P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 10; October 2025; Page No. 535-538

Received: 05-07-2025
Accepted: 07-08-2025

Indexed Journal
Peer Reviewed Journal

Constraints in production and marketing of major vegetables in Davangere district of Karnataka

[1]Chethana TB, [2]S Raveesha, [3]Kiran Kumar R Patil, [4]S Sahana and [5]D Ravikumar

[1]PG Scholar, Department of Agricultural Economics, KSNUAHS, College of Agriculture, School of Post Graduation Studies, Main Campus, Iruvakki, Shivamogga, Karnataka, India

[2]Associate Professor and Head, Department of Agricultural Economics, KSNUAHS, College of Agricultural Sciences, Iruvakki, Shivmogga, Karnataka, India

[3]Assistant Professor, Department of Agricultural Economics, KSNUAHS, College of Agricultural Sciences, Iruvakki, Shivamogga, Karnataka, India

[4] Professor and Head, Department of Agricultural Extension Education, KSNUAHS, College of Agricultural sciences, Iruvakki, Shivamogga, Karnataka, India

[5]Scientist, Department of Soil Science, ICAR-KVK, Chitradurga, Babbur farm, Hiriyur, Karnataka, India

DOI: https://www.doi.org/10.33545/26180723.2025.v8.i10h.2578

Corresponding Author: S Raveesha

Abstract

The present study was conducted to identify and analyze the major constraints faced by vegetable growers in the production and marketing of vegetables in the Davangere district of Karnataka. A multistage sampling technique was employed to select 120 vegetable growers cultivating Tomato, Chilli and Cabbage from four villages Suruhonne and Madanabhavi in Nyamthi taluk, and Bharamasamudra and Bidarakere in Jagaluru taluk. Primary data were collected through personal interviews using a pre-tested schedule. Garrett's Ranking Technique was used to prioritize the constraints as perceived by the farmers. Thse results revealed that among production constraints, the high incidence of pests and diseases (mean score 74.10) was the most severe, followed by the high cost of quality seeds (72.05) and labour scarcity during peak operations (64.60). Inadequate irrigation, untimely availability of inputs and limited access to crop-specific extension services were also found to be important hindrances to productivity. On the marketing front, price volatility (75.16) was ranked as the most critical constraint, followed by exploitation by middlemen (72.05) and lack of storage and cold chain facilities (61.94). Other significant issues included poor access to distant markets, high transportation costs and absence of Farmer Producer Organizations (FPOs). The study emphasizes the need for strengthening integrated pest and disease management, ensuring affordable input availability, improving rural storage and cold chain infrastructure, and promoting collective marketing through FPOs to enhance profitability and sustainability in vegetable farming.

Keywords: Vegetable cultivation, production constraints, marketing constraints, Garrett's ranking technique, Davangere district, farmer producer organizations (FPOS)

1. Introduction

Vegetable cultivation plays a vital role in strengthening India's agricultural economy by contributing to income generation, employment creation, and nutritional security. India ranks second globally in vegetable production, next only to China, owing to its diverse agro-climatic conditions that support year-round cultivation of a wide variety of vegetables. Karnataka is one of the leading states in vegetable production, with Davangere district emerging as a significant hub due to its favourable soil conditions, irrigation availability, and growing market demand. Vegetables such as tomato, chilli, and cabbage occupy a major share of the cultivated area in the district. However, the sector remains vulnerable to various challenges arising from its perishable nature, high input requirements, and dependence on timely management and marketing efficiency.

Despite its importance, vegetable cultivation in the region faces several constraints that limit productivity and profitability. Farmers encounter multiple production-related problems, such as pest and disease incidence, scarcity of quality seeds, shortage of labour, and inadequate irrigation facilities. Likewise, marketing constraints, including price volatility, exploitation by intermediaries, lack of storage and cold chain facilities, and poor access to distant markets, pose serious challenges to achieving stable incomes. Addressing these issues requires identifying and prioritizing the key constraints that hinder effective production and marketing.

