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A study on factors determining bio input adoption for sugarcane in Cuddalore district, Tamil Nadu

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ABSTRACT

An investigation was made to workout the cost of production of sugarcane for bio input adopters and non adopters and to identify the factors determining the adoption of bio inputs. The total cost of cultivation per hectare was Rs. 42794.85 in bio-input adopter farms, which was 2.35% higher than the total cost in bio-input non adopter farms. Among the components of total cost, human labour (45.46%) occupied the highest per cent followed by setts (21.37%) and value of bio-inputs (18.03%); where as in bio-input non adopter farms, the highest percentage of total cost was incurred for human labour (49.50%) followed by setts (21.60%) and fertilizer (14.71%). The unit cost of production was worked out as Rs. 347.92 and Rs. 366.22 in adopter and non adopter farms, respectively. All the estimated coefficients in the logit model were positively significant. The observation on odds ratio indicated that among the variables determining bio-input adoption, the experience in handling bio-inputs played a significant role followed by age of the respondent, farm size and income of the respondent.

Key words : Bio-input, Adopter, Non adopter, Cost of production, Adoption model, Odds ratio.

During the initial period of the green revolution, resource rich farmers reaped good harvest that prompted them to use fertilizers liberally with prophylactic plant protection measures and ignored the expert advice of scientists. The consumption of fertilizers has increased manifold especially in the monocropped-irrigated areas. The chemical path way has been pursued year after year for the sole purpose of increasing food grain production. The over use of chemicals to intensify crop production led to poisoning people and animals as well as polluting the environment (www.attra.org).

Inorganic fertilizers coupled with other modern inputs have undoubtedly enabled the Indian farmers to achieve enormous increase in the agricultural productivity during the last three decades. The growing concern about environmental degradation, shrinking natural resources and the urgency to meet the food needs of growing population are compelling farm scientists and policy makers to seriously examine the alternatives to chemical agriculture.

Owing to the raising awareness among the consumers about the pesticide residues in the agricultural products, consumers prefer the pesticide free food commodities. All these facts pave the way for expanding naturally grown agricultural products where in bio inputs usage plays major role. Hence, an attempt has been made in this paper to workout the cost of production of sugarcane for bio input adopters and non adopters and to identify the factors determining the adoption of bio inputs.

METHODOLOGY

The selection of farmers was done using the stratified random sampling technique and the respondents were stratified on the basis of adoption of bio-input. In order to select the adopters, a list of farmers who are using bio-input for sugarcane cultivation was prepared for each of the selected villages with the help of records of the Village Administrative Officers. Hence, the total sample size of 20 for each village was fixed taking into consideration of the statistical requirement, time and other constraints foreseen by the researcher. Finally 120 sugarcane growers *i.e.*, 80 adopters and 40 non adopters were selected randomly from the list of bio-input adopters and non adopters prepared for selected villages. The required information was collected from selected bio input adopters and non adopters.

Cost of production:

To work out the economics of bio-input usage, the cost of production of sugarcane crop and gross and net returns have been worked out by using the standard concepts as follows;

Cost A_1 – Cost of setts and planting material, value of farmyard manure, bio-inputs, fertilizers, pesticides, bullock labour, interest on working capital, depreciation on farm tools and machinery.

Cost A_2 – Cost A_1 + rent paid on leased in land.

Cost B – Cost A_2 + imputed rental value of owned land + interest on fixed capital.