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INVESTIGATION OF CROP LOSSES DUE TO MOTH BORERS IN INDONESIA

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Abstract

THROUGH AN ACIAR project on pest and disease management in Indonesia, the impact of stemborers *Chilo sacchariphagus* and *C. auricilius* and the top borer *Scirpophaga excerptalis* on stalk yield components was studied in fields at Pesantren Baru Sugar Factory, East Java.

The experimental design consisted of randomised plots to compare natural infestation by the borers, biological treatments using the egg parasitoid *Trichogramma* spp. and a chemical treatment. Damage levels in untreated plots were the highest with an average of 14.5% internodes bored by *Chilo* spp. and 15.8 % stalks damaged by *S. excerptalis*.

In comparison, the best treatment obtained with insecticides had only 4.6% and 3.8% damage level respectively, followed by plots treated with *Trichogramma* releases. The untreated plots had lower sucrose yield, higher fibre content and lower cane yield than all treated plots, which represents a loss in cane yield of 45.4 t/ha (–34%). Stalk height and other parameters were also affected, particularly in cane stalks attacked by *S. excerptalis*.

The relationship between damage level and other stalk components was also investigated. Stalk weight, stalk length and sucrose were negatively correlated with stalk damage. Increased fibre content, resulting in less juice, was positively correlated with damage.

These results are generally consistent with past studies on stem borers, particularly those on *C. sacchariphagus* and *Eldana saccharina*. They also confirm the severe impact of the top borer on crop yield. The high level of threat represented by moth borers to the Australian sugar industry stresses the importance of gathering more data on yield losses and pest management strategies for better preparedness.