1.1 Objective of the Study

To study the constraints faced by vegetable growers in the production and marketing of vegetables.

2. Methodology

The study employed a multistage sampling technique to select sample respondents. Initially, Davangere district in Karnataka was purposively chosen due to its extensive area under vegetable cultivation within the University's jurisdiction. Subsequently, two taluks, Nyamthi and Jagaluru, were selected from Davangere district based on their significance in vegetable cultivation. Within each taluk, two villages were chosen using the same criterion: Suruhonne and Madanabhavi from Nyamthi taluk and Bharamasamudra and Bidarakere from Jagaluru taluk. The vegetables with the largest cultivation areas in the study regions, namely Tomato, Chilli and Cabbage, were selected. Consequently, in the fourth stage, farmers cultivating these crops were randomly selected from the chosen villages. A sample of 40 farmers, each cultivating Tomato, Chilli and Cabbage, was selected from the study region, resulting in a total sample size of 120. Data were collected from the selected vegetable growers through intensive farm-level visits and personal interviews, utilizing a well-structured interview schedule.

2.1 Constraints Analysis: Garrett's Ranking Technique

To identify and prioritize the constraints faced by farmers in the production and marketing of vegetables, Garrett's Ranking Technique was employed. A similar tool was employed in the earlier study conducted by Kumar *et al*. (2021) [3] and Choudhary (2022) [2]. Farmers were asked to rank the major constraints according to their severity. The ranks given by the respondents were then converted into per centage position using the following formula:

$$\text{Percent Position} = ((Rij - 0.5) / Nj) \times 100$$

Where,
Rij = Rank given for the ith constraint by the jth respondent
Nj = Number of constraints ranked by the jth respondent

The per cent positions thus obtained were converted into Garrett scores by referring to Garrett's table. For each constraint, the average score was calculated by dividing the total score by the number of respondents. The constraints were then arranged in descending order of mean scores to identify the most severe constraints in the production and marketing of vegetables in the study region.

3. Results and Discussion

3.1 Production constraints faced by the sample respondents

The analysis of production-related constraints indicated that vegetable growers in the study area encountered multiple challenges that directly affected crop performance and profitability. The high incidence of pests and diseases was ranked first with a mean score of 74.10, signifying that pest infestations and disease outbreak was the most severe threat in vegetable cultivation. The most commonly observed pests in the case of Tomato was fruit borer, white fly, aphids, thrips, etc., in the case of Chilli, it was mites, thrips, aphids, etc., while in the case of Cabbage it was diamond back moth, aphids, Cabbage butterfly, thrips, etc. The most commonly observed diseases were early blight, late blight, Fusarium wilt, bacterial wilt and Tomato leaf curl virus in Tomato; anthracnose/fruit rot, powdery mildew, wilt and leaf curl virus in Chilli; and black rot, downy mildew, Alternaria leaf spot, club root and damping-off in Cabbage. The incidence of pests and diseases have resulted in decreased yield, increased expenditure on plant protection chemicals and corresponding decrease in profit. Similar findings were reported by Kumar *et. al.* (2015) [4], who observed that pest pressure significantly reduced vegetable yields and increases production costs. The expensive quality seeds (72.05) was identified as the second most pressing problem in case of vegetables. The cost per 10 gm packet of seeds of different companies varied from Rs. 1320 to 2100 in case of Tomato, while it was Rs. 550 to Rs. 1500 in case of Chilli and in case of Cabbage it ranged between Rs. 240 to Rs. 500. From every 10 gm packet, close to 40 trays of Tomato, 18 trays of Chilli and 20 trays of Cabbage was prepared. Reddy *et. al.* (2019) [6] also noted that the rising prices of quality seeds limit their accessibility for smallholders, despite their yield potential. Another major issue was labour scarcity during peak operations (64.60), which hampered performance of critical farm activities such as transplanting, weeding, and harvesting. The economic scarcity of labour was reflected in the increased cost of cultivation of the crop. Human labour cornered 22.64 per cent of the total cost in the case of Tomato, 29.51 per cent of Chilli and 21.03 per cent of Cabbage, reiterating the fact that human labour has not only become physically scarce but also economically scarce. Similar labour-related challenges in vegetable cultivation were highlighted by Lokapur and Kulkarni (2014) [5] in Belgaum district. Further, inadequate irrigation facilities (53.60) revealed farmers' vulnerability to climatic variability. The farmers in the study region relied on groundwater through borewell irrigation. Farmers due to weather vagaries and climate change, are facing the problem of initial and premature failures of borewells adding to the capital investment. This result was consistent with the observations of Chand (2012) [1], who emphasized that the absence of reliable irrigation is a major factor restricting productivity growth in Indian agriculture.

