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Knowledge extent of package of practices in onion cultivation in Ayodhya district of Uttar Pradesh

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Abstract

The present study was conducted in the Ayodhya district of Uttar Pradesh during 2024-2025 to assess the knowledge extent of farmers regarding the package of practices in onion cultivation. A total of 160 respondents were selected from 16 villages across four purposively selected blocks. The findings revealed that the majority of respondents (59.37%) had medium-level knowledge, followed by 25.00% with high-level and 15.63% with low-level knowledge. Maximum knowledge was observed in field preparation practices, while plant protection and seed treatment received the least attention. The study emphasizes the need for focused training in weak areas to improve scientific onion cultivation.

Keywords: Onion cultivation, package of practices, knowledge extent

Introduction

One of the most significant commercial vegetable crops grown widely in India is the onion (*Allium cepa* L.), which is a member of the Alliaceae family, which also includes chives, leeks, and garlic. Since onions are a necessary vegetable and condiment in every kitchen, they have a sizable internal market. Onions are eaten raw or cooked, and their green leaves and young bulbs are used as vegetables. In addition, dried onion products, such as onion powder and flakes, are much sought after since they are more convenient, cost less to transport, and last longer in storage than fresh onions. Their usefulness in culinary applications is further increased by reconstituting dried onion flakes by boiling them in water (Verma *et al*., 2023) [12]. India is the world's second-largest producer of onions, after China, and the third-largest exporter, after the Netherlands and Spain. In India, Maharashtra is the top producer of onions, followed by Gujarat and Karnataka. Orissa, Andhra Pradesh, Uttar Pradesh, Tamil Nadu, Rajasthan, and Bihar are among the states that cultivate the crop extensively.

The volatile oil allyl-propyl-disulphide gives onions their distinctive smell, aroma, and pungency, which makes them valuable. Enzymatic reactions that occur when tissues are damaged result in pungency. Bulbs are suitable for both long-distance transportation and long-term storage. It may be curried, fried, boiled, baked, or used to make soups, pickles, and other dishes. It can also be served as a salad. Marketing onion flakes and dried onions adds value to onions. Calcium (180 mg/100 g) and phosphorus (50 mg/100 g) are two minerals that are abundant in onion bulbs. Bulbs have been used for a variety of medical purposes, including as a diuretic and to treat boils and wounds. Onion greens are also harvested when the crop is pencil thick and has a little bulb.

A global review of onion area and production revealed that onion is grown in the world in an area of 43.64 lakh hectares with a total production of 873.44 lakh tons and productivity of 21.79 tons/ha. China and India are leading onion growing countries with a total production of 247.00 and 159.40 lakh tons, respectively during the year 2017, followed by USA, Iran, Egypt, Turkey, Russian Federation, Pakistan, Brazil, Netherlands, Korea, Mexico and Spain as per FAO report. The productivity of onion is highest (66.16 tons/ha) in Republic of Korea, followed by USA (56.26 tons/ha), Spain (53.31 tons/ha) and Netherlands (51.64 tons/ha) while the productivity in India is quite low (14.35 tons/ha).Global trade of onion export is 6.77 million tons and Netherland tops, exporting 1.33 million tons, followed by the India, China, Egypt, Mexico, USA, Spain, Argentina, Turkey and Poland during the year 2017 as per FAO report. Bangladesh, Malaysia, Russian Federation, UK, Japan, USA, Saudi Arabia, Germany, Netherlands, UAE, Canada, Sri Lanka and Belgium are major onion importing countries in the world (Source: nhrdf.org).

Methodology

The present study was conducted in the Ayodhya district of Uttar Pradesh during the year 2024-2025. A multi-stage sampling method was adopted for the selection of respondents.

The state (Uttar Pradesh) and district (Ayodhya) were selected purposively due to the relevance of onion cultivation. Four blocks were purposively selected: Masodha, Tarun, Bikapur, and Harringtonganj. From each

block, four villages were randomly selected, making a total of 16 villages. From each village, 10 farmers were selected as respondents. Thus, the total sample size was 160 respondents. Data were collected through a structured questionnaire to assess the knowledge level of farmers regarding different scientific practices of onion cultivation.
Data were analyzed using mean percentage score (MPS) to rank the perceived Knowledge Level of farmers. Statistical tools were used to interpret the data

Results and Discussion

Table 1: Distribution of respondent on the basis of practice wise knowledge extent of package of practices of onion cultivation.

S. No.	Cultivation practices	Respondents	
		MPS	Rank
1.	Field Preparation	95.31	I
2.	Varieties of onion crop	79.06	IV
3.	Seed Treatments	62.50	X
4.	Season and time of sowing	87.50	II
5.	Seed rate & spacing	80.62	III
6.	Fertilizers application	66.87	IX
7.	Irrigation management	78.75	V
8.	Intercropping and weed management	70.31	VIII
9.	Plant protection measure	59.37	XI
10.	Harvesting and storage	76.56	VI
11.	Marketing	71.87	VII

MPS= Mean percent score

The data in Table 1: indicated that out of 11 selected cultivation practices, the extent of knowledge of Field preparation 95.31 percent and higher it was ranked 1st flowed by Season and time of sowing 87.50 percent, Seed rate and spacing 80.62 percent, were ranked 2nd and 3rd respectively.
Regarding recommended knowledge extent of scientific onion cultivation practices like, Varieties of onion crop 79.06 percent, Irrigation management 76.56 percent, Harvesting and storage 76.56 percent and ranked 4th 5th and 6th, respectively. While the extent knowledge of recommended scientific onion cultivation practices likes, Marketing 71.87 percent, Intercropping and weed management 70.31 percent, Fertilizer application 66.87 percent, and were ranked 7th, 8th and 9th, respectively.
Further, the knowledge extent of package of practices of onion cultivation likes Seed treatment 62.50 percent, Plant protection measures 59.37 percent with 10th and 11th ranked, respectively.

Table 2: Overall knowledge extent of package of practices of onion cultivation. n=160

S. No.	Knowledge level	f	%
1.	Low (below 15)	25	15.63
2.	Medium (16 to 19)	95	59.37
3.	High (20 & above)	40	25.00
	Total	160	100.00

Mean=17.20, S.D.=2.29, Max.=22, Min.12

Conclusion

The study found that most onion farmers (59.37%) had a medium level of knowledge about recommended cultivation practices. Farmers were well-informed about field preparation, sowing time, and seed spacing, but had low awareness regarding seed treatment, fertilizer application, and plant protection. This highlights the need for targeted training and extension activities to improve knowledge in weaker areas, ensuring better productivity and profitability in onion cultivation.

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