*Original Research Article*

# Knowledgeof Farmer Towards Improved Onion Production Practices In Gaya District Of Bihar

**Abstract:**The study was conducted in Gaya District of Bihar to measure the extent of Knowledge of farmer towards improved onion production practices in Gaya district of Bihar. Based on the highest concentration of onion growers in the district, a total of 120 respondents were purposefully chosen from five villages within the Bodhgaya block. In order to derive logical conclusions, the data were properly statistically analysed after being acquired utilising the personnel interview method using a pre-structured interview schedule. The study revealed that majority of respondents (62.5%) were in the middle age range, 43.33 respondents had marginal land holding, The maximum number of respondents having medium level extension contact, scientific orientation, and risk orientation, source of information, economic motivation and 64.17 per cent of the respondents had medium level of knowledge about Onion production practices. Respondents had maximum knowledge about soil type, plough, FYM, varieties, seed treatment, sowing time, nursery transplanting, seed rate, weeding and Hoeing, season of growing and harvesting etc and they had less knowledge about seed treatment, nursery transplanting,e.t.c. and age, education qualification, family size, housing pattern, land holding, annual income, extension contact, source of information, scientific orientation, economic motivation, and risk bearing capacity were positively and significantly correlated with knowledge of Onion grower.

Add some background information, about three lines in the beginning of abstract.

***Keywords:*** Knowledge, Onion, improved production practices.



## INTRODUCTION

Onion (*Allium cepa* L.) is an important and indispensable item in every kitchen as condiment and vegetable. The green leaves, immature bulbs are eaten raw or used in preparation of vegetable. It is valued much on account of its special characteristics of pungency. Onion is used in soup, Sauces and seasoning food. Dehydrated bulb or onion powder is in a great demand which reduces the transport cost and storage losses. Dried onion flakes can be reconstituted by cooking in water. Vegetables being a rich and cheap source of vitamins and minerals, occupy an important place in the food basket of Indian consumers, a majority of whom are vegetarian by either choice or lack of access.

Onion has medicinal properties and it has many uses as folk remedies and recent reports suggest that onion plays a part in preventing heart disease and other ailments. It is diuretic and can be applied on bruises, boils and wounds. Onion is a most important bulbous crop among the cultivated vegetable or horticultural crops and it is of universal importance. **(Purse Glove 1972 and Meena*et al.*, 2013).**

India has varying climatic conditions and provides an opportunity for growing a large number of horticulture crops including vegetables. It is regarded as a highly export oriented crop and earns valuable foreign exchange for the country **(Kulkarni*et al.*, 2012).**

In India total area under cultivation of onion crop is 1.94 million ha. **(statista.com, 2022)**With the total production of 2.34 million tonns**(Ministry of Agriculture &Farmers Welfare, Government of India, 2019)**.India being a second major onion producing country in the world has a productivity of 16.0 MT/ha only **(Indian Horticulture Database, 2011 and Anonymous, 2012).**

The reasons for lower productivity of onion in India could be attributed to the limited availability of quality seed and lack of development of hybrids in onion is the major limiting factors among the others **(Kulkarni*et al.*, 2012).** Although onion is produced in all the States in India, the key onion producing states are Maharashtra, Karnataka, Madhya Pradesh, Rajasthan, Gujarat, Andhra Pradesh and Bihar which together constitute around 70 percent of the area under onion in the country. During recent years, Rajasthan, Madhya Pradesh and Bihar have emerged as an important onion growing States. Maharashtra state covers maximum area and production of onion in India. Bihar state has 5th position in area (10.64 lakh tonnes) while 4th position in both production (1064.17 thousand tonnes) and productivity (19.86 tonnes/hectare) of onion in India **(Gummagolmath*et al.*, 2013).**

## 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 Gaya district of Bihar. Out of 24 blocks in Gaya district, Bodhgaya block is selected purposively based on the maximum number of Onion growers in the district. From selected block, in five villages 24 respondents from each villageswere selected randomly thus a total number of 120 respondents were taken based on the maximum number of Onion growers in the district.