The problem of untimely availability of agricultural inputs (49.75) also emerged as a concern, affecting farmers' ability to implement timely crop management practices. Constraints such as limited access to crop-specific extension services (47.00) and insufficient knowledge of improved practices (47.35) indicated deficiencies in awareness and adoption of modern farming techniques, which could otherwise enhance productivity. Singh and Singh (2014) [7] similarly noted that the lack of proper extension services often restricts farmers from adopting improved cultivation technologies. Poor soil health and lack of adequate soil testing (42.00) were considered moderate constraints, reflecting the need for soil fertility management through soil testing and balanced fertilizer use. Comparatively, damage from stray animals (22.70) and limited access to institutional finance (22.35) were found to be relatively least constraint but still noteworthy, as they affect farm security and capital availability.

3.2 Marketing Constraints Faced by Sample Respondents

The findings on marketing constraints highlighted that price volatility of vegetables was the most critical challenge, with the highest mean score of 75.16, showing that farmers face significant uncertainty in realizing stable incomes due to frequent fluctuations in vegetable prices. Similar

observations were made by Reddy *et. al.* (2019) [6], who reported that vegetable growers in Karnataka suffer from high market risks due to daily price instability. The second major issue was the exploitation by middlemen (72.05), indicating the dominance of intermediaries in price determination and their role in reducing farmers' share in the consumer rupee. Kumar *et. al.*, also emphasized that the presence of too many intermediaries in vegetable marketing often leaves farmers with low margins despite high consumer prices.

The lack of storage and cold chain facilities (61.94) emerged as the third major constraint, leading to high post-harvest losses and compelling farmers to sell at lower prices. Singh and Singh (2014) [7] pointed out that inadequate storage infrastructure is one of the main reasons for distress sales in perishable commodities like vegetables. Limited access to distant or high-value markets (53.78) and transportation issues (46.78) further added to marketing inefficiencies, as high logistics costs eroded profitability. Similar findings were reported by Lokapur and Kulkarni (2014) [5] in their study on vegetable growers in Belgaum, where high transport costs limited farmers' access to urban markets.

The absence of Farmer Producer Organizations (42.00) was another constraint, as collective marketing through FPOs could otherwise enhance bargaining power and improve market linkages. Chand (2012) [1] highlighted that farmer collectives play a key role in reducing transaction costs and improve farmers' market participation. Farmers also reported problems such as lack of real-time market information (38.68), which restricts informed decision-making, and the perishable nature of vegetables (37.10), which often leads to distress sales at unremunerative prices. Finally, the lack of minimum support price (22.15) was considered as the least pressing, but the absence of assured price mechanisms still exposes vegetable growers to greater risk compared to staple crops like rice and wheat.

