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Constraint analysis in production and marketing of selected flowers in Nagpur district

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Abstract
The Vidarbha region of Maharashtra state was the site of the current study, "Constraint analysis in production and marketing of selected flowers in Nagpur district." A total of sixty flower producers were chosen, with twenty growers of each chosen flower—rose, tuberose, and marigold—being chosen. Utilizing Garrett's ranking technique, the constraints were examined. The primary constraints encountered by the chosen flower farmers throughout production included the Huge investment required, labor shortage, lack of planting materials, pest and disease outbreaks, high costs associated with plant protection chemical and high labour wages etc. Selected flower growers listed the following as their top marketing constraints: Lack of market information, a lack of cold storage facilities, high commission costs, high price variation, quoting cheap pricing etc.

Keywords: Flowers, rose, tuberose, marigold, constraints

1. Introduction
Flower cultivation, often known as floriculture, is quickly being recognized in the business. India cultivates a variety of flowers, including roses, tuberoses, anthuriums, carnations, marigolds, chrysanthemums, asters, gaillardias etc. Indian culture has long placed a great deal of importance on flowers. However, India's floriculture is not as developed as it ought to be. The business is still in its infancy, but it has a lot of promise because soil, climate, labor, transportation, and the market are key determinants of how big a commercial floriculture operation grows. As a result, there is a huge potential for expansion. Floriculture will flourish and generate a great deal of revenue and employment once it is scientifically established on an industrial model. It has been discovered that commercial flower growing has a higher capacity per unit area than other crops, making it a profitable industry. Conventional flower production in India has given way to export flower production. Flowers are farmed, cropped, and grown in both open fields known as farmlands and protected environments like greenhouses and polyhouses.
Just India's floral industry contributes significantly to the GDP of the country. By itself, it will bring in about INR 231.7 billion in 2022, according to statistics by Statista. An estimated 322 thousand hectares of diverse flowers are cultivated in India; in 2020–21, 828 thousand MT of cut flowers and 2152 thousand MT of loose flowers were produced. Over the past ten years, there has been a significant increase in the export of floriculture goods. In 2020–21, India exported 15695.32 MT of floriculture products, bringing in Rs. 57598.45 lacs in foreign exchange.
One of the top states in the nation for flower production is Maharashtra. With a total area of roughly 11.41 thousand ha, Maharashtra's floral industry is primarily concentrated in districts like Pune, Nasik, Sangli, Kolhapur, Thane, Nagpur, Akola, Amravati, and Satara. These districts produce 0.36 thousand MT of cut flowers and 61.69 thousand MT of loose flowers. In 2020–21, Maharashtra state exported 1350.55 MT of floriculture products, bringing in foreign exchange of Rs. 13302.46 lacs.
An attempt was made to investigate the constraints faced by flower growers in the production and marketing of selected flowers in Maharashtra's Nagpur district. Knowing the constraint status of flower growers in production and marketing has proven beneficial in identifying the challenges faced and suggestions to overcome these conditions. This, in turn, would assist relevant stakeholders in developing appropriate policies, giving the floricultural industry a boost.

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2. Materials and Methods
For the current study, a sample was drawn using the multistage sampling technique. In the initial round of selection, three tahsils in the district of Nagpur, namely Kalmeshwar, Hingana, and Nagpur, were chosen on purpose. Two villages were chosen at the second stage, from each of the chosen tahsils. Sixty flower growers made it to the third round of selection to become study respondents.

Using pretested questionnaires for the years 2021–22, primary data was gathered from a selected group of flower growers on variety of problems faced by them for the current study through survey methods.

2.1 Constraints analysis
Using Garrett's ranking technique, the production and marketing constraints of a chosen flower were examined. The following formula was used to convert each respondent's rank into a percent position.

$$\text{Percent position} = 100 \times \frac{\text{Rij} - 0.5}{\text{Nj}}$$

Where,
R_{ij} = Rank given to the ith constraints by j^{th} individual
N_j = Number of constraints ranked by j^{th} individual

Using Garrett's table, the estimated percent position was translated into scores.

