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Production and marketing constraints in the garlic crop

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Abstract
The present study was conducted in the Etawah district of Uttar Pradesh State to identify the constraints in garlic cultivation, production, and marketing as perceived by the garlic growers. Garrett ranking was used. For this study, respondents were selected by using a random sampling method. To derive the inferences of the study, two blocks were selected for the present study. The study covered ten villages & it covered 120 farmers in the selected villages. Data collected for the study about the period 2021-22. Primary data was collected from selected garlic growers through personal interview method with the help of a pretested schedule. The main production constraints noticed were non-availability of Credit, Lack of knowledge about the latest production technology, non-availability of quality water, assistance by the government, and Poor quality land. The main marketing constraints were Price fluctuations, Lack of scientific storage facilities, High cost of transportation, lack of demand for Produce in the local area, Lack of scientific knowledge and training.

Keywords: Production, marketing constraints, garlic crop

Introduction
Garlic (*Allium sativum* Linn) belongs to the family Amaryllidaceae is the second most important bulb crop after onion. Though it is grown throughout the plains of India and consumed by most of the people since time immemorial. The economic yield is obtained from underground develop part known as bulbs. The garlic bulb is a multiple or compound bulb consisting of bulbs or bulblets popularly called as cloves (Patidar *et al.*, 2018) [5]. The cloves are used in flavoring foods, preparing chutneys, pickles, curry powder, tomato ketchup. Garlic is an important spice crop which is not only used as culinary item, it is also to prevent or cure various diseases /disorders in respect of human health. Garlic is one of the most popular spices in the whole world. It is extensively grown in Central Asia and Eastern Region.

Garlic is grown in moderate to cold seasons in India, making it the world's largest producer. This plant is cultivated for both culinary and medicinal purposes. Clove has a distinct pungent, spicy flavour that, when cooked, mellows and sweetens significantly. It boosts the immune system, decreases blood pressure, lowers cholesterol, improves cognitive function, and so on when used medicinally. It is used as a carminative and stomach stimulant in Indian medicine (Ayurvedic, Unani, and Siddha) to aid digestion and absorption of meals. Apart from serving the country's domestic needs, it is also a significant source of foreign exchange (Yewatkar, 2019) [6]. Madhya Pradesh recorded the highest production of garlic across India in financial year 2022, amounting to over two million metric tons. The Indian states of Rajasthan, Uttar Pradesh, and Gujarat followed. The country produced over 3.1 million metric tons of the garlic in 2021. (According to statista).

The acreage and production of garlic in Uttar Pradesh are 34.31 thousand hectares and 227.34 thousand metric tonnes, respectively, with a productivity of 6625 kg/ha (Directorate of Arecanut and Spices Development, 2019) [1]. There are unique researchable aspects of garlic improvement in general, and long day garlic, in particular that pertain to Indian, as well as, world garlic research community. In order to provide for its ever-increasing population and meet export and processing demands by the year 2050, India will have to produce 30 lakh tones of garlic with a higher nutritional content than other bulb crops (raw 1 clove) (Kumud *et al.*, 2019) [4]. Protein (0.57g), phosphorous (13.77mg), potassium (36.09 mg), calcium (16.29 mg), magnesium (2.25mg), and carbs are all abundant in this food (2.98g). Green garlic has a high concentration of ascorbic acid (1%). It also has a key part in the immune system for the modern era and is an important source of human nourishment and medicinal benefits (Diriba and Shiferaw, 2016) [3].

Materials and Methods

The current study is based on an examination of primary data collected in Uttar Pradesh Etawah district. For this investigation, the two blocks were chosen. In the selected communities, the study covered 10 villages and 120 farmers. Data for the study was gathered for the years 2021-22. Primary data was gathered from selected garlic growers using a personal interview method and pre-tested schedules to obtain information on Constraints in the Production and Marketing of Garlic related issues. The obtained data was compiled, collated, and analysed to achieve the study's aims. A schedule was created in accordance with the existing literature in order to analyse the limits. As a result, restrictions were discovered and subdivided into production and marketing constraints, following which the sample farmers' responses were recorded. Simple statistical tools like Garrett's Ranking Technique were used to analyse the data.

