

## ADOPTION BEHAVIOUR OF LAC GROWERS TOWARDS IMPROVED LAC CULTIVATION PRACTICES IN WEST SINGH BHUM DISTRICT OF JHARKHAND

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### **ABSTRACT**

The study was conducted in Manoharpur block of West Singhbhum district of Jharkhand. A total number of 120 respondents were selected purposively from 8 villages under Manoharpur block to measure the level of knowledge in improved lac cultivation. The data was collected by personal interview method by using pre-structured interview schedule and latter appropriate statistical analysis was done to draw logical conclusion. The study revealed that 51.66 percent of respondents belong to middle age group and combined 46.66 percent of respondents under upper primary and secondary school level. It was found that majority 51.66 percent of respondents belong to medium level of land holding, i.e., 3-7 acres. The finding also revealed that 46.66 percent of respondents are having middle level of knowledge followed by 32.5 percent of high and 20.84 percent of low level of knowledge of improved lac cultivation practices.

**KEYWORD:** Lac Cultivation, Knowledge, West Singhbhum, Jharkhand

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### **INTRODUCTION**

Lac is the gift of nature to mankind and is the only known commercial resin of animal origin. It is the hardened resin secreted by the tiny lac insects belonging to a bug family. Lac is a resinous protective secretion from of the lac insects. This secretion has great commercial value. So, lac insect is cultivated and lac is collected from the host plant. To produce 1 kg of lac resin, around 3,00,000 insects lose their life. The lac insect yield resin, lac dye and lac wax. Application of these products has been updating with time. Lac still finds extensive use in Ayurveda and Siddha system of medicine. Lac has the unique properties of being eco-friendly, biodegradable and self-sustainable. Moreover, it is a natural material and thus currently it has assumed special importance. Since lac insects are cultured on host trees which are growing primarily in wasteland areas, promotion of lac and its culture can help in eco-system development with reasonably high economic returns. It also acts as a source of livelihood for tribal and poor sub-forest areas.

Earlier lac was not cultivated but collected from naturally occurring infested host plants in forest are personally holding. In the beginning of twentieth century lac host plantations were raised in plains of India to cater to the needs of growing demand of lac trade. Technology interventions in the field of lac production came into force after the establishment of Indian lac research institute, Namkum, Ranchi (Jharkhand, later christened as IINRG). Researches on improvements in the processing and products development was also started by the institute and for which fundamental research work on lac chemistry, its structure and applied aspects on the use of lac in varieties of application were

undertaken. Being a versatile resin of wide utility lac is mainly used in surface coating, pharmaceuticals, varnish, adhesive, electrical, food and leather industries. In addition to those, by-products of lac like lac dye and lac wax are also used extensively. Inimical biota of lac insect includes predators, parasite and diseases. Predators include both vertebrate and invertebrate while parasites are all insects. *Eublema amabilis*, *Pseudophytapapulvera* and *Chysopaspp* are the main predators. The loss caused by the predators and parasites amount to 35-40% annually on an average of which 6-8% damage to the lac crop by the inimical parasites. Points of major considerations are: ( ) current and future status of the pest, ( ) economics of the pest management and ( ) environmental sustainability of different control measures. (Mishra 2017)

In 1925, Indian Lac Research Institute (currently named as Indian Institute of Natural resin and gums) is been established at Namkum, Ranchi. This institute produces good quality of white lac. Indian white lac is supposed to be better than red or other coloured leaves stains at the places where they are kept.

## MATERIALS AND METHODS

The study was conducted in Manoharpur block of West Singhbhum district of Jharkhand. Descriptive research design was adopted for the study as it describes the characteristics or phenomena that are being studied. 120 respondents were selected purposively from 8 villages under Manohar block of West Singhbhum district to measure the level of knowledge of improved lac cultivation practice. The data was collected by personal interview method by using pre-structured interview schedule and latter appropriate statistical analysis (i.e., frequency, percentage, correlation etc.) was done to draw logical conclusion.

**OBJECTIVE:** To determine the knowledge of improved lac cultivation practices by respondents of West Singhbhum district of Jharkhand and its impact on the socio-economic status of the respondents.

## RESULTS AND DISCUSSION

**Table 1: Socio-Economic Profile and Selected Independent Variables of the Respondents**

S.No	Independent Variable	Category	Frequency	Percentage
1.	Age	Young (up to 35 years)	40	33.34
		Middle (36-55 years)	62	51.66
		Old (Above 55 years)	18	15.00
2.	Education	Illiterate	23	19.16
		Primary	9	7.50
		Upper primary	43	35.83
		Secondary	13	10.83
		Upper Secondary	24	20.00
		Graduate and above	8	6.68
3.	Family size	Small (1-3)	42	35.00
		Medium (4-6)	62	51.66
		Large (>7)	16	13.34
4.	Annual income	Low (up to 1 lakh)	42	35.00
		Medium (1-2 lakh)	65	54.16
		High (2 lakh above)	13	10.84
5.	Occupation	Agriculture	40	33.34
		Agriculture + business	50	41.66
		Agriculture + services	30	25.00
6.	Land holding	Low (1-3 acre)	35	29.16
		Medium (3-7 acre)	62	51.66
		High (above 7 acre)	23	19.18

**Table 1 Contd.,**

7.	Lac farming experience	Low (1-10 years)	34	28.34
		Medium (11-20 years)	65	54.16
		High (above 20 years)	21	17.50
8.	Methods use in lac farming	Low	39	32.50
		Medium	58	48.34
		High	23	19.16
9.	Extension Contact	Low	47	39.17
		Medium	54	45.00
		High	19	15.83
10.	Risk bearing capacity	Low	45	37.50
		Medium	58	48.34
		High	17	14.16

