

## KNOWLEDGE OF THE RESPONDENTS TOWARDS IMPROVED LITCHI PRODUCTION PRACTICES IN MUZAFFARPUR DISTRICT OF BIHAR

Shambhvi<sup>1</sup> & Dipak Kumar Bose<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Agricultural Extension and Communication, SHUATS, Prayagraj, India

<sup>2</sup>Associate Professor, Department of Agricultural Extension and Communication, SHUATS, Prayagraj, India

### ABSTRACT

The study was conducted in Muzaffarpur District of Bihar to measure the Knowledge of the respondents towards improved litchi production practices. A total number of 120 respondents were selected randomly from six villages under Musahari block which were selected purposively because productivity, production and area under litchi cultivation were found to be maximum. The data were collected by personnel interview method by using pre structured interview schedule and later appropriate statistical analysis was done to find out the meaningful results. The findings of the study revealed that majority of the respondents 60.00 per cent belonged to the middle- aged, 55.83 per cent had medium level of education and majority of the respondents' annual income was between 1 lakh – 2 lakh. The findings also revealed that 59.17 per cent had medium level of knowledge followed by 20.00 % and 20.83 % of the respondents with low and high levels of knowledge regarding improved litchi production practices. It was found that the independent variables i.e. age, education, annual income, land holding, mass media exposure, extension contact, were positively and significantly correlated with the Knowledge of litchi growers towards improved litchi production practices at 0.01 % of probability. Whereas the variable occupation and family size availed was negatively and non-significantly correlated with the knowledge of litchi growers towards improved litchi production practices at both 0.01 % & 0.05 % of probability respectively.

**KEYWORDS:** Knowledge Chi Production Practices

---

### Article History

**Received: 23 Apr 2022 | Revised: 25 Apr 2022 | Accepted: 27 Apr 2022**

---

### INTRODUCTION

Fruits are of great importance in human diet. India is the second largest producer of fruits in the world. Its share in world fruit production is 11 per cent. The major fruits grown in India are mango, banana, citrus, guava, pineapple, grape and papaya in tropics & subtropics and apple in the temperate region. Apart from these, sapota, aonla, ber, pomegranate, litchi, peach, pear plum and walnut are grown on a sizable area. A number of other fruits such as jack-fruit, lasoda, phalsa, mulberry, beal, fig, date palm etc., are also grown in different regions. Major fruit growing states are Uttar Pradesh, Andhra Pradesh, Bihar, Karnataka, Tamil Nadu, Maharashtra, Kerala and West Bengal. (Chand *et al.* 2014).

The litchi is the most renowned of a group of edible fruits of the soapberry family, sapindaceae. It is botanically designated Litchi chinensis and widely known as litchi. Globally, South-East Asian countries including China, India, Vietnam and Thailand are the largest producers of litchi, but the fruit is also famous in Africa (South Africa and Madagascar), Australia, Indonesia, Spain, USA, Mexico, and Israel (Menzel, 2000; Rajwanshi *et al.*, 2017).

The fruit was introduced in India about 100 years later through Burma, from which it has spread to other parts of the tropical and subtropical areas of the country (**Ghosh, 2000**). The main reasons for low productivity are poor fruit setting/retention in hot, dry spring and biennial bearing due to poor nutrient management (**Menzel and Simpson, 1990**). Litchi being specific to the climatic requirement, it is restricted to only a few states with 66 % of the total production of the country is recorded in Bihar, West Bengal and Jharkhand. Litchi crop mainly helps small and marginal farmers to get some additional income from their homesteads. Litchi cultivation is livelihood security for a large population in the litchi growing states as it offers both on-farm and off-farm employment opportunity.

Muzaffarpur district alone accounts for more than 50 % of the area and production in the state of Bihar. The area under Litchi is likely to increase very fast in the coming year due to low level requirement, commercial viability and easy growing of Litchi in Bihar. (<https://www.researchgate.net>).

## RESEARCH METHODOLOGY

Descriptive research design was adopted for the study as it describes the characteristics or phenomena that are being studied. The present study was conducted in Muzaffarpur district of Bihar. Out of 16 blocks in Muzaffarpur district, Musahari block is selected purposively based on maximum area covered under litchi cultivation. From the selected block, six villages were selected purposively based on the maximum area covered under litchi cultivation. A total number of 120 respondents were taken and 20 respondents from each village were selected randomly for the study.

