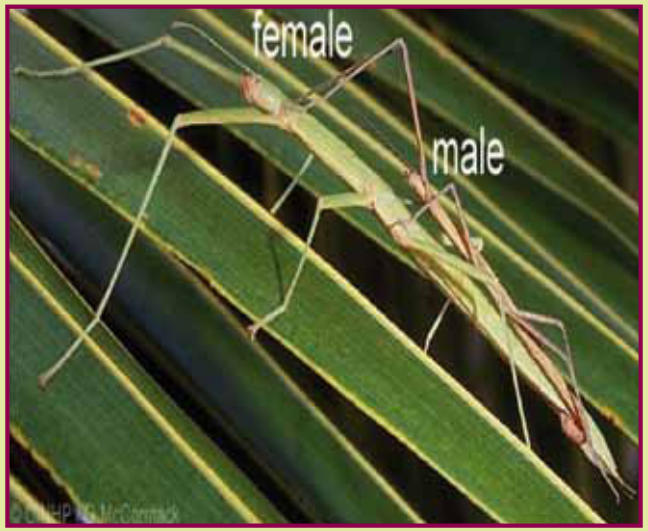
COCONUT STICK INSECT

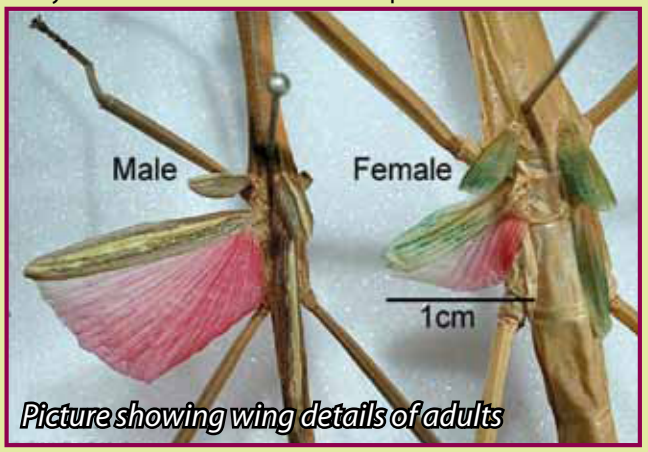
Coconut Stick Insect, is one of the major pests of coconut in Fiji (known as mimimata).

PHYSICAL CHARACTERISTICS

Stick Insect has long, slender body with long, thin legs. They are broad green or pinkish-brown species, with bold pink, shortened wings thus allowing them to blend in with trees, leaves and twigs. This is their primary defense and camouflage against predators. Males grow to 2.6 -2.8 inches (65-70mm) and females to 4.1- 4.6 inches (105-

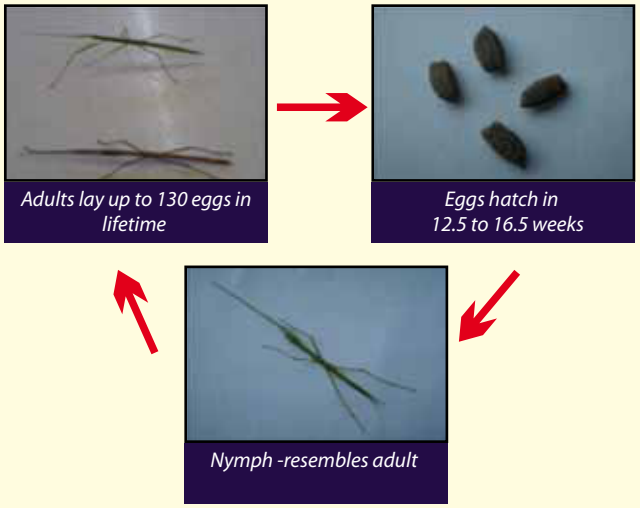


116mm). The nymphs and the adult mostly feed during the night and hide during the day between the leaf fronds. They are herbivores and use their powerful mandibles to chew the leaves. The adult female has two pairs of small wings but they cannot fly. The males have a slightly bigger wing thus can fly to feed and mate.