**Objectives of the Study:**

**1-** To assess the socio-economic profile of the respondents.

**2-** To examine the knowledge of improved onion production practices by the respondents.

## RESULTS AND DISCUSSION

**Table No. 1- Socio-economic profile of the respondents**

| S. No | Independentvariables | Category | Frequency | Percentage |
|---|---|---|---|---|
| 1. | Age | Young (Upto 35 years) | 6 | 5 |
| | | Middle(36-55 years) | 75 | 62.5 |
| | | Old (above 55 years) | 39 | 32.5 |
| 2. | Education | Illiterate | 28 | 23.33 |
| | | Primary School | 11 | 9.16 |
| | | High School | 38 | 31.67 |
| | | Intermediate | 32 | 26.67 |
| | | Graduate & above | 11 | 9.17 |

| | | | | |
|---|---|---|---|---|
| 3 | Occupation | Exclusively Agriculture | 58 | 48.33 |
| | | Agriculture & Wage worker | 33 | 27.5 |
| | | Agriculture &Business | 24 | 20 |
| | | Agriculture & Service | 5 | 4.17 |
| 4 | Size of family | Small (<5 members) | 23 | 19.17 |
| | | Medium (5 – 6 members) | 54 | 45.00 |
| | | Large (>6 members) | 43 | 35.83 |
| 5 | Housing pattern | Kachha | 12 | 10.00 |
| | | Semi-cemented | 68 | 56.67 |
| | | Cemented | 40 | 33.33 |
| 6 | Land holding | Marginal(<1 ha.) | 52 | 43.33 |
| | | Small (1.0-2.0) | 23 | 19.17 |
| | | Medium(2.0-4.0) | 22 | 18.33 |
| | | Large(>4.0) | 23 | 19.17 |
| 7 | Annual income | Low (< 100000) | 61 | 50.83 |
| | | Medium (100001 - 200000) | 48 | 40.00 |
| | | High (>200001) | 11 | 9.17 |
| 8 | Extension contacts | Rarely (6-7) | 23 | 19.67 |
| | | Sometimes (8-9) | 64 | 53.33 |
| | | Frequently (10-11) | 33 | 27.5 |
| 9 | Scientific orientation | Low (10-12) | 28 | 23.33 |
| | | Medium (13-14) | 54 | 45.00 |
| | | High (15-16) | 38 | 31.67 |
| 10 | Source of information | Low (11-12) | 26 | 21.67 |
| | | Medium (13-14 ) | 56 | 46.67 |
| | | High (15-16) | 38 | 31.66 |
| 11 | Economic motivation | Low (10-12) | 24 | 20.00 |

| | | | | |
|---|---|---|---|---|
| | | Medium (13-14 ) | 56 | 46.67 |
| | | High (15-16 ) | 40 | 33.33 |
| 12 | Risk bearing capacity | Low (10-12) | 28 | 23.33 |
| | | Medium (13-14 ) | 54 | 45 |
| | | High (15-16 ) | 38 | 31.67 |

From the table 1, It shows that 62.5 per cent of the respondents belong to the middle age group.It can be clearly seen that31.67 per cent of the respondents areilliterate. It is significantly visible that 46.67 per cent of the respondents are having only agriculture only as their occupation and 45.00 per cent of the respondents hashavemedium size family.It is depicted in table that 56.67 per cent of the respondents has Semi-cemented housing pattern. In terms of land holding 43.33 per cent of the respondentshas between marginal<1 ha. andannual income 58.83 per cent of the respondents haslow level of income (i.e<100000).Similar finding also reported by **Shukla and Singh (2018).**It is also evident that 57.50 per cent of the respondentshasrarely level of extension contact.Similar finding also reported by **Vaishnavi&Aski (2018).**It is depicted in table that 45.00 per cent of the respondents hasmedium level of scientific orientation and 46.67 per cent of the respondents has medium level of source of information. It is seen that 46.67 percent of the respondents showed medium level of economic motivation and 45.00 per cent of the respondents showed medium level of risk bearing capacity.Change has (marked red) to have.<always use the sign of equal or less than. It is statistically recommended.