Table 1: Constraints faced by the sample respondents in production of vegetables (n=120)

Constraints	Mean score	Rank
Production		
Incidence of pests and diseases	74.10	I
High expensive nature of quality seeds	72.05	II
Labour scarcity during peak operation period	64.60	III
Huge dependence on rainfall and lack of assured irrigation	53.60	IV
Lack of timely availability of inputs	49.75	V
Limited access to crop-specific extension services	47.00	VI
Inadequate knowledge of improved cultivation practices	47.35	VII
Poor soil health and inadequate soil testing practices	42.00	VIII
Damage due to stray animals and unprotected fields	22.70	IX
Lack of access to institutional finance	22.35	X

Table 2: Constraints faced by sample respondents on marketing fronts (n=120)

Constraints	Mean score	Rank
Price volatility for vegetables	75.16	I
Exploitation by middlemen	72.05	II
Lack of storage and cold chain facilities	61.94	III
Poor access to distant or high-value markets	53.78	IV
Transportation issues and high cost of logistics	46.78	V
Absence of Farmer Producer Organizations (FPOs)	42.00	VI
Lack of real-time market information	38.68	VII
Perishability leading to distress sales	37.10	VIII
Lack of minimum support price (MSP)	22.15	IX

4. Conclusion

The study clearly revealed that vegetable growers in Davangere district face a multitude of interrelated constraints in both production and marketing, which collectively limit their productivity, profitability, and sustainability. On the production front, the most critical constraint was the high incidence of pests and diseases, followed by the high cost of quality seeds and acute labour scarcity during peak periods. These challenges substantially increased the cost of cultivation and reduced net returns. Inadequate irrigation facilities, untimely availability of inputs, and insufficient access to crop-specific extension services further constrained farmers' ability to adopt improved technologies and practices. The findings highlight the need for strengthening pest and disease management through integrated pest management (IPM), ensuring timely input supply, and promoting the use of quality but affordable seeds.

On the marketing side, price volatility emerged as the most severe constraint, exposing farmers to severe income instability. The dominance of middlemen, coupled with inadequate storage and cold chain facilities, limited access to distant markets, and high transportation costs, further reduced farmers' share in the consumer price. The absence of organized marketing systems such as Farmer Producer Organizations (FPOs) and lack of real-time market information added to their vulnerability. Addressing these marketing bottlenecks requires the establishment of efficient value chain linkages, development of rural storage and cold chain infrastructure, promotion of FPOs for collective marketing, and dissemination of timely market intelligence.

Overall, the study emphasizes the importance of integrated

policy and institutional support aimed at reducing production and marketing risks, improving infrastructure, and enhancing farmers' bargaining power. Encouraging coordinated efforts among research institutions, extension agencies, and government departments can significantly improve the livelihood security of vegetable growers and strengthen the vegetable sector in the region.

References

1. Chand R. Development policies and agricultural growth in India: understanding the regional variation. Indian Journal of Agricultural Economics. 2012;67(1):1-23.
2. Choudhary R, Jain S, Shekhawat PS. Constraints in production and marketing of vegetables under polyhouse and normal field conditions in Jaipur district of Rajasthan state. The Pharma Innovation Journal. 2022;11(2):798-802.
3. Kumar A, Sumit, Yadav KM, Rohila KA. Constraints faced by the farmers in production and marketing of vegetables in Haryana. Indian Journal of Agricultural Sciences. 2021;89(1):153-160.
4. Kumar R, Goli D, Reddy BM, Singh DB. Post-harvest losses in vegetables in Karnataka: extent and strategies for reduction. Indian Journal of Agricultural Economics. 2015;70(3):302-310.
5. Lokapur S, Kulkarni GN. Economics of production of vegetables in Belgaum district in Karnataka. International Research Journal of Agricultural Economics and Statistics. 2014;5(2):139-142.
6. Reddy AA, Reddy DR, Naik G. Price volatility and marketing of vegetables in Karnataka: implications for smallholders. Agricultural Economics Research Review. 2019;32(1):77-86.
7. Singh KM, Singh RKP. Constraints in adoption of modern agricultural technologies by vegetable growers in Bihar. Indian Journal of Extension Education. 2014;50(3-4):110-114.