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# **Knowledge Extent of Farmers Towards Improved Radish Production Technology in Eastern Uttar Pradesh, India**

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## **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Radish is an important source of nutrition in our diet. Although farmers in eastern Uttar Pradesh are growing radish for a long time many farmers are lacking good knowledge of radish and its new varieties production practices. The study was conducted to know the level of knowledge of production practices among radish cultivating farmers of the eastern Uttar Pradesh region. A personal interview was conducted with hundred and fifty farmers those were selected through proportionate random sampling technique from ten selected village panchayat on the basis of fifteen

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farmers from each village panchayat. Highest knowledge level was observed in sowing time and irrigation management (100 per cent) followed by, field preparation (82.67 per cent), harvesting (80.66 per cent), weed management (74.00 per cent), high yielding varieties (72.00 per cent), plant protection measure (70.00 per cent), fertilizer application (68.67 per cent), spacing (68.00 per cent), inter cropping (61.33 per cent), plant growth regulator (50.67 per cent), respectively. Total knowledge index was calculated to be 74.67 per cent. Out of sixteen variables i.e., caste, education, material possession, risk orientation, scientific motivation, extension contact, awareness and adoption were found highly significant and positively correlated with knowledge at 0.05 % of significance level. The variables age is also highly significant but negatively correlated with knowledge level. Variables like annual income, marital status, land holding, type of family, size of family and social participation were found not significant but positively correlated with knowledge level. Only one variable economic motivation was found not significant and negatively correlated with knowledge level.

**Keywords:** Knowledge level; radish growers; Eastern Uttar Pradesh.

## 1. INTRODUCTION

Radish (*Raphanus sativus* L.) is a root vegetable crop that belongs to *Brassicaceae* family. Fortified merchandise has been prefabricated from dehydrated radish and its leaves powder viz., Chilly biscuits and soup mix. Radish is grown for its young gentle tuberous roots which are eaten raw as salad or cooked as a vegetable. It is enjoyable for its pungent flavor and considered as an appetizer. The juvenile leaves are also cooked as vegetable and eaten. Radish has revitalizing and purifying properties. Radish is useful in liver and gall bladder inconvenience. The composition of fresh Radish root is as Moisture (94.4 g), Protein (0.7 g), Fat (0.1 g), Fiber (0.8 g), Carbohydrates (3.4 g), Minerals (0.6 g), Phosphorus (22 mg), Iron (0.06 mg), Vitamin A (5 I.U.), Riboflavin (0.02 mg), Thiamine (0.06 mg), Calcium (50 mg) and Vitamin C (15 mg). In India, radish is grown over an area 202 million hectare in 2018-19 with an annual production of 3145 metric ton (nhb.gov.in)/ [1]. It is mainly grown in West Bengal, Bihar, Uttar Pradesh, Karnataka, Punjab, Maharashtra and Assam. In Uttar Pradesh it is grown on large scale throughout the year in areas around the big cities. In Uttar Pradesh radish accounts for 5.84-million-hectare area with a production of 150.27 metric ton. The average productivity of radish is 12.77 t/ha. Considering the importance of the radish crop it is imperative to study it from different viewpoints so that we can get more and more knowledge about it, which can help our research system to improve the productivity and efficiency of agricultural sector [2,3]. "Several programmes are running for increasing knowledge level of farmers throughout the country. But still, there is a wide gap between the

technology available with the researchers in research institutes and its knowledge in farmer's fields particular in radish [4-6]. The knowledge level of improved technology of radish crop by the farmers is not uniform due to several reasons i.e., lack of mechanization, non-availability of quality seeds, lack of irrigation facilities, lack of market facilities" [7,8]. So, this study was designed to carried out the knowledge level of farmers regarding improved radish production technology in eastern uttar pradesh.

## 2. METHODOLOGY

The region of Eastern Uttar Pradesh comprises with eighteen districts out of that Jaunpur district were selected purposely for the study to understand the ground reality of radish production technology with respect to the issues in the village. Another consideration for selecting this district was the close familiarity of investigator with this area, people, official, non-official and local dialect which enabled investigator to carry out the work more efficiently.

The study was done in during 2020-2021 to know the knowledge level of farmers. The study was carried out in Kerakat and Dobhi block of Jaunpur district. A total of ten villages (five villages from each block) were selected with the help of a stratified random sampling method from two blocks. A total of one hundred and fifty radish growers (fifteen from each village) were selected with simple random sampling for the study. The primary data were collected personally through group discussion and a pre-tested interview schedule which was prepared on the basis of objectives of the study. For determining knowledge level, a questionnaire was prepared

as per recommended package of practices of radish crop. The responses were recorded on a two-point continuum as complete yes and no knowledge and were given 1 and 0 score, respectively. The knowledge level possessed by individual respondents was measured by computing knowledge index. On the basis of scores gained by each respondent the respondents were categorised into low (up to 08), medium (09 to 18) and high (above 19).

### 3. RESULTS AND DISCUSSION

Knowledge plays an important role in decision making process at the individual level. Ascertaining the level of knowledge among farmers was done to know their perception about the sustainability of radish crop. Knowledge was perceived as the level up to which different practices were known by the sampled farmers. Further, practice-wise knowledge was calculated to see the level of knowledge. Table 1 shows that among all eleven agricultural practices of crop production, cent per cent knowledge level was observed in sowing time and irrigation management followed by, harvesting (80.66 per cent), field preparation (76.00 per cent), weed management (74.00 per cent), high yielding varieties (72.00 per cent), plant protection measure (70.00 per cent), fertilizer application (68.67 per cent), spacing (68.00 per cent), inter

cropping (61.33 per cent), plant growth regulator (50.67 per cent), respectively.