## OBJECTIVES OF THE STUDY

- To ascertain the socio-economic profile of the respondents.
- To determine the knowledge of the respondents towards improved litchi production practices.

## RESULTS AND DISCUSSIONS

Table 1, it is shown that majority of the respondents belonged to 60.00 per cent of the middle age-group. Majority of the respondents belonged to 55.83 per cent of middle level of education. Majority 53.34 % of respondents were having high level of occupation agriculture + alone, 48.33 percent of the respondents had medium level of income in which 42.5 % of respondents were having small family. Majority 51.67 % of respondents were having medium level of land holding, 47.50 per cent of the respondents possessed a medium level of mass media exposure. Majority of respondents 55.83 % were having medium level of source of information. Majority (54.17 %) of respondents were having medium level of extension contact. 49.17 % of respondents were having medium level of social participation. (41.67 %) of respondents were having medium level of scientific orientation and lastly 44.16 % of respondents were having medium level of risk bearing capacity. Similar findings were also reported by (**Singh et al. 2012**)

Table 3 reveals that majority of the respondents 59.17 % fell in the medium knowledge group, whereas 20.83 per cent respondents were observed in the high knowledge group and remaining 20 per cent respondents formed low knowledge group. It is concluded that majority of farmers were having medium level of knowledge followed by high and low knowledge level, respectively. The similar finding was also reported by the researcher **Mishra et al. (2006)**

Table 4 concluded that the independent variables i.e. age, education, annual income, land holding, mass media exposure, source of information, extension contact, social participation, scientific orientation and risk bearing capacity, were positively and significantly correlated with the Knowledge of litchi growers towards improved litchi production

practices at 0.01 % of probability. Whereas the variable occupation and family size availed was negatively and non-significantly correlated with the knowledge of litchi growers towards improved litchi production practices at both 0.01 % & 0.05 % of probability respectively. The similar finding was also reported by the researcher **Mishra et al. (2006)**