**Table No. 2-Knowledge of the respondents towards Improved Onion Production Technology.**

| S. No. | Statement | Response | | |
|---|---|---|---|---|
| | | Fully Correct F% | Partially Correct F% | Not corrected F% |
| 1. | Sandy loam soil, loamy soil, soil is suitable for the onion crop. | 110 (91.67%) | 10 (8.33%) | 0 (0%) |
| 2. | Deep plouhgingwith cultivators.Correct spelling Is ploughing. | 100(83.33%) | 20(16.67%) | 0 (0%) |
| 3. | FYM 20-25 t/ha. | 75(62.5%) | 38(31.67%) | 7 (5.83%) |
| 4. | Improved variety:Patna red | 76(63.33%) | 44(36.67%) | 0(0%) |

| | | | | |
|---|---|---|---|---|
| 5. | Seed treatment. | 4(3.33%) | 15(12.5%) | 101(84.17%) |
| 6. | Sowing time in rabi season of nursery. | 30(25.00%) | 80(66.67%) | 10(8.33%) |
| 7. | Nursery transplanting | 14(11.67%) | 24(20.00%) | 82(68.33%) |
| 8. | Seed from KVK or Other research station. | 8(6.67%) | 46(38.33%) | 66(55.66%) |
| 9. | Seed rate/ha 8 to 10 kg/ha. | 55(45.83%) | 45(37.5%) | 20(16.67%) |
| 10. | Spacing: 12.5*7.5 cm | 49(40.83%) | 65(54.17%) | 6(5.00%) |
| 11. | N:P:K/ha.110:40:60kg. | 51(42.5%) | 57(47.5%) | 12(10.00%) |
| 12. | Sulphure35kg/ha. | 41(34.17%) | 67(55.83% | 12(10.00%) |
| 13. | weeding and Hoeing. | 56(46.67%) | 60(50.00%) | 4%(3.33%) |
| 14. | Irrigate 10 to15 times. | 31(25.83%) | 71(59.17%) | 18(15.00%) |
| 15. | Weedicide Pest and disease through Dithane M-45 (0.3%) and Profenophos (0.1%). | 22 (18.33%) | 84 (70.00%) | 14 (11.67%) |
| 16. | Harvest 110 to 140 days. | 41(34.17%) | 64(53.33%) | 6(5.00%) |
| 17. | Yield 15 to 20t/ha. | 24(20.00%) | 90(75.00%) | 6(5.00%) |
| 18. | Storage method of onion. | 30(25.00% | 76(63.33%) | 14(11.67%) |

The above table2,Shows that a majority, 91.67 per cent of the respondents, fully Correct that there should be soil is suitable for the onion crop. 83.33 per cent of the respondents, Fully Correct in deep ploughingploughing with cultivators. 62.5 per cent fully Correct about using FYM manure.63.33 per cent of the respondents, fully Corrected in when it came to the use of high yielding variety i.e. Patna Red e.t.c. it is etc.84.17 per cent of the respondents disagreed on having knowledge of seed treatment with Bio-fertilizer. 66.67 per cent of the respondents also partially Correct about nursery sowing time rather preferred conventional time. 45.83 per cent of the respondents were partially Correct about using seed in per Ha.68.33 per cent of the respondents disagree about suitable time of transplanting of nursery and 54.17 per cent of the respondents partially Correct about suitable spacing in onion crop. 55.66 per cent of the respondents were disagree on bring the seed from KVK or Other research station. 47.5 per cent of the respondents were partially Correct on the doses of fertilizer in optimum amount and 55.83 per cent of the respondents were partially Correct on the dose of sulphurin optimum amount.50.00 per cent of the respondents were partially Correct in knowing

intercultural operation such as weeding & hoeing. 59.17 per cent of the respondents partially Correct that irrigation at critical period is must for production.70.00 per cent of the respondents partially Coreect on using chemicals as weedicide, pesticide and disease. 53.33 per cent respondents partially Correct on having the knowledge of suggested harvesting time. 75.00 per cent respondent partially Correct on gaining the yield up to 15-20 t/ha. 63.33 per cent respondent partiallyCorrect on the keep the crop in ware house.