Each factor's estimated mean score values were arranged in descending order. The constraint that had the highest mean value was deemed to be the most significant, with the others coming in that order.

3. Results and Discussion
The limitations that the chosen flower growers faced in terms of marketing and production were determined by collecting multiple responses. The views of a chosen group of flower growers were gathered in order to comprehend the issues with marketing and production.

3.1 Production constraints encountered by Rose growers
In the research area, the growers of roses encountered a variety of production-related constraints. It is showed in Table 1.

Table 1: Production constraints of Rose growers

Sr. No.	Production constraints	Garrett's Mean Score	Rank
1	Huge investment required	76.60	I
2	Non-availability of planting material	50.40	VIII
3	Labour shortage	72.55	II
4	Pest and disease incidence	58.45	VI
5	High weed infestation	59.65	IV
6	Non-availability of credit facility in time	59.35	V
7	High prices of plant protection chemicals	46.05	IX
8	Lack of technical guidance	67.50	III
9	High rate of labour wages	55.35	VII
10	Depletion of soil fertility	39.25	X

Table 1 makes it evident that the largest production constraint faced by the majority of rose growers was the high investment required to produce rose crops, with a score of 76.60 (rank I). The labor shortage was the second-biggest constraint that rose growers had to deal with total Garrett score of 72.55. The other major issues raised by the growers of roses were the absence of technical advice regarding the production of roses, which had an overall Garrett score of 67.50 (rank III); a high level of weed infestation, which had an overall Garrett score of 59.65 (rank IV); and the inability to obtain credit facilities in a timely manner, which had an overall Garrett score of 59.35 (rank V). Apart from the aforementioned constraint, farmers also had to deal with minor issues like the pest and disease incidence (VI), high rate of labour wages (VII), non-availability of planting material (VIII), high prices of plant protection chemicals (IX), and depletion of soil fertility (X) in the study area.

3.1.1 Marketing constraints of Rose growers
In the research area, the rose growers encountered a variety of marketing challenges. It is presented in Table 2.

Table 2: Marketing constraints of Rose growers

Sr. No.	Marketing constraints	Garrett's Mean Score	Rank
1	Quoting low prices	54.45	VII
2	High cost of transportation	50.10	VIII
3	Lack of cold storage facility	68.25	II
4	Lack of organized market in locality	56.30	V
5	High price variation	67.05	III
6	High commission charges	48.45	X
7	Market places far away	48.50	IX
8	Delayed cash payments	62.15	IV
9	Improper weighment	55.35	VI
10	Lack of market information	75.55	I

According to the contents of Table 2, the biggest constraint reported by rose growers was the lack of market information about prices, with a mean score of 75.55 (rank I) and with overall Garrett score of 68.25 (rank II) for lack of cold storage facilities. With a mean score of 67.05, high price variation were ranked III, and delayed cash payments were ranked IV with a score of 62.15. The absence of an organized market in the area was the fifth major obstacle cited by the rose growers, with a Garrett score of 56.30 (rank V). Adding to the previously mentioned issues are improper weighing (VI), quoting low prices (VII), high cost of transportation (VIII), the markets places far away (IX) and high commission charges were the growers' minor issues.

3.2 Production constraints encountered by Tuberose growers
In the research area, the growers of tuberoses encountered a variety of production-related constraints. It is showed in Table 3.

Table 3: Production constraints of Tuberose growers

Sr. No.	Production constraints	Garrett's Mean Score	Rank
1	Huge investment required	65.25	II
2	Non-availability of planting material	70.90	I
3	Labour shortage	63.10	III
4	Pest and disease incidence	53.80	VI
5	High weed infestation	48.15	IX
6	Non-availability of credit facility in time	49.65	VIII
7	High prices of plant protection chemicals	58.70	IV
8	Lack of technical guidance	50.65	VII
9	High rate of labour wages	56.30	V
10	Depletion of soil fertility	46.35	X

