

Assessment of Constraints of Sugarcane Production and Marketing in Lakhimpur District of