

Resource use efficiency and level of technology adoption in lac cultivation among trained and untrained lac growers in Jharkhand

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The study is based on the primary data collected from randomly selected 500 lac growers (untrained and trained) in the Ranchi and West Singhbhum districts of Jharkhand in the year 2003-04 and 2004-05. The study has reported the cost, returns, resource use efficiency in lac cultivation on different host trees and level of technology adoption by trained and untrained lac growers. The net return in lac cultivation for 10 host trees by untrained lac growers was Rs. 977, Rs. 1954 and Rs. 16281 for *palas*, *ber* and *kusum*, respectively while, it was recorded around double in case of trained lac growers. The use of inputs in lac cultivation was in the rational zone of production for both trained and untrained lac growers on all the three hosts. The MVP of all the inputs used in lac cultivation for trained lac growers was higher than untrained lac growers for all the host trees except use of human labour in *kusum*. Significant increase has been found in case of trained lac growers regarding adoption of all improved lac cultivation techniques except *phunki* removal. The study has emphasized on the need of strengthening and widening the extension activity to empower the lac growers with scientific knowledge on lac cultivation, use of more inputs on the same host and promotion of *kusmi* lac cultivation for enhanced lac production, more income and employment generation at growers level.

Lac is a natural resin secreted by an insect known as *Kerria lacca* (Kerr.) thriving on the tender twigs of specific host trees viz., *palas* (*Butea monosperma*), *ber* (*Zizyphus mauritiana*), *kusum* (*Schleichera oleosa*), *Ficus sp.* etc. *Rangeeni* and *Kusmi* are the two strains of lac insect which are based on preference of the insect for specific host plants. Lac is mainly cultivated in India, Thailand, Indonesia, parts of China, Vietnam, Cambodia etc. India is the leader in production and export of lac in the world. Major states engaged in lac cultivation in India are Chhattisgarh, Jharkhand, Madhya Pradesh, West Bengal and Maharashtra contributing around 95 per cent of national lac production. Minor states of lac production in India are Orissa, Uttar Pradesh, Assam, Meghalaya, Gujarat, Andhra Pradesh and contributing around 5 per cent of national production. The national production of

lac was 20,640 tons during 2007-08. Jharkhand is one of the major producers of lac in the country contributing around 31 per cent of national production (Pal *et al.*, 2008).

Lac cultivation is an important source of cash income for livelihood for the tribal lac growers inhabiting in forest and sub-forest areas. Besides it has high potential for generating employment for both men and women. It is a very remunerative crop, paying high economic returns to the farmers and also foreign exchange to the country through its export. The export earning from lac and its value added products during the year 2006-07 was around 148 crores. Lac is exported to more than 60 countries of the world and top ten importing countries of Indian lac are Egypt, Germany, Pakistan, Bangladesh, Indonesia, USA, Italy, UAE, Spain and Nepal.

Analysis of economics and resource use efficiency would be helpful in determining the marginal value productivity and optimum level of various inputs used for maximization of lac output. Level of technology adoption in lac cultivation also affects the output and profitability. However, information on resource use efficiency and level of technology adoption in lac cultivation is meagre. Keeping in view the above facts, the present paper examines the cost, return, resource use efficiency in lac cultivation on different hosts and level of technology adoption by trained and untrained lac growers.

The study is based on primary data collection from two major lac growing districts of Jharkhand, namely Ranchi and West Singhbhum, in the years 2003-04 and 2004-05. A total of 500 lac growers were selected and surveyed. Three stage stratified random sampling technique was adopted for the selection of blocks, villages and farmers. Four blocks from the selected districts, five villages from each selected block and ten lac growers from each selected villages were selected at random. Thus, the total number of selected untrained lac growers was 400. For comparative analysis of untrained and trained lac growers, 100 trained lac growers were selected randomly who had trained on scientific method of lac cultivation. Primary data were collected from the respondents using a well-structured and pre-tested