

Chamnan Pitaksa 1993 : Ecological Studies, Crop Loss Assessment and Potential Control of Sugarcane Stem Boring Grub, Dorysthenes buqueti Guerin (Coleoptera : Cerambycidae). Doctor of Philosophy (Entomology), Major Field Entomology, Department of Entomology. Thesis Advisor : Asst. Prof. Dr. Ouab Saranthoy. 126 pages.

The sugarcane stem boring grub, Dorysthenes buqueti Guerin (Coleoptera : Cerambycidae), takes 1 to 2 years to complete its life cycle. The distribution infestation of the sugarcane stem boring grub in sugarcane in the field was detected as a negative binomial.

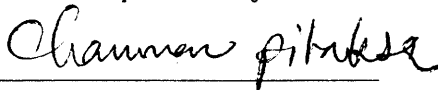
A sequential interval procedure was developed at 24 per cent infested stools (7.23 per cent infested stalks) for economic threshold (ET). It could be calculated from the upper and the lower stop values. The maximum sequential errors were 0.1.

Natural enemies of D. buqueti Guerin were an ectoparasite mite, Caloglyphus sp. and an entomopathogenic fungi, Metarrhizium sp.

Yield losses caused by sugarcane stem boring grubs were measured from a plant cane and a ratoon cane. It was found that a weight loss of U-thong 1 plant cane variety was 36.31 per cent whereas infested stalks were 5.09 per cent. In addition, F156 ratoon cane variety lost 50.81 per cent by weight or 19.40 per cent infesting stalks. The field estimation, at the level of 25 per cent of the infested stalks lost its weight 27.08 per cent in plant and 48.28 per cent in ratoon cane respectively. However, crop loss assessment of cane from nematode was 17.39 per cent in plant cane (U-Thong 1 variety) and 23.70 per cent in ratoon cane (F156 variety).

At the time of planting, chlordane 72 % EC was applied at a rate of 700 millilitres per rai. Endosulfan + BPMC 4.5 % G at the rate of 5 kilograms per rai were also treated at 3,4 and 5 months after planting. All of them were effective for controlling the sugarcane stem boring grub in both plant and ratoon canes.

A pitfall trap could be used for decreasing a population of adult sugarcane stem boring grubs. However, a number of the sugarcane stem boring grub captured by the trap in the plant cane were less than in ratoon cane under the field conditions. The proportion of captured males and females were 1.3 : 1 and 2.1 : 1 for the plant and the ratoon canes respectively.



Student's Signature



Thesis Advisor's Signature

May 13, 1993