

An Analytical Study of Production and Marketing Constraints among Marigold and Rose Farmers in Varanasi District, Uttar Pradesh, India

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ABSTRACT

The present study was conducted in the Varanasi district of Uttar Pradesh to identify the constraints in the Production and Marketing of vegetable growers. Multistage purposive sampling technique was used to select district, blocks and villages. Whereas proportionate random sampling technique is applied for selection of farmers. A sample of 200 farmers were selected consisting of 160 marigold growers and 40 rose growers. The primary data were collected through a survey on schedule with the help of personal

interviews. Data acquired for the study covering the years 2024-25. The main production constraints reported by Marigold and rose growers were incidence of insect pests (75.40 Garrett Score), diseases infestation (70.76 Garrett Score), non-availability of quality water for irrigation (66.42 Garrett Score), high cost of inputs, unawareness about Government schemes, etc. Furthermore, the major constraints associated with marketing were found to be price fluctuations and seasonal demand (78.63 Garrett Score), high bargaining power (70.45 Garrett Score), more Transportation cost (61.74 Garrett Score), lack of availability about market information, higher commission charges and delay in payment ranked IX with mean score 22.35.

Keywords Constraints, Garrett ranking, Marigold, Marketing, Production and rose.

INTRODUCTION

Floriculture is one of the profitable and swiftly growing branches of horticulture in terms of rural and semi-rural employment generation, reducing poverty, providing a steady income, ensuring food security and empowering women in developing nations (Kaur *et al.* 2022). Around 145 countries are engaged in floriculture worldwide, with Netherlands, United States, Colombia, and Italy being the key producers and traders, together contributing nearly 43.7% to the global market share (Anumala and Kumar 2021).

India is endowed with rich biodiversity, diverse

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agro-climatic conditions, and a skilled workforce, which together makes it well-suited for the development of floriculture activities (Bobde *et al.* 2023). India ranks 2nd in terms of production after China. The total area of flower plantation is about 296.74 with the production of 2,284.46 MT of loose flower and 946.54 MT of cut flowers in 2023-2024 (Titisari, 2025). Traditional flowers are largely grown by small and marginal farmers throughout the country (Wali *et al.* 2024). The income per unit area from floriculture is significantly higher than that of any other agricultural sector (Kavitha and Deepa 2018). Due to increase in per capita income the demand for flowers is increasing nationally (Tiwari *et al.* 2020).

Marigold (*Tagetes spp.*, family Asteraceae) is native to South and Central America, including Mexico. It is highly popular among growers due to its hardy nature, ease of cultivation, adaptability to a wide range of soils and climatic conditions, elegant flowers, extended blooming period, and excellent shelf life. These qualities make marigold an economically rewarding crop, especially for small and marginal farmers. (Verma *et al.* 2020 and Verma *et al.* 2022).

Rose (*Rosa spp.*, family Rosaceae), is native to China, eulogized as Perfume of God or queen of flower or fairest flower or flower of antiquity. It occupies first position in international trade. In India, it is cultivated commercially for cut flower both for export and domestic markets. Flower without stems and flower petals are used for making garlands, for religious offerings and floral arrangement. About 80% of rose flower are utilized for rose water, 10% for attar, 1-2% for *Pankhuri* and remaining for *gulkand*, *gul-roghan* and *rose sharbat*. Its fruit is rich source of Vitamin c and rose oil is anti-HIV, antibacterial and antioxidant. (Rahul *et al.* 2022 ; Verma *et al.* 2022).

The demand for flower in Varanasi is significantly high due to its strong religious and cultural foundation. The city is recognised as one of the prominent spiritual centres, characterised by a large number of temples and continuous religious activities. In Varanasi, the total area under floriculture cultivation is approximately 169 ha. Among this, marigold occupied the largest share covering about 130 hectares, rose covers about 34 hectares and 5 hectares are

utilized for cultivation of other flower crops with the production of 16250 quintal of marigold and 408000 buds of rose (District Horticulture Officer). Despite the promising potential for flower markets in Varanasi district, the majority of farmers still depend on conventional crops, with only a few engaging in flower cultivation (Mohammad *et al.* 2017). Therefore, it is crucial to look into the expenditure on flower production nature of marketing, information sources and obstacles that flower growers face during production and marketing their flowers.

