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Knowledge of the respondents towards improved gooseberry production practices in Pratapgarh district of Uttar Pradesh

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Abstract

This present study was conducted to determine the knowledge of improved gooseberry production practices among farmers in Pratapgarh District of Uttar Pradesh. By assessing the awareness and implementation of advanced agricultural techniques, the research aims to identify the factors influencing rates and the barriers faced by farmers. Data was collected through pre structured interview schedule with a sample of 120 farmers, focusing on their knowledge of improved Gooseberry production practices. The findings reveal that a medium level of knowledge, primarily due to limited access to resources, lack of training, and financial constraints. The study highlights the need for targeted extension services, better access to credit facilities, and comprehensive training programs to enhance the knowledge of improved gooseberry production practices, ultimately improving yield and income for farmers.

Keywords: Gooseberry production, improved practices, knowledge

Introduction

Horticulture is a growing sector in India, focusing on the art, science, technology, and business of growing plants. It provides nutritious fruits and vegetables, offers visual enjoyments, and promotes recreational activities. India's varied soil and agro-climatic conditions make it an ideal location for growing horticultural crops, contributing to 30% of India's agricultural GDP from 8.5% of cropped area. The horticulture sector encompasses various crops such as fruits, vegetables, potatoes, tubers, ornamental, medicinal, aromatic, spices, and plantation crops. Gooseberries are small, round or oval-shaped fruits native to Europe, North Africa, and parts of Asia. They have a distinct flavor ranging from sour to sweet and acidic, and are often used

in culinary applications. Gooseberry cultivation requires a temperate climate and is found in home gardens and commercial orchards. They prefer well-drained soil and require regular pruning. Gooseberries have gained popularity for their health benefits and versatility, making them a delightful addition to a well-rounded diet. The Pratapgarh district is known for its high production of gooseberries, but traditional practices are insufficient to achieve desired yields Singh *et al.* (2019) ^[9].

Gooseberry trees grow well in sandy loam-clay soil in India. It requires a deep soil. Presence of concrete layer at less than 1 m depth may stop tree growth after 10-12 years. Gooseberry trees can be cultivated in soil from slightly acidic to slightly alkaline or saline (pH 6.0-8.0) in reaction. Grafted or budded plants of Gooseberry are planted at the

distance of 8-10 m in the month of June- July. Planting can be done in February- March also provided weekly irrigation is possible. Pits of 1×1×1 m size are dug at least two months prior to planting date. In each pit 3-4 basket of compost mixed with dug soil is filled in. Grafts are planted in the centre of these pits. Budded or grafted Gooseberry tree start fruiting after 6-8 years of planting whereas seedling trees may take 10-12 years of bearing. The change of seed colour from creamy white to brown black is indicative of fruit maturity and harvesting stage of the fruit. Fruit of Gooseberry cultivars generally mature in November-December.

The technology in production of Gooseberry is influenced by various factors such as education, social participation, occupation, irrigation facility, and knowledge. Socio-economic factors, such as higher disposable incomes, influence the knowledge of improved gooseberry cultivation in Uttar Pradesh. However, most farmers are not using seed treatment due to lack of knowledge, high costs of plant protection measures, and non-availability of bio fungicides. Other challenges faced by farmers include low access to extension services, costly labour, lack of credit facility, and lack of marketing information. The knowledge of horticultural technologies is also influenced by factors such as lack of awareness, research, propagating material, adoptable cultivation packages, limited marketing supports, and infrastructure facilities Prusty *et al.* (2021) ^[7].

Objectives of the study

To assess the socio-economic profile of the respondents.

To determine the knowledge of the respondents towards improved gooseberry production practices.

Research methodology

This study used a descriptive research approach to characterize the features of a population or phenomenon under study. The research was conducted in the Pratapgarh district of Uttar Pradesh state which was selected purposively, with a focus on gooseberry cultivation. The study was conducted through purposive sampling, selecting 1 blocks based on maximum area under gooseberry cultivation. Three villages were selected from each block, and 120 respondents were selected for the present study.

Data collection methods included structured interviews and

surveys, as well as personal interviews and surveys to gather primary data. Secondary data was collected from the District Agriculture Office, various published and unpublished sources, and written documents from individuals, experts, and organizations related to the farming sector.

The study selected independent and dependent variables based on available literature and expert opinions in the field of extension. The dependent variables included age, education, occupation, land holding, annual income, family type, family size, source of information, mass media exposure, scientific orientation, risk orientation, and economic motivation. The dependent variables knowledge. The study aimed to correlate findings with the prevailing conditions in the farming sector.