Picture showing wing details of adults

LIFE CYCLE



	Female	Male
Nymphal Stage	*Total 6 wks*	*Total 5 wks*
Nymph become adult	*15 to16wks*	*13.5 to 14.5 wks*
Starts laying eggs	*3 wks (after becoming adult)*	
Life span	*18 wks*	*25 wks*

CONTROL OF STICK INSECT

Stick Insect could be controlled by either using biological control or physical control methods.

BIOLOGICAL CONTROL

The wasps *Paranastatus nigriscutellatus* and *Paranastatus verticalis* are reared in the laboratory and released in infested fields. Wasps in particularly parasitizing the Stick Insect eggs are effective, sustainable and cost-effective method to control stick insect population. In Fiji *Paranastatus nigriscutilatus* as egg parasites have proven itself in the past to kill up to 80% of Stick Insect eggs.

Picture showing parasitoids wasps and releasing techniques in infested fields.

HOW BIOLOGICAL CONTROL AGENTS WORK?

The best prospects available for biological control are the establishment of the parasitoids. Parasitoids establishment should be combined with clearing around the bases of affected trees before releasing wasps. Reason for clearing around the palm bases is to expose Stick Insect eggs to the sun and predators. Controlling ground cover reduces the chances of eggs and nymphs to survive. It also exposes them to predation by ants and farm animals.

Suitable breeding grounds for Stick Insect

PHYSICAL CONTROL

- Field sanitation practices should be carried out on entire farm to keep the weeds down and control Stick Insect population.
- Grazing the farm with cattles will help in keeping the field clean and stamping the egg and nymphs. The area should be fenced and cattle can be moved around to control weed growth.
- Inter-cropping should be practiced on coconut farms to keep the plantation clean. Inter-cropping with non-host plants like Cocoa or dalo helps to reduce damage to coconuts by 90%.
- Smoking under plantation will assist in falling of nymphs and adults on the ground. Smoking concept whereby palm fronds burnt beneath the palms on still days assist in controlling the pest population. Smoke causes Stick Insect to fall to ground and get consumed by poultry or killed by hand. Raising poultry on farms are also encouraged.

For more information please contact:
Your Nearest Extension Office.

Produced by: Research Division, Koronivia Station
Layout & Design by:
Information & Communication Section,
Ministry of Agriculture
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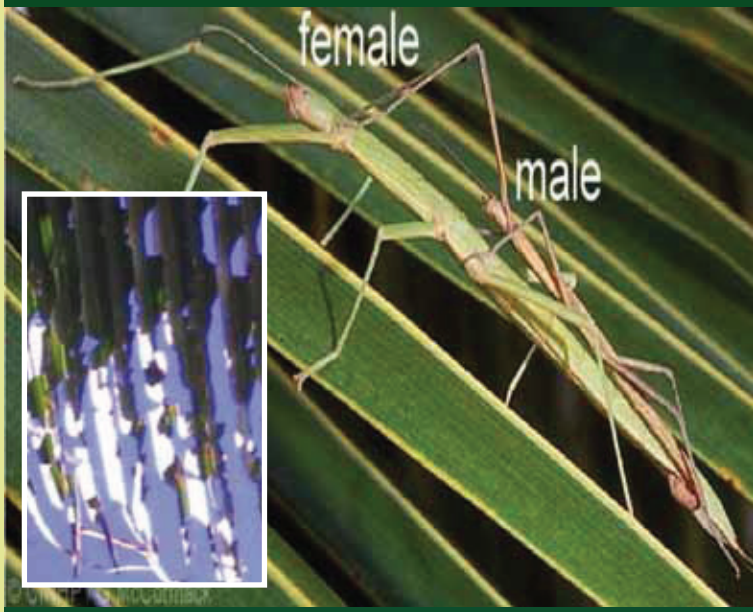

MANAGEMENT & CONTROL

FARMER'S LEAFLETS 2015