

Dusita Wongboonmee 2007: Marginal Productivity of Chemical Pesticide in Cotton Production for Promoted and Bt Varieties. Master of Science (Agricultural Economics), Major Field: Agricultural Economics, Department of Agricultural and Resource Economics. Thesis Advisor: Assistant Professor Suwanna Praneetvatakul, Ph.D. 88 pages.

Cotton production required very high pesticide use along with the promoted varieties in order to increase production efficiency. The objectives of this study are to examine marginal productivity of pesticide and to analyze production function with damage control agent to determine the efficiency of pesticides. The study utilized household data from 241 cotton farmers in the cropping year 2005/2006. The analysis uses production function with the exponential damage control agent function.

The result of the study found that Promoted cotton has significantly lower production cost and higher profit than Bt cotton. The result of production function with an exponential damage control agent function, by considering the ratio of the value of marginal products and the price of the pesticide showed that farmers used pesticides inappropriately and it should be reduced. Finally, results from the analysis of the efficiency of input used indicated that the amount of fertilizer used can be slightly increased in order to increase efficiency.

The recommendations of this study are such as the relevant organization should examine the pesticide type in the market, since some pesticide are not registered by WHO for safety use. The next study should examine the Bt cotton varieties by tested in chemical laboratory in order to improve efficiency of the analysis in cotton productivity.

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