



Tropentag, September 14-16, 2010, Zurich

“World Food System —  
A Contribution from Europe”

## Efficiency of Bt Cotton over non-Bt Cotton Production: An Econometric Analysis

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### Abstract

Cotton is the major commercial crop amongst all cash crops in India and provides livelihood to more than 60 million people in its cultivation, processing and textile industry. Cotton crop is infested by various pests causing significant yield losses, therefore Bt cotton was introduced in India during 2001 to reduce pesticide consumption and also increase productivity. With this background the Present paper analyses the resource use efficiency of Bt cotton over non-Bt cotton in Karnataka state, India by using decomposition analysis technique. The data was collected randomly from 45 farmers cultivating Bt and non-Bt cotton from Haveri district of Karnataka. The results of the regression analysis indicated that the independent variables considered in the model explained a large part of the variability in the gross returns from cost of cultivation (96.8% and 97.5% in Bt and non-Bt cotton cultivation). Whereas the result from decomposition analysis show that efficient use of labour (200.8%), fertilisers (184.8%) and seeds (65.8%) had contributed the most to the difference in returns between Bt cotton and non-Bt cotton cultivation. The measured difference through decomposition analysis of gross returns between Bt cotton and non-Bt cotton was 55.0%. In that non-neutral technology between Bt cotton and non-Bt cotton cultivation comprises -25.4%. Contribution of differences in the quantity of inputs used to higher returns from Bt cotton to the measured difference in gross returns between Bt and non-Bt cotton was 56.6%. While that of the efficiency in the use of inputs was 23.8% in Bt cotton. Hence, Bt cotton cultivation is recommended over non-Bt cotton in that area.

**Keywords:** Bt cotton, decomposition analysis, non-Bt cotton