

Pornpan Pookaew 2010: Benefit Value of Biological Control to Sugarcane Moth Borers.
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Use of the *Cotesia flavipes*. to control sugarcane moth borers can decrease damage of sugarcane production, provide external benefit on a farmer's health and reduce environmental and agrological problems from chemical use. Furthermore, it decrease consumption risk regarding toxin from chemical residue in sugar. This study aimed to value farmer's benefit of biological control to stem borers and consumer's benefit of consuming pesticide - free and safety sugar. Primary data were collected by interviewing 185 farmers in Nakhon Sawan province, and 600 sugar consumers in Bangkok resident. Cost-benefit analysis is use to compare return of sugarcane production with and without biological control methods. Non-parametric and binary logistic model were employed in finding mean of willingness to pay. Finding the factors affecting the willingness to pay is analyzed by stepwise multiple regression function.

Using non-parametric and binary logistic model, it is found that a marginal WTP of farmer for *Cotesia flavipes* (Cameron) (Hymenoptera: Braconidae) is 244.91 and 292.30 Baht/ natural enemies package/rai respectively. The stepwise regression model show that three variables have significant impacts on willingness to pay for *Cotesia flavipes*, i.e. using irrigation for growing sugarcane, having knowledge on the use of natural enemies and the respondents' positive attitude on the biological control. The results of consumer's mean WTP for pesticide-free sugar is 38.44 and 34.90 Baht/kg and marginal benefit is 18.44 and 14.90 Baht/kg from the two model respectively. As well as the factors affecting consumers' willingness to pay are the initial price(Bid), gender, state enterprise employees , bio-control knowledge and positive view on policy regarding good agricultural practice for sugarcane.

Benefit value of biological control to sugarcane moth borers of producers and consumers 28,401.50 Baht/ rai. For farmers, it is was 244.91Baht/ rai while that for consumer is 28,156.59 Baht/ rai. The result indicate that farmer and consumer is willingness to pay premium price for biological control. It is recommended that policy makers should support and encourage the use of chemical free sugarcane production method and pesticide - free sugar products.

Student's signature

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