**Table No. 3- Distribution of Respondents According to their Overall Knowledge Level**

| S. No. | Category | Number | Percentage |
|---|---|---|---|
| 1. | Low level knowledge (21 – 27) | 22 | 18.33 |
| 2. | Medium level knowledge (28 – 33) | 77 | 64.17 |
| 3. | High level knowledge (34 – 39) | 21 | 17.50 |
| | Total | 120 | 100.00 |

Table 3, reveals that 64.17 per cent of the respondents had medium level of knowledge towards improved Onion production technology. Considerable percentage of respondents were found having low level 18.33 per cent and high level 17.50 per cent of knowledge respectively. Similar finding was also reported by**Choudhary*et al.*(2019).**

**Fig. 1- Distribution of respondents according to their overall knowledge towards improved Onion production technology.**

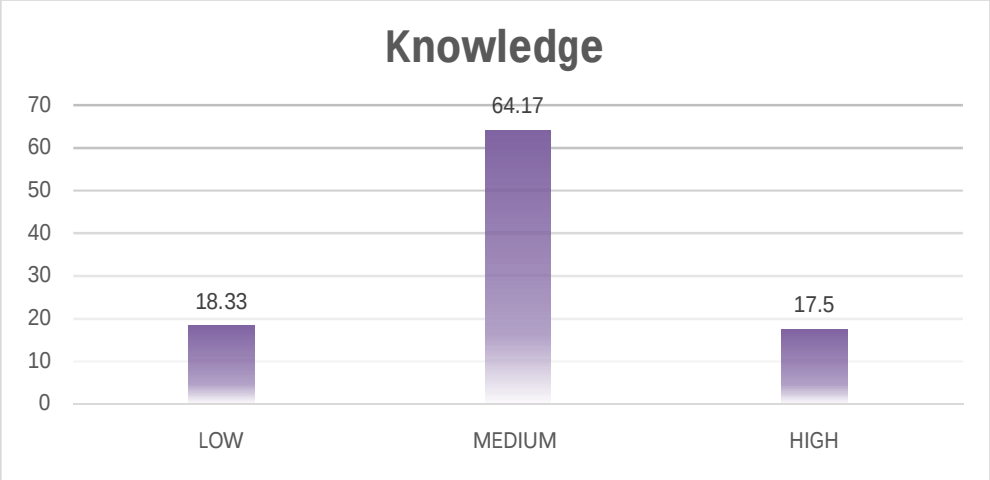


**Table No. 4 Association between selected independent variables with utilization.**

| Sl.No. | Variables | Correlation coefficient |
|---|---|---|
| **1** | Age | 0.870733* |
| **2** | Educational Qualification | 0.709671* |
| **3** | Occupation | 0.928346* |

| | | |
|---|---|---|
| **4** | Family Size | 0.761433* |
| **5** | Housing pattern | 0.858119* |
| **6** | Land holding | 0.301058** |
| **7** | Annual Income | 0.282066** |
| **8** | Extension Contact | 0.968495* |
| **9** | Source of Information | 0.911352* |
| **10** | Scientific Orientation | 0.918413* |
| **11** | Economic Motitvation | 0.858119* |
| **12** | Risk Bearing Capacity | 0.918413* |

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

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

**NS = Non-significant**

From above the table 4: analysed that the variables namely age, education,occupation, family size, housing pattern, extension contact, source of information, scientific orientation, economic motivation and risk bearing capacity, were positively and significantly correlated with knowledge of respondents towards improved onion production technology at 0.01% of probability & variables like land holding and annual income, was positively and significantly correlated with knowledge of respondents towards improved onion production technology at 0.05% of probability.

## CONCLUSION:

It was conclude that majority of respondents are middle-aged, illiterate.Belongs(not clear)farmers,have medium-sized families. live in semi-cemented houses,have marginal land holdings, low incomes. Respondents have medium level of contact with extension agents,scientific orientation, source of information, economic motivation, and risk-bearing capacity. The majority of respondents had a medium level of knowledge about improved onion production technology. Age, education, land holding, occupation, family size, housing pattern, source of information, scientific orientation, economic motivation, and risk-bearing capacity, were positively and significantly associated with the knowledge of the respondents.

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