**Table 1: Socio-Economic Profile of the Respondents**

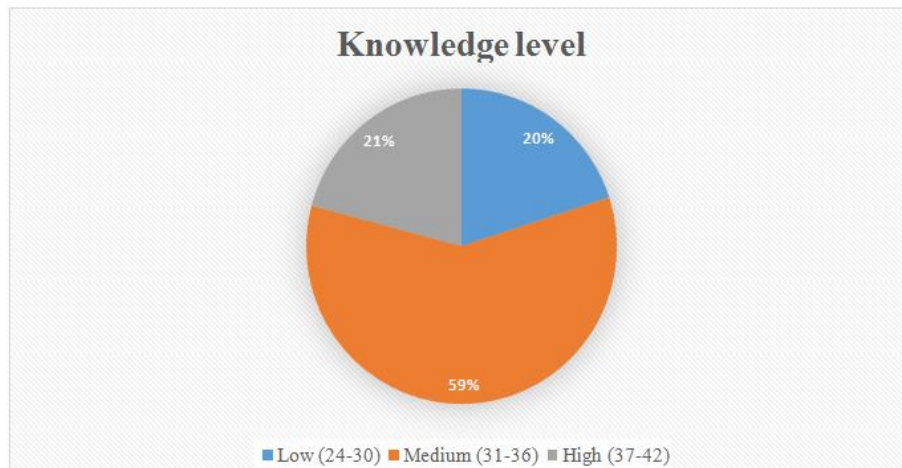
| S. No | Independent Variables  | Category                  | Frequency | Percentage |
|-------|------------------------|---------------------------|-----------|------------|
| 1     | Age                    | Up to 35 years            | 17        | 14.17      |
|       |                        | 36 - 55years              | 72        | 60.00      |
|       |                        | Above 55 years            | 31        | 25.83      |
| 2     | Education              | Illiterate                | 15        | 12.50      |
|       |                        | Primary school            | 32        | 26.67      |
|       |                        | Junior Higher Secondary   | 30        | 25.00      |
|       |                        | Higher Secondary          | 20        | 16.67      |
|       |                        | Intermediate              | 11        | 9.16       |
|       |                        | Graduate above            | 12        | 10.00      |
| 3     | Occupation             | Agriculture               | 64        | 53.34      |
|       |                        | Agriculture + Labour      | 37        | 30.83      |
|       |                        | Agriculture + Business    | 19        | 15.83      |
| 4     | Annual income          | Low (Below 1lakh)         | 33        | 27.5       |
|       |                        | Medium(1lakh-2 lakh)      | 58        | 48.33      |
|       |                        | High(above 2 lakh)        | 29        | 24.17      |
| 5     | Family size            | Small                     | 51        | 42.5       |
|       |                        | Medium                    | 37        | 30.83      |
|       |                        | High                      | 32        | 26.67      |
| 6     | Size of land holding   | Marginal( less than 1 ha) | 36        | 30.00      |
|       |                        | Small ( 1-2 ha)           | 62        | 51.67      |
|       |                        | Large (above 2 ha)        | 22        | 18.33      |
| 7     | Mass media exposure    | Low (7-9)                 | 29        | 24.17      |
|       |                        | Medium (10-11)            | 57        | 47.50      |
|       |                        | High (12-13)              | 34        | 28.33      |
| 8     | Source of information  | Low (10-15)               | 33        | 27.5       |
|       |                        | Medium (16-20)            | 67        | 55.83      |
|       |                        | High (21-25)              | 20        | 16.67      |
| 9     | Extension contact      | Low (8-12)                | 37        | 30.83      |
|       |                        | Medium (13-16)            | 65        | 54.17      |
|       |                        | High (17-20)              | 18        | 15.00      |
| 10    | Social participation   | Low (9-13)                | 43        | 35.83      |
|       |                        | Medium (14-17)            | 59        | 49.17      |
|       |                        | High (18-21)              | 18        | 15.00      |
| 11    | Scientific orientation | Low (7-10)                | 37        | 30.83      |
|       |                        | Medium (11-13)            | 50        | 41.67      |
|       |                        | High (14-16)              | 33        | 27.5       |
| 12    | Risk bearing capacity  | Low (6-9)                 | 34        | 28.33      |
|       |                        | Medium (10-12)            | 53        | 44.16      |
|       |                        | High (13-15)              | 33        | 27.50      |

**Table 2: Knowledge Level of Respondents for Recommended Litchi Production Practices**

| S. No | Particulars   | Fully Correct | Partially Correct | Not Correct   |
|-------|---|---------------|-------------------|---------------|
|       |   | F (%)         | F (%)             | F (%)         |
| 1     | Land preparation<br>Traditional method 2-3 times ploughing  | 39<br>(32.50) | 54<br>(45.00)     | 27<br>(22.50) |
| 2     | Improved varieties <ul style="list-style-type: none"> <li>Shahi litchi</li> <li>Bedana</li> </ul>   | 53<br>(44.17) | 41<br>(34.17)     | 26<br>(21.67) |
| 3     | Propagation methods <ul style="list-style-type: none"> <li>Air layering</li> </ul>  | 26<br>(21.67) | 61<br>(50.83)     | 33<br>(27.50) |
| 4     | Plant to plant distance<br>(8m to 10m)  | 57<br>(47.50) | 36<br>(30.00)     | 27<br>(22.50) |
| 5     | Fertilizer management <ul style="list-style-type: none"> <li>FYM- 40-60Kg/tree</li> <li>Nitrogen- 200g/tree</li> <li>Phosphorus-320g/tree</li> <li>Potassium-500g/tree</li> </ul> | 51<br>(42.50) | 43<br>(35.83)     | 26<br>(21.67) |
| 6     | Irrigation <ul style="list-style-type: none"> <li>Initial stage- 2-3 days</li> <li>Young plant- 5-7 days</li> </ul>   | 33<br>(27.50) | 61<br>(50.83)     | 26<br>(21.67) |
| 7     | Major insects –pest <ul style="list-style-type: none"> <li>Litchi mite</li> <li>Shoot borer</li> </ul>  | 36<br>(30.00) | 57<br>(47.50)     | 27<br>(22.50) |
| 8     | Soil –<br>Deep, well drained Loamy soil   | 42<br>(35.00) | 52<br>(43.33)     | 26<br>(21.67) |
| 9     | Soil P.H – 5.5-7.5  | 23<br>(19.17) | 47<br>(39.17)     | 50<br>(41.67) |
| 10    | Harvesting time- <ul style="list-style-type: none"> <li>May to June</li> </ul>  | 65<br>(54.17) | 39<br>(32.50)     | 16<br>(13.33) |
| 11    | Correcting harvesting procedure   | 39<br>(32.50) | 59<br>(49.17)     | 22<br>(18.33) |
| 12    | Suitable inter crops<br>Radish, Carrot, Cauliflower, Peas   | 31<br>(25.83) | 67<br>(55.83)     | 22<br>(18.33) |
| 13    | Application of plant growth regulators  | 17<br>(14.17) | 39<br>(32.50)     | 64<br>(53.33) |
| 14    | Storage of produce after harvesting   | 37<br>(30.83) | 56<br>(46.67)     | 27<br>(22.50) |
| 15    | Marketing(Local/Mandi/Long distance)  | 27<br>(22.50) | 69<br>(57.50)     | 24<br>(20.00) |

