ENTOMOLOGY BULLETIN: No. 52

Pest of Sweet Potato - Sweet Potato Weevil

R. Kumar, Principal Entomologist
Agriculture Protection Division
PO Box 2141, BOROKO.

INTRODUCTION

Sweet potato, originally a South American crop, is now the staple food of more than a million people in PNG. The crop has the attraction in that it grows well in marginal soils. But sweet potato production, in most tropical countries including PNG, is limited by the sweet potato weevil (SPW) which is its most important pest. Both adults and larvae of SPW affect the plants.

DESCRIPTION

Adults (see Figure) of the SPW, *Cylas formicarius*, are small, ant-like weevils, 6-8 mm long, having shiny metallic black colour, very slender bodies, with reddish-brown legs and thorax as well as a black head. Like other members of their group, Apioninae, they have an elongate rostrum and in the antennae, the apical segment is very long. The larvae are curved, legless and white to creamy in colour; fully developed larvae are 3mm in diameter.

BIOLOGY

The female deposits eggs singly, in tubers and at the base of the vines (stems). The eggs may be laid in small hollow punctures or inserted directly in the tubers. The larvae hatch out in about a week's time and tunnel inside both the vines and tubers. The larvae remain in these tunnels feeding actively for 2-4 weeks. They pupate either in the tubers or in the soil, more often in the latter. The duration of the life cycle depends on the weather conditions and takes 4-7 weeks. The development is faster during high temperature periods and there are several overlapping generations in the field. In the rainy season breeding activity is said to slow down. The adults are active fliers and are usually noticed in the field when the tuber formation begins.

ECONOMIC IMPORTANCE

Adults feed on leaves producing feeding holes and feed on tender stems and tubers leaving behind punctures. But the destructive stage is the larva which bores into tubers and leaves behind dark stained tunnels, fully or partially filled with frass (the refuse left by boring insects). This makes even a moderately infested tuber unfit for human consumption. The damage started in the field continues during storage. This type of feeding behaviour makes SPW the most important pest of sweet potatoes. Tunnelled tubers are generally rejected by the public and cannot be stored for long periods. The weevils remove stored food from the tubers and effect the next season's growth and vigour. SPW is primarily a pest of the sweet potato, *Ipomoea batatas*. Its other host plants include maize, several *Ipomoea* spp. and wild species of Convolvulacea.

CONTROL

Cultural

1. Use only weevil free and healthy planting material.

2. Where possible select resistant varieties for planting. Sweet potato varieties with long necks between the tubers and stems are less affected because the weevil cannot burrow down more than 1 cm.

3. Early maturing varieties may be useful beacause the sweet potato weevil appears to cause much of its damage late in the sweet potato growth cycle.

4. After harvest clear fields and burn the trash or use it as a stock feed. In particular uproot all morning glory (*Ipomoea* sp) weeds which along with sweet potato is the major source of weevil infestation.

5. Practise crop rotation as it reduces pest population and thereby crop losses.

6. Sex pheronome traps to capture male weevils can reduce the weevil population.

Biological

A fungus, *Beauveria* sp, has been found to attack SPW adults in Nigeria. The development of such biological control agents requires urgent attention.

Chemical

A number of effective chemicals are available for weevil control. Dip planting material in gamma-BHC or Malathion. Drenching of soil fortnightly with 0.1% gamma-BHC is quite effective. For the use of chemicals follow the instructions given on labels carefully. Full details on the safe handling and use of pesticides are given in Entomology Bulletin No. 9 in Harvest, Volume 6, No. 3, pp. 149-152 and Rural Development Series Handbook No. 18.

FURTHER INFORMATION

For further information about control of Sweet Potato Weevil contact your nearest DAL entomologist or didiman.