From the table- 1. It was found that 51.66 percent of the respondents are under middle age group (36-55 years). It was found that 46.66 percent of the respondents are with upper primary and secondary education. It was found that 51.66 % of respondents are under medium family (4-6). It was found that 54.16 percent of the respondents are under medium level (1-2 lakh). It was found that 41.66 per cent of the respondents are under agriculture + business occupation. It was found that majority 51.66 per cent of the respondents are under medium land holding (3-7 acres). It was found that 54.16 per cent of the respondents are having medium level of lac farming experiences (11-20 years). It was found that 48.34 per cent of the respondents are having medium use of lac farming methods. It found that majority of the respondents 45.00 per cent are with medium extension contact. It was found that majority 48.34 per cent of the respondents are having low medium bearing capacity. Similar finding is also reported by **Pal (2017)**.

**Table 2: Distribution of Respondents According to Knowledge of Respondents towards Improved Lac Cultivation Practices**

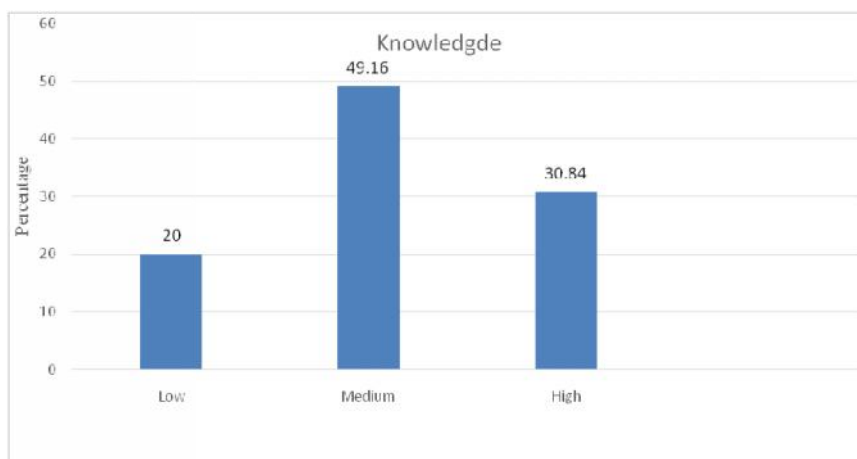
S. No	Statement	FC		PC		NC	
		F	%	F	%	F	%
1.	Minimum age of host plant	21	17.50	72	60.00	27	22.50
2.	Prepare the host plant before transmission of insect	40	33.34	59	49.16	21	17.50
3.	Material uses for inoculation	39	32.50	68	56.66	13	10.84
4.	Sowing is done according to commencement of rains.	52	43.32	54	45.00	14	11.68
5.	Removal brood lac stick after compilation of inoculation.	39	32.50	51	42.50	30	25.00
6.	Verities	33	27.50	53	44.16	34	28.34
7.	Time of application of insecticides	44	33.34	64	53.32	16	13.34
8.	Pest management	34	28.33	67	55.83	19	15.84
9.	Harvesting	22	18.34	75	62.50	23	19.16
10.	Harvesting type	33	27.50	51	42.50	36	30.00
11.	No of yield per year	49	40.84	38	31.66	33	27.50

From the table-2 we can find that majority (43.32%) of the respondents have knowledge of sowing according to commencement of rains followed by 40.84 % of the respondents having knowledge of number of yields per year, time of application of insecticides (33.34%), prepare the host plant before transplanting (33.34%), materials use for inoculation (32.50%), removal of brood lac sticks after compilation of inoculation (32.50%), pest management (28.33%), verities (27.50%), harvesting type (27.50%), harvesting (18.34%), minimum age of host plant (17.50%). Similar findings also reported by **Singh (2015)**.

**Table 3: Distribution of Respondents according to the Knowledge Level**

S. No	Knowledge Level	Frequency	Percentage
1.	Low	24	20.00
2.	Medium	59	49.16
3.	High	37	30.84
	Total	120	100.00

Table no 3 indicate that the most of the respondent's 49.16 percent had medium level of knowledge of improved lac cultivation practices followed by high 30.84 percent and low 20 percent.

**Figure 1: Distribution of Respondents according to their Knowledge of Improved Lac Cultivation Practices.****Table 4: Association between Selected Independent Variables with Knowledge of Improved Lac Cultivation Practices**

S.No	Independent Variables	Knowledge
1.	Age	0.621*
2.	Education	0.932*
3.	Family size	0.561*
4.	Annual income	0.568*
5.	Occupation	0.621*
6.	Land holding	0.776*
7.	Lac farming experience	0.785*
8.	Methods use in lac farming	0.659*
9.	Extension contacts	0.331*
10.	Risk bearing capacity	0.446*

\*= significant

From the above table no 4 we can understand the correlation of independent variables with dependent variables. Independent variables are age, education, family size, annual income, occupation, land holding, lac farming experience, methods use in lac farming, extension contacts and risk bearing capacity and dependent variable is knowledge of improved lac cultivation practices. The study revealed that independent variables have negative and significant correlation with knowledge of improved lac cultivation practices. Therefore, null hypothesis is rejected.

## CONCLUSION

It is concluded that the age of the most of the respondents are under middle age group and their education status is upper primary. Majority of the respondents possessed medium level of land holding (4-6 acres). The most of the respondents have medium level of methods use in improved lac cultivation practices. Majority respondents were low level of extension

contact and risk bearing capacity. The overall knowledge of improved lac cultivation practices found under medium level. The study revealed that occupation, extension contact and risk bearing capacity have negative and significant correlation remain independent variables are positive correlation with knowledge of improved lac cultivation practices.

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