Table 1: Socio-economic profile of respondents

S. No.	Age	Frequency	Percentage
1.	Young (Below 35 years)	21	17.50
2.	Middle (35 to 55 years)	86	71.67
3.	Old (Above 55 years)	13	10.83
Educational status			
1.	Illiterate	21	17.50
2.	Primary	18	15.00
3.	Junior Higher Secondary	37	30.84
4.	Higher Secondary	19	15.83
5.	Inter School	21	17.50
6.	Graduation & above	4	3.330
Occupation			
1.	Agriculture	75	62.50
2.	Agriculture + Labour	24	20.00
3.	Agriculture + Business	15	12.50
4.	Agriculture + Service	6	5.00
Family size			
1.	Small Size	78	65.00
2.	Medium Size	34	28.33
3.	Large Size	8	6.67
Size of land holding			
1.	Small (<2.5 acres)	26	21.67
2.	Medium (2.5 – 5 acres)	42	35.00
3.	Large (>5 acres)	52	43.33
Annual income			
1.	Around 1 lakh	20	16.66
2.	Between 1-2 lakh	79	65.83
3.	Above 2 lakh	21	17.50
Mass media exposure			
1.	Low (6-10)	14	11.67
2.	Medium (11-14)	89	74.17
3.	High (15-18)	17	14.16
Innovativeness			
1	Low (6-8)	29	24.17
2	Medium (9-11)	61	50.83
3	High (12-14)	30	25.00
Irrigation source			
1.	River	25	20.83
2.	Well / Tube well	12	10.00
3.	Canal	77	64.17
4.	Lake/ Farm Pond	6	5.00
Risk Bearing Capacity			
1.	Low (8-10)	28	23.33
2.	Medium (11-13)	49	40.83
3.	High (14-16)	43	35.84

Results and Discussion

The socio-economic analysis of the respondents reveals a

predominantly middle-aged population with a strong commitment to agriculture. They have medium-sized land holdings, but may not have extensive land for large-scale farming operations. Their agricultural practices may be subsistence-oriented, limiting their economic growth potential. Moderate annual incomes highlight the economic challenges faced by this demographic, as their income may

not cover all financial needs or invest in productivity improvements. The community's reliance on agricultural activities calls for targeted interventions to enhance economic resilience, such as access to better agricultural technologies, training programs, and diversification of income sources.

Table 2: Distribution of respondents according to their knowledge about improved Gooseberry production practices.

N=120

S. No.	Statement	Fully Correct		Partially Correct		Incorrect	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	Familiar with the different varieties of gooseberries and their specific growing requirements.	38	31.67	42	35.00	40	33.33
2.	Understand the importance of selecting disease-resistant gooseberry varieties.	38	31.67	50	41.67	32	26.67
3.	Regularly test soil pH levels before planting gooseberries.	30	25.00	55	45.83	35	29.17
4.	Use organic methods for improving soil fertility for gooseberry plants.	37	30.83	52	43.33	31	25.83
5.	Practice crop rotation to prevent soil depletion and pest build-up in my gooseberry fields.	24	20.00	57	47.50	39	32.50
6.	Know the optimal planting time for gooseberries in my region.	45	37.50	44	36.67	31	25.83
7.	Aware of the best spacing and planting techniques for gooseberry bushes.	43	35.83	52	43.33	25	20.83
8.	Use mulching to conserve soil moisture and control weeds around gooseberry plants.	31	25.83	43	35.83	46	38.33
9.	Prune gooseberry bushes regularly to promote better air circulation and fruit production.	52	43.33	42	35.00	26	21.67
10.	Knowledgeable about the common pests and diseases affecting gooseberries and their control methods.	32	26.67	37	30.83	51	42.50
11.	Use integrated pest management (IPM) practices to manage pests in my gooseberry crops.	33	27.50	52	43.33	35	29.17
12.	Familiar with the recommended irrigation practices for gooseberry plants.	51	42.50	48	40.00	21	17.50
13.	Apply appropriate fertilizers at the right time to enhance gooseberry growth and yield.	36	30.00	44	36.67	40	33.33
14.	Monitor gooseberry plants regularly for signs of nutrient deficiencies.	41	34.17	46	38.33	33	27.50
15.	Know the best harvesting techniques to minimize damage to gooseberry fruits.	48	40.00	42	35.00	30	25.00
16.	Handle and store harvested gooseberries properly to maintain their quality and extend shelf life.	43	35.83	46	38.33	31	25.83
17.	Aware of the latest research and advancements in gooseberry production practices.	37	30.83	47	39.17	36	30.00
18.	Participate in training programs or workshops related to gooseberry farming.	53	44.17	44	36.67	23	19.17