Entomologists are based at:

PORT MORESBY

Agricultural Protection Division
P.O. Box 2141
BOROKO
Tel: 217899 ext 211
Fax: (675) 214630

Agricultural Research Division
P.O. Box 417
KONEDOBU
Tel. 281068
Fax: 281075

RABAUL

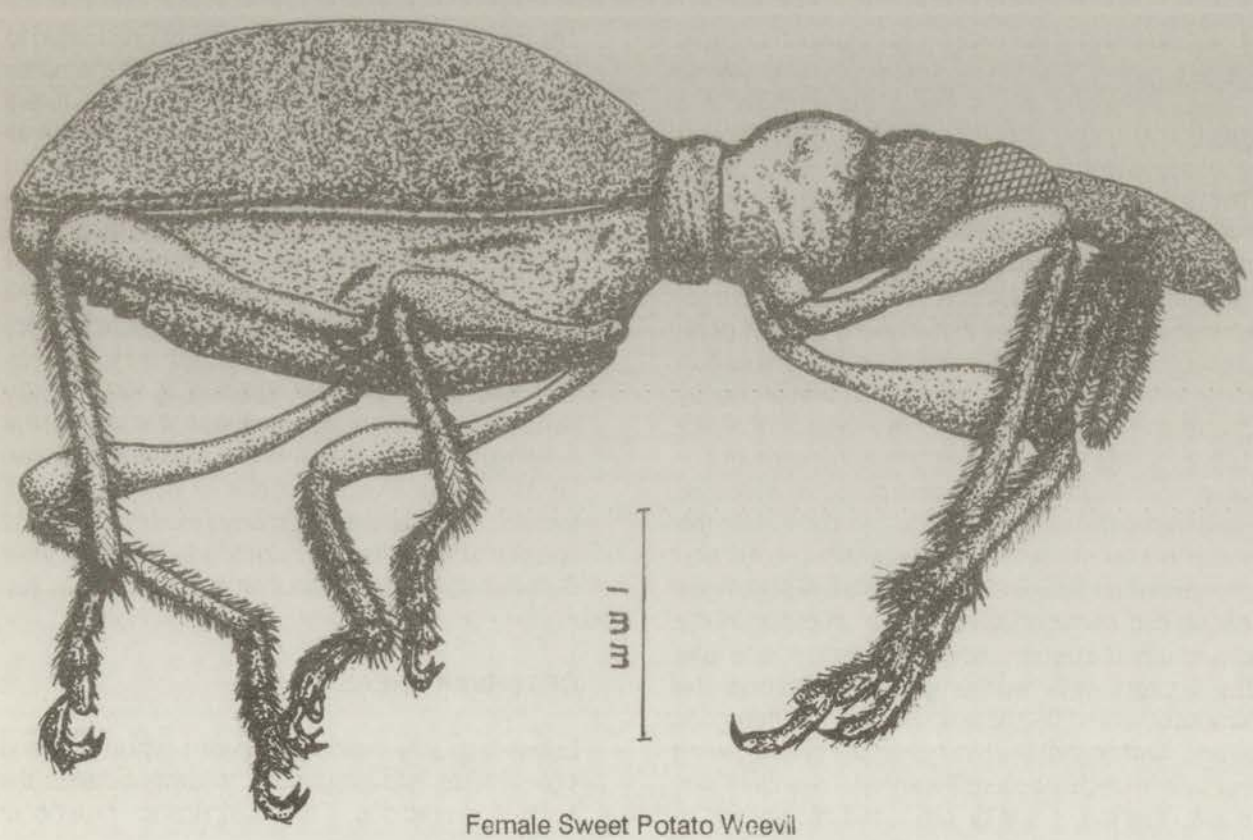
Lowlands Agricultural Experiment Station
P.O. Keravat
E N.B.P.
Tel: 92 3167 or 92 3184 or 92 3188

LAE

Bubia Agricultural Research Centre
P.O. Box 1639
LAE
Tel: 42 4933, 45 1156

Copies of this Entomology Bulletin can be obtained from:

The Publications Officer
Department of Agriculture and Livestock
Publications Section
P.O. Box 417
KONEDOBU.



Female Sweet Potato Weevil