Analytical Tools Garrett's Ranking Technique

The ranks given by the respondents were then converted into percentage position with the help of formula given by Garrett. Garrett's formula for converting ranks into percent is:

$$\text{Percent position} = \frac{100(R_{ij} - 0.5)}{N}$$

Where, Rij is the rank given to ith item by the jth individual and N is the number of item ranked by the jth individual. The per cent position of each rank thus obtained was converted into scores using Garrett's table. Then for each reason the scores of individual respondents were added and divided by the total number of respondents. Thus the mean score for each constraint ranked by arranging them in a descending order.

Result and Discussion

1. Production constraints faced by Garlic growers

In the research area, garlic growers confront a variety of production restrictions. Table 1 showed that the most significant Production limitation experienced by most garlic producers was non-availability of Credit, which received a score of 51.40 (rank I). With this in mind, there was a pressing need to improve Garlic producer extension services in the study area. The second most significant barrier faced by garlic growers was government assistance (overall Garrett score 51.11). The other most important constraints reported by the garlic growers were non-availability of HYV seed Garrett score 50.81 (rank III), Lack of knowledge about latest production technology overall Garrett mean score 50.80 with rank IV, and Unfavourable weather conditions overall Garrett score 50.23 with rank V, Lack of adoption of plant protection measures overall Garrett score 50.06 (rank VI). In addition to the above problems, Inadequate knowledge of recommended package and practices (VII), Availability of Input (VIII), Poor quality land (IX), and Non-availability of quality water for irrigation (X) in the study area.

Table 1: Garlic Production Constraints

S. No.	Garlic Production Constraints	Total	Average Score	Final Rank
1	Non-availability of Credit	6127	51.05	1
2	Poor quality land	6007	50.05	5
3	Assistance by Government	6015	50.12	4
4	Non-availability of quality water irrigation	6049	50.40	3
5	Unfavorable weather conditions	5807	48.39	10
6	Inadequate knowledge of recommended package and practices	5955	49.62	7
7	Lack of adoption of plant protection measures	5967	49.72	6
8	Availability of Input	5881	49.00	8
9	Non-availability of HYV seed	5861	48.84	9
10	Lack of knowledge about latest production technology	6091	50.75	2

2. Marketing constraints by Garlic growers

In the research area, garlic growers encounter a variety of marketing challenges. Table 2 showed that price variations were considered the most important constraint among garlic growers, with a mean score of 51.88 (rank I), followed by the lack of scientific storage facilities Garrett score 51.3 (rank II). The garlic growers evaluated the high cost of transportation as the third important restraint, with a mean score of 50.97 (rank III). Garrett received a fourth (50.15) for a lack of demand for produce in the surrounding area. Garlic producers were ranked V with a score of 50.13 due to a lack of scientific understanding and training. In addition to the aforementioned issues, there is a lack of skilled labour for grading (VI), a lack of scientific knowledge and training (VII), and a lack of commission charges (VIII). In the research area, minor issues include a lack of availability of market news (IX) and payment delays (X).

Table 2: Garlic Marketing Constraints

S. No.	Garlic Marketing Constraints	Total	Average Score	Final Rank
1	Lack of scientific storage facilities	6156	51.30	2
2	Lack of demand of produce in local area	6018	50.15	4
3	Problem faced due small quantity of marketable surplus	5937	49.47	7
4	Lack of scientific knowledge and training	6016	50.13	5
5	Price fluctuations	6226	51.88	1
6	Lack of skilled labour for grading	5922	49.35	8
7	Lack of availability about market news	5738	47.81	9
8	High cost of transportation	6117	50.97	3
9	Higher commission charges	5981	49.84	6
10	Delay in payment	5649	47.07	10

Conclusion

The primary frequent production restrictions for garlic growers in the study area are non-availability of credit, lack of information about newest production technology, non-availability of quality water, government assistance, poor quality land, and so on.

Price volatility, lack of scientific storage facilities, high transportation costs, lack of demand for produce in the local area, lack of scientific understanding and training, etc. are all prevalent marketing barriers for garlic growers in the research area.

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