The results reveal that while most respondents are familiar with optimal gooseberry farming practices, there are gaps in knowledge about soil testing, disease-resistant varieties, and pest management. Only a small percentage of respondents conduct regular soil testing, and many are unaware of the benefits of disease-resistant varieties. Additionally, many

farmers are not implementing effective pest management strategies, leading to increased damage and lower yields. Addressing these gaps can improve gooseberry farming's success and sustainability, resulting in higher yields and profits.

Table 3: Overall knowledge level of respondents improved Gooseberry production practices.

(n = 120)

S. No.	Knowledge Level	Frequency	Percentage
1	Low (18-24)	28	23.33
2	Medium (25-30)	61	50.84
3	High (31-36)	31	25.83
	Total	120	100.00

Table 3 depicts that majority of the respondents (50.84%) fell in the medium knowledge level group, where as (25.83%) respondents were observed in the high knowledge level group and remaining (23.33%) respondents formed low knowledge level group. It is hereby concluded that majority of farmers were having medium level of knowledge followed by high and low knowledge level, respectively. Similar findings is also reported by Meena (2005) [5].

The analysis revealed that annual income, risk-bearing capacity, and scientific orientation exhibit the strongest positive correlations with knowledge, indicating that these factors significantly influence an individual's level of understanding. Conversely, variables such as age, marital status, and type of house show no significant correlation, suggesting they may have a lesser impact on knowledge acquisition.

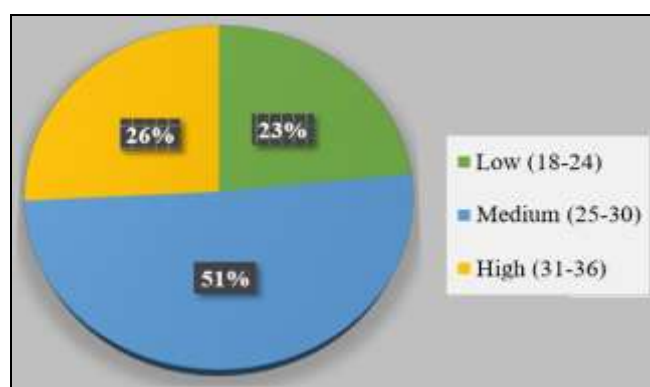


Fig 1: Overall knowledge level of respondents improved Gooseberry production practices

Table 4: Relationship between profile of Gooseberry farmers with their knowledge.

S. No.	Independent variables	Correlation coefficient (r)
		Knowledge
1	Age	0.134NS
2	Marital status	0.122NS
3	Education	0.264*
4	Occupation	0.342*
5	Type of House	0.163NS
6	Size of land holding	0.339*
7	Annual income	0.525**
8	Family type	0.237*
9	Mass media exposure	0.462**
10	Risk bearing capacity	0.528**
11	Progressiveness	0.477**
12	Scientific Orientation	0.523**

* =Significant at 0.05 percent level of probability

** =Significant at 0.01 percent level of probability NS=non-significant

Conclusions

It is concluded that the socio-economic analysis of the respondents a predominantly middle- aged population with a strong commitment to agriculture. Thirty-eight percent of respondents had completed junior high level education, and the majority of respondents (35 to 55 years old) were middle-aged. The majority of respondents—62 percent—only worked in agriculture, while 65 percent had small families, 43.33 percent owned large tracts of land (>5

acres), 65.83 percent earned between Rs. 1 and Rs. 2 lakh annually, 74.17 percent had medium media exposure, 50.83 percent were averagely innovative, 64.17 percent had used canals as a source of irrigation, and 40.83 percent could bear an average amount of risk. The majority of respondents have medium knowledge level (50.84%), followed by high (25.83%) and low (23.33%) knowledge level. Factors such as education, occupation, land holding size, family type, annual income, mass media exposure, risk-bearing capacity, progressiveness, and scientific orientation significantly influence knowledge level. The majority of farmers have a medium level of knowledge, with annual income, risk-bearing capacity, and scientific orientation being the strongest positive correlations.

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