

Wimolmat Osotsen 2008: Economic Impact Assessment of Research on the Green Muscardine Fungi to Control the Sugarcane Cerambycid. Master of Science (Agricultural Economics), Major Field: Agricultural Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Associate Professor Suwanna Praneetvatakul, Ph.D. 111 pages.

This research evaluates a research project carried out by the National Biological Control Research Center entitled: Use of the green muscardine, *Metarhizium anisopliae*, to control sugarcane cerambycid, *Dorysthenes buqueti* Guerin (Coleoptera: Cerambycidae). The result of this project should be able to decrease damage to sugarcane. The objective of this study were to describe the socio-economic characteristics of farmers growing sugarcane, to analyze benefits achieved through applying the green muscardine fungi research results, to analyze the factors affecting the use of the green muscardine fungi to reduce damage due to the sugarcane stem boring grub, and to conduct an economic impact assessment of research on the sugarcane stem boring grub in Thailand. Primary data were collected from 67 farmers in Suphan Buri province in the 2006/2007 sugarcane cropping season. Secondary data were collected from various government agencies. The data were analyzed using the logit model as well as the DREAM model.

The results of the study showed that factors affecting farmers to use the fungi were: adopting agricultural information, bio-control knowledge, the spread of the sugarcane stem boring grub, and the need for self sufficiency in using water for growing sugarcane. These factors have the positive direction to the probability of using the Green Muscardine Fungi. It is found that the average probability of using the Green Muscardine Fungi is 99.11 % of total farmers. The results also indicated that the economic benefits from the research investment up to 2007 had not cover the research investment costs. However, when the analysis was extended to 2022, it showed that the economic benefits covered the costs and the net present value was equal to 54 million baht. So, the research investment will be worthwhile in the future.

Suggestions resulting from the study were such as related government agency should continue the support for ongoing research by the National Biological Control Research Center in order to obtain the long run research benefits. Finally, farmers should establish a green muscardine fungi center in the community.

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Thesis Advisor's signature

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