

Ecological Studies, Crop Loss Assessment and Potential Control of
Sugarcane Stem Boring Grub, Dorysthenes buqueti Guerin
(Coleoptera : Cerambycidae)

INTRODUCTION

Sugarcane, Saccharum officinarum L. is one of the most economically important crop in Thailand, with a planting area of approximately 678,680 ha (1 ha = 6.25 rai). The major planting areas are located in the Northern, Central, Eastern and Northeastern regions. In 1991, the sugarcane harvested was 47.50 million metric tons and this produced 4.88 million metric tons of sugar. Sugar exports were 2.72 million metric tons and valued at 14.86 billion baht. But in 1992, only 34.71 million metric tons of sugarcane was harvested and delivered to the mills producing 3.62 million metric tons of sugar. Sugar exported came up to 3.52 million metric tons and valued at 18.18 billion baht. Sugarcane production therefore decreased 9.79 million metric tons in 1992 (Anonymous, 1993). Production fluctuates from year to year depending upon two factors. The first factor is environment of which the prime one is rainfall. The second one is plant's pest, which include weeds disease and insect pest. There are 4 groups of the major insect pests of sugarcane in Thailand.

The first group is the stalk borer such as striped shoot borers (Chilo sacchariphagus Bojer), early shoot borers (C. influ-scatellus Snellen., C. tumidicostalis Hampson), white top borers (Scirpophaga excerptalis Walker) and pink borers (Sesamia inferens Walker).

The second group is sapfeeders such as sugarcane scale (Aulacaspis tegalensis Zchntner), sugarcane whiteflies (Aleurolobus barodensis Maskell), pink sugarcane mealy bugs (Saccharicoccus sacchari Cockerell), wooly aphid (Oregma lanigera), sugarcane froghoppers (Callitetrax versicolor Fabricius) and linear bug (Phaenacantha saccharicida Karsch).

The third group is soil insects such as white grub (Lepidiota stigma Fabricius), sugarcane stem boring grub [Dorysthenes buqueti Guerin] and sugarcane termite (Odontotermes takensis Ahmad).

The fourth group is foliage feeders such as rice grasshoppers (Hieroglyphus banian Fabricius), leaf eating weevils (Sepiomus sp.) and hairy worms (Eupterote testacea Walker) (Prachaubmoh and Pitaksa, 1988).

The major soil insect pest of sugarcane is the sugarcane stem boring grub, [Dorysthenes buqueti Guerin]. An outbreak usually

occurs in sandy loam soil and it spreads into larger areas than the white grub (Lepidiota stigma Fabricius). The larvae begin boring into cane setts at planting time and causes germination to be reduced. The larvae feed on the part of the sugarcane plant between the root and the stem until they are approximately 40 mm in length ; then they tunnel into the underground portion of the stalks and cause damage. Prachaubmoh and Pitaksa (1987) reported that the stools and weight of the infested cane are usually reduced by about 43 per cent by sugarcane stem boring grubs. Jenkyn (1980) reported that sugarcane losses throughout the world, due to insects, diseases, weeds and other factors were 19, 19, 15 and 47 per cent, respectively. The purpose of this study is to conduct an investigation into the biology, the distribution patterns and the control of stem boring grub, using sequential sampling techniques and make a crop loss assessment.

It is anticipated that the results obtained from this study will be applied to control sugarcane stem boring grubs. The distribution of infestation will be also developed for a sequential sampling technique.

Objectives

1. To study the growth, development and survivalship of sugarcane stem boring grubs.

2. To detect distribution patterns and sequential sampling for sugarcane stem boring grubs.

3. To survey the natural enemies of sugarcane stem boring grub.

4. To assess crop loss caused by sugarcane stem boring grubs.

5. To compare the efficiency of some insecticides in the control of sugarcane stem boring grubs.

6. To evaluate the control of the sugarcane stem boring grub by pitfall traps.