**Table 3: Distribution of Respondents on the Basis of their Level of Knowledge**

| Knowledge Level   | Frequency  | Percentage    |
|-------------------|------------|---------------|
| Low<br>(24-30)    | 24         | 20            |
| Medium<br>(31-36) | 71         | 59.17         |
| High<br>(37-42)   | 25         | 20.83         |
| <b>Total</b>      | <b>120</b> | <b>100.00</b> |



**Figure 1: Distribution of Respondents on the Basis of their Level of Knowledge.**

**Table 4: Association between Selected Independent Variables with Knowledge**

| S. No. | Variables              | Correlation Coefficient (r) |
|--------|------------------------|-----------------------------|
| 1      | Age                    | 0.974*                      |
| 2      | Education              | 0.991*                      |
| 3      | Occupation             | 0.133**                     |
| 4      | Annual income          | 0.989*                      |
| 5      | Family size            | 0.281**                     |
| 6      | Size of land holding   | 0.932*                      |
| 7      | Mass media exposure    | 0.989*                      |
| 8      | Source of information  | 0.958*                      |
| 9      | Extension contact      | 0.908*                      |
| 10     | Social participation   | 0.785*                      |
| 11     | Scientific orientation | 0.970*                      |
| 12     | Risk bearing capacity  | 0.998*                      |

\*=Correlation is significant at the 0.01 level of probability

\*\*= Correlation is significant at the 0.05 level of probability

NS= Non-significant

## CONCLUSIONS

It is concluded that majority of the respondent’s belonged to middle-aged group, having education Up to primary level, having medium level annual income. Further, majority of the respondents belonged to small family with land holding of more than 1 to 2 hectares and. Majority of the respondents had medium levels of mass media exposure, extension contact and scientific orientation. It was found that most of the respondents had medium level of knowledge towards improved litchi production practices. It was found that independent variables like age, occupation, source of information were positively and significantly correlated with knowledge towards improved litchi production practices.

## REFERENCES

1. Ghosh, S.P., 2000. World trade in litchi: past, present and future. 1st International Symposium on Litchi and Longan 558, 23-30.
2. Menzel, C., 2000. The physiology of growth and cropping in lychee. In 1st International Symposium on Litchi and Longan. 558. 175-184.

3. **Menzel, C.M. and Simpson, D.R., 1990.** *Performance and improvement of lychee cultivars: a review.* *Fruit Varieties Journal*, 44(4), 197-215.
4. **Mishra D.S. 2006.** *Delaying the harvesting period of litchi (Litchi chinensis Sonn.) cv. Rose Scented.* *Prog. Hort.*, 46(2):273-275.
5. **Mishra, M.; Singh, B. and Chaturvedi, V.K. (2018).** “*Knowledge and adoption of improved fruit preservation practices among rural women*”. *Indian Journal of Extension Education*, Vol. 44, No. 1 and 2:120-122.
6. **Rajwanshi, R., Kumar, M. and Lal, B., 2017.** *Pre-and postharvest management practices for Litchi production in India.* In *Lychee Disease Management.* Springer. 45-66
7. **Singh, H.P. and Babita, S., 2012.** *Lychee production in India.* *Lychee Production in the Asian-Pacific Region.* Food and Agriculture Organization of the United Nations, Bangkok. 55-67.