Table 3 make it evident that the largest production constraint faced by majority of the Tuberose farmers was non-availability of planting material with a score of 70.90 (rank I). The huge investment required was second most important constraint raised by the Tuberose growers (overall Garrett score 65.25). The other major issues reported by the Tuberose growers were lack of labour overall Garrett score 63.10 (rank III), high prices of plant protection chemicals with overall Garrett score 58.70 (rank IV) and high rate of labour wages overall with Garrett score 56.30 (rank V). Apart from the aforementioned constraints, farmer also had to deal with the minor issues like the pest and disease incidence (VI), lack of technical guidance (VII), non-availability of credit facility in time (VIII), high weed infestation (IX), and depletion of soil fertility (X) in the study area.

3.2.1 Marketing constraints of Tuberose growers
In the research area, the tuberose growers encountered a variety of marketing challenges. It is presented in Table 4.

Table 4; Marketing constraints of Tuberose growers

Sr. No.	Marketing constraints	Garrett's Mean Score	Rank
1	Quoting low prices	44.65	X
2	High cost of transportation	58.55	IV
3	Lack of cold storage facility	48.30	VIII
4	Lack of organized market in locality	46.25	IX
5	High price variations	61.95	II
6	High commission charges	64.25	I
7	Market places far away	50.75	VI
8	Delayed cash payments	55.45	V
9	Improper weighment	48.45	VII
10	Lack of market information	61.30	III

According to the contents of Table 4, the biggest constraint raised by tuberose grower in marketing was high commission charges with mean score value of 64.25 (rank I) followed by high price variations with overall Garrett score 61.95 (rank II). Lack of market information about prices was ranked III with mean score value of 61.30 (rank III), high cost of transporation had rank IV with a score of 58.55. The delayed cash payments was the fifth major issue raised by the Tuberose growers with overall Garrett score 55.45 (rank V). Adding to the previously mentioned issues, market places far away (VI), improper weighment (VII), lack of cold storage facility (VIII), the lack of organized market in locality (IX) and quoting low prices (X) were minor issues reported by the tuberose farmers in the study area.

3.3 Production constraints encountered by Marigold growers
In the research area, the growers of marigold encountered a variety of production-related constraints. It is showed in Table 5.

Table 5: Production constraints of Marigold growers

Sr. No.	Production constraints	Garrett's Mean Score	Rank
1	Huge investment required	48.90	IX
2	Non-availability of planting material	54.40	VI
3	Labour shortage	58.60	III
4	Pest and disease incidence	71.50	I
5	High weed infestation	52.60	VIII
6	Non-availability of credit facility in time	57.75	IV
7	High cost of plant protection chemicals	66.65	II
8	Lack of technical guidance	46.55	X
9	High rate of labour wages	54.80	V
10	Depletion of soil fertility	53.05	VII

Table 5 make it evident that the largest production constraint faced by most of the Marigold farmers was high pest and disease incidence in Marigold crop, with a score of 71.50 (rank I). The high cost of plant protection chemicals was the second most important constraint faced by the Marigold growers, with overall Garrett score 66.65 (rank II). The other major issues raised by the Marigold growers were labour shortage which required for various operations with overall Garrett score 58.60 (rank III), non-availability of credit facility in time with overall Garrett score 57.75 (rank IV) and high rate of labour wages with overall Garrett score 54.80 (rank V). Apart from the aforementioned constraints, farmer also had to deal with minor issues like non-availability of planting material (VI), depletion of soil fertility (VII), high weed infestation (VIII), huge investment required (IX) and lack of technical guidance (X) in the study area.

3.3.1 Marketing constraints of Marigold growers
In the research area, the marigold growers encountered a variety of marketing challenges. It is presented in Table 6.