Total knowledge index was calculated to be 74.67 per cent. By assessed of Table 1 it can be said that the knowledge level of farmers about radish production technology seems to be satisfactory.

Results from Table 2 revealed that 46.67 per cent farmers had medium level of knowledge regarding radish production technology followed by, low (27.33%) and high (26.00%) respectively.

Table 3 shows that out of sixteen variables i.e., caste, education, material possession, risk orientation, scientific motivation, extension contact, and adoption was found highly significant and positively correlated with knowledge level. The variables age is also highly significant but negatively correlated with knowledge level. Variables like annual income, marital status, land holding, type of family, size of family and social participation were found not significant but positively correlated with knowledge level. Only one variable economic motivation was found not significant and negatively correlated with knowledge level. It means that if the value of these variable increases, the knowledge level of cultivation practices was also increases.

**Table 1. Practice wise knowledge level of farmers**

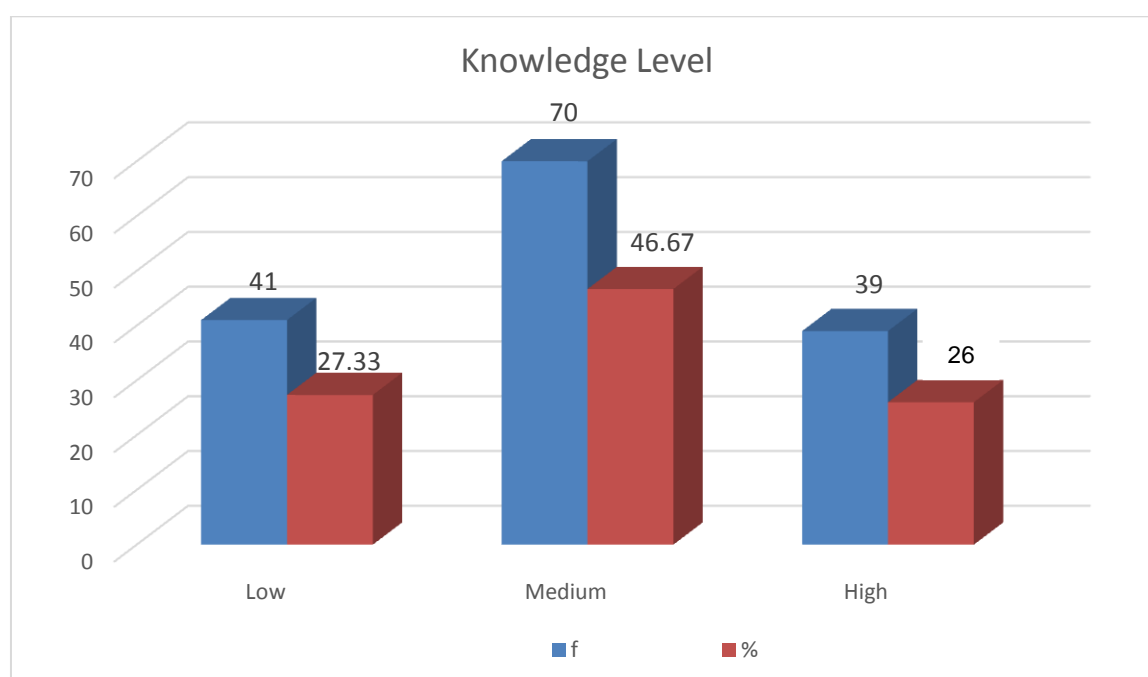
S. No.	Practices	Per cent	Rank
1.	Field preparation	76.00	IV
2.	High yielding varieties	72.00	VI
3.	Sowing time	100.00	I
4.	Spacing	68.00	IX
5.	Fertilizer Application	68.67	VIII
6.	Irrigation Management	100.00	II
7.	Plant Growth Regulator	50.67	XI
8.	Inter Cropping	61.33	X
9.	Weed Management	74.00	V
10.	Plant Protection Measure	70.00	VII
11.	Harvesting	80.66	III

%= Per cent

**Table 2. Overall knowledge level of farmers**

S. No.	Knowledge Level	f	Per cent
1	Low (up to 08)	41	27.33
2	Medium (09 -18)	70	46.67
3	High (above 19)	39	26.00

f= frequency, %= Per cent



**Fig. 1. Knowledge level wise distribution of farmers**

**Table 3. Correlation coefficient between different variables and knowledge level of farmers regarding improved radish production technology**

S. No.	Variables	Correlation coefficient
1.	Age	-0.73**
2.	Caste	0.25**
3.	Education	0.96**
4.	Annual Income	0.14 <sup>NS</sup>
5.	Marital Status	0.14 <sup>NS</sup>
6.	Land Holding	0.11 <sup>NS</sup>
7.	Size of Family	0.10 <sup>NS</sup>
8.	Type of Family	0.15 <sup>NS</sup>
9.	Material Possession	0.32**
10.	Social Participation	0.09 <sup>NS</sup>
11.	Risk Orientation	0.86**
12.	Economic Motivation	-0.02 <sup>NS</sup>
13.	Scientific Orientation	0.33**
14.	Extension Contact	0.86**
15.	Adoption	0.97**

\*Significant at 0.05 per cent probability level 0.176

\*\* Significant at 0.01 per cent probability level 0.230

#### 4. CONCLUSION

Village is the prime institute striving for integrated rural development. Study focuses on knowledge level of farmers. According to the study, the majority of radish growers had a medium level of knowledge of the technological procedures for cultivating radish crops. It becomes crucial for extension agencies to engage in activities like training, group discussions, and field excursions to educate farmers about the best practises for

growing radishes. As the radish crop is very important to us, it is necessary to develop a profitable and sustainable agricultural system with the wise use of resources so that our future generations do not experience a lack of their basic need, namely food.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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