin Islands, Grenada, Montserrat, St. Vincent and Grenadines. It is also present in North America ( only in Hawaii) South America, Australia, Oceania, Asia and Africa (Pest Alert 2000). However in 1970, Woodruff reported that this weevil was not present in North, Central, and South America or the West Indies (Pest Alert 2000).

## Bibliography

- FAO (1989) *Plant Pests of economic importance reported in the region covered by the Caribbean Plant protection Commission. RLAC/90/03- PROVEG-22.*
- Follet, P. A. and Z. Gabbard ( 2000). Effect of Mango Weevil ( Coleoptera: Curculionidae) damage on mango seed viability in Hawaii. *J. Econ. Entomol.* **93** (4), 1237 – 1240
- Woodruff, R. E. (1963) The Mango Weevil, *Sternochetus mangiferae* (Fabricius) (Coleoptera: Curculionidae). *Florida Department of Agriculture Division of Plant Industry. Entomology Circular No. 93, p:1-2 Ref. Crop Protection Compendium Global module CABI 2001.*
- Singh, S.P. (1989). Relative incidence of mango nut weevil *Sternochetus mangiferae* ( Fab.) on different mango varieties. *Acta.Hort ( ISHS)* **231**, 575 – 580 .

## Web Resources-

- ECOPORT: [http://www.ecoport.org/EP.exe\\$EntShow?ID=20140](http://www.ecoport.org/EP.exe$EntShow?ID=20140).
- Pest Alert 2000. *Sternochetus mangiferae* (F.) Emerging pests in the Caribbean Basin.
- Phytosanitary Alert System: Pest Alert: [www.pestalert.org](http://www.pestalert.org).
- <http://www.pestalert.org/Detail.CFM?recordID=3>
- [http://www.actahort.Org/books/231/231\\_12.htm](http://www.actahort.Org/books/231/231_12.htm)