Table 6: Marketing constraints of Marigold growers

Sr. No.	Marketing constraints	Garrett's Mean Score	Rank
1	Quoting low prices	61.90	II
2	High cost of transportation	52.10	VII
3	Lack of cold storage facility	53.55	V
4	Lack of organized market in locality	39.65	X
5	Price variations	52.45	VI
6	High commission Charges	51.65	VIII
7	Market places far away	57.60	IV
8	Delayed cash payments	60.90	III
9	Improper weighment	51.10	IX
10	Lack of market information	66.25	I

According to the contents of Table 6, the biggest constraint faced by marigold grower in marketing was the lack of market information about prices, with mean score value of 66.25 (rank I) followed by quoting low prices with overall Garrett score 61.90 (rank II). With mean score value of 60.90, delayed cash payments was ranked III, market places far away which got rank IV with a score of 57.60. Fifth most important constraint raised by the Marigold growers was lack of cold storage facility with overall Garrett score 53.55 (rank V). Adding to the previously mentioned issues, price variations (VI), high cost of transportation (VII), high commission charges (VIII), the improper weighment (IX) and lack of

organized market in locality (X) were the minor issues raised by flower growers in the study area.

4. Conclusion
The major production constraints encountered by the flower growers were huge investment required (Rank I), lack of labour (Rank II) found in Rose production. In case of Tuberose major production constraints faced by farmers were non-availability of planting material (Rank I), huge investment required (Rank II). In case of Marigold major production constraints faced by farmers were pest and disease incidence (Rank I), high cost of plant protection chemicals (Rank II). Inputs like planting material must be made available timely and at nearby market.

The major marketing constraints encountered by the flower growers were non-availability of market information (Rank I), lack of cold storage facility (Rank II) was found in Rose marketing. In case of Tuberose major marketing constraints faced by farmers were high commission charges (Rank I), high price fluctuation (Rank II). In case of Marigold major marketing constraints faced by farmers were non-availability of market information (Rank I), quoting low prices (Rank II). It implies establishment, strengthening of a co-operative marketing mechanism so that they may purchase inputs for growers and also the sale of flowers, also promote direct marketing and could give farmers more negotiating power, which could increase the producers' share of the rupee spent by consumers.

5. References
1. Amin J, Shah A, Nabi G, Wiquar M, Miss M, Ghani F, *et al*. Marketing channels of different cut flower under different Agro Ecological Zones of Nowsehra and Peshawar. Int J Environ Sci Nat Res. 2018;8(3):84-90.
2. Gauraha AK, Joshi SK, Chandrakar MR. Economics of major flowers in Chhattisgarh plains. J Pharmacognosy Phytochem. 2018;7(3):3301-3302.
3. Harisha B. An economic analysis of Floriculture in India. Int J Acad Res Dev. 2017;2(6):225-231.
4. Kumar R, Singh D, Yadav RN, Singh VK, Kumar M. A study of infrastructural profile and constraints of cut flower growers. Ann Floriculture. 2011;4(2):181-186.
5. Mathivanan B. A study on Rose cultivation and marketing pattern in Hosur Taluk. J Exc Management Sci. 2013;2(12):1-9.
6. Singarwad PS, Perke DS, Tawale JB, Asmotoddin M. Constraints in production and Marketing of flower in Nanded district of Maharashtra. Int J Com Bus Manage. 2009;2(1):43-44, ref.3.
7. Thombre RF, Deshmukh KV, More SS, Chavan RV. Constraints and suggestion analysis in production and marketing of Maize in Marathwada region of Maharashtra. Int J Curr Microbiol App Sci. 2020;9(8):1774.
8. Verma LK, Nag NK, Tomer S. Constraints in the production and marketing of Rose, Marigold and Chrysanthemum of Baghpat district (U.P.). Ind J Pure App Biosci. 2020;8(4):335-342.
9. Vidhya D. Potential of Cut Flower Production in India, Financing Agriculture. A National J Agri Rural Dev. 2006;6:22-24.
10. Wani NI, Dar MA, Nazki IT, Wani MI, Showkat A. A study on the Socio-economic characteristics and the constraints faced by the registered flower growers in the production and marketing of flowers in Srinagar and Budgam districts of Kashmir valley. J Pharmacognosy Phytochem. 2017;6(4):1878-1885.