MATERIALS AND METHODS

The present study pertains to Varanasi district of Uttar Pradesh. Out of 8 blocks of Varanasi district, Arajilina, Chiragaon, Kashi Vidyapeeth and Baragaon blocks were selected on the basis of maximum area brought under cultivation of marigold and rose. A list of the entire villages was obtained from the block headquarters of each selected block and five villages from each block selected purposively. Multistage purposive sampling technique has been followed for the selection of district, blocks and villages. Following proportionate random sampling technique, a sample of 200 farmers were selected consisting of 160 marigold growers and 40 rose growers. The primary data were collected for the year 2024-2025. Primary data were collected through a structured personal interview using a pre-validated questionnaire.

All the identified constraints were sub-divided into production and marketing constraints and after that, the responses of the sampled farmers were systematically recorded. The collected data were tabulated and analyzed using Garrett's Ranking Technique.

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:

$$\text{Percent position} = 100 \cdot (R_{ij} - 0.5) / N_j$$

Where, R_{ij} is the rank given to i^{th} item by the j^{th} individual and N is the number of items ranked by the

j^{th} individual. The percent 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 (Garrett and Woodworth 1969). Thus, the mean score for each constraint was ranked by arranging them in a descending order.

RESULTS AND DISCUSSION

Major production constraints of marigold and rose

Constraints refer to the factors that influence both the production and marketing of rose and marigold crops. The responses and opinions of growers were analyzed using the Garrett ranking technique. The different production as well as marketing problems faced by rose and marigold growers in the study area are presented in Table 1 and Table 2.

Table 1 depicted that the major constraints in production of rose and marigold were incidence of insect pests with Garrett score 75.40 (rank I) followed by disease infestation, scoring 70.76 (rank II), non-availability of quality water for irrigation, scoring 66.42 (rank III), high cost of inputs, scoring 59.36 (rank IV), unawareness about govt. schemes & incentives, scoring 51.35 (rank V), Lack of knowledge about latest production technology, scoring 47.67 (rank VI), non-availability of credit, scoring 43.67 (rank VII), non-availability of skilled labor, scoring 32.82

Table 1. Major production constraints of marigold and rose.

Sl. No.	Particulars	Garrett Score	Rank
1	Non-availability of quality water for irrigation	66.42	III
2	Unawareness about Government schemes	51.35	V
3	Diseases infestation	70.76	II
4	Unfavorable weather conditions	28.24	IX
5	High cost of inputs	59.36	IV
6	Incidence of insect pests	75.40	I
7	Non-availability of skilled labor	32.82	VIII
8	Non-availability of Credit	43.67	VII
9	Poor quality soil	22.29	X
10	Lack of knowledge about latest production technology	47.67	VI

Table 2. Major marketing constraints of marigold and rose.

Sl. No.	Particulars	Garrett Score	Rank
1	Higher commission charges	50.28	V
2	More Transportation cost	61.74	III
3	Price fluctuations and seasonal demand	78.63	I
4	Poor management after harvesting	38.01	VII
5	High bargaining power	70.45	II
6	Delay in payment	22.35	IX
7	Lack of availability about market information	56.21	IV
8	Lack of technical knowledge about preparation of value-added products	44.94	VI
9.	Lack of knowledge about the potential consumer	29.36	VIII

(rank VIII), unfavorable weather conditions 28.24 (rank IX), poor quality soil, scoring 22.29 (rank X).

The overall results showed that one of the main risks in production of rose and marigold was the incidence of insect pests. which were reported as caused by insect pests namely aphids, mites and thrip. These pests are managed through the use of pesticides at their highest allowed dosage, which is more expensive. The expenses associated with pest management significantly contribute to rising operational costs, thereby increasing cost of management.

Another major problem of rose and marigold was the disease infestation. where powdery mildew and die-back are the common diseases of rose and damping off, leaf spot and collar rot are the common disease of marigold occurs in study area. The impact of diseases can be reduced by application of fungicides that costs more. Management of cost to control disease infestation was one of the main factors that increases the expenses of cultivation. Non-availability of quality water for irrigation at the time of irrigation was also the main problem of grower that reduce the production of rose and marigold in the field. Generally, tubewell, pump sets are the primary source of irrigation that cost much more specially to marginal farmers. So, these farmers often depend on other farmers for irrigation facilities because they do not possess their own tubewell or pump sets. During the

peak irrigation period, when the demand for water is high, they often face difficulties in accessing water at the required time.

High cost of inputs in rose and marigold production, such as plant seedlings, fertilizers, plant protection chemicals, irrigation and labor, significantly increases the overall cost of cultivation and reduces the net income of farmers and lower their profitability. Many farmers remain unaware of various Government schemes due to limited access to information, inadequate extension services, and low levels of education. Because of this, they are unable to benefit from financial aid, subsidies, and support programs. Farmers have lack of knowledge about the latest production technologies due to inadequate training, limited extension services, and poor access to reliable information sources. Apart from the above mentioned production constraints, there are some minor factors which diversely affected the production of rose and marigold like non-availability of skilled labor, non-availability of credit, unfavorable weather conditions and poor quality soil.

Major marketing constraints of marigold and rose

Several factors affecting the marketing of rose and marigold are presented in Table 2. The table shows that Price fluctuations and seasonal demand with the Garrett score 78.63 (rank I) followed by high bargaining power with Garrett score 70.45 (rank II), more transportation cost, scoring 61.74 (rank III), lack of availability about market information, scoring 56.21 (rank IV), higher commission charges, scoring 50.28 (rank V), lack of technical knowledge about preparation of value-added products, scoring 44.94 (rank VI), Poor management after harvesting, scoring 38.01 (rank VII), lack of knowledge about the potential consumer, scoring 29.36 (rank VIII), delay in payment, scoring 22.35 (rank IX).

Price fluctuations and change in seasonal demand was the major problem arises in marketing of rose and marigold. The market price of rose and marigold flowers changes every day because it mainly depends on supply and demand. When the supply of flowers is constant and demand is low, the price goes down. On the other hands when the demand for flowers is

high while the supply remains constant, prices tend to increase. Rose and marigold flowers are commonly used during festivals, religious events and ceremonies. Therefore, during festival seasons, the demand for these flowers rises significantly, leading to a big increase in their market price. However, during the off-season or when there are no festivals, demand falls and the prices of these flowers decline. This frequent change in demand causes daily shifts in the market price of roses and marigolds in the study area. The second most important problem in marketing of rose and marigold was the high bargaining power of consumer. Due to the highly perishable nature of flowers, buyers and sellers typically have more negotiating power in the flower market. The inability of marginal farmers to store flowers for long periods of time is typically due to their limited financial resources and inadequate post-harvest infrastructure. They are therefore forced to sell their produce as soon as it is harvested. Producers have little control over pricing decisions because flowers have a short shelf life and it is urgent to prevent spoiling. This gives buyers more leverage in negotiating prices, which frequently results in lower returns for producers. Because flowers are perishable, traders and customers have much more negotiating power over producers in the market.

Another problem was the high cost of transportation, because there are only few flower mandis available in Varanasi. Due to the lack of nearby marketing facilities, farmers are often required to travel long distances to sell their produce. This increases transportation cost and reduces the net profit of farmers. Small and marginal farmers suffer the most because they produce less and cannot afford effective transportation. Lack of availability about market information was another problem suggesting limited access to real-time market information, prices and demand for the rose and marigold.

Higher commission charges, lack of technical knowledge about the preparation of value-added products, poor post-harvest management, lack of knowledge about potential consumers, and delay in payment were also identified as important constraints in the marketing of rose and marigold in the study area. Despite receiving relatively lower Garrett scores and being ranked lower than other significant con-

straints, these issues still significantly affect farmers income and collectively influence the efficiency of the marketing system. To mitigate these constraints farmers should form cooperative marketing society to stabilize the price and reduce the cost.

CONCLUSION

The above discussion clearly highlights the major common constraints in production of marigold and rose are incidence of insect pests, diseases infestation, non-availability of quality water for irrigation, high cost of inputs and unawareness about Government schemes. Whereas price fluctuations and seasonal demand, high bargaining power and high Transportation cost are the major constraints arises in marketing of marigold and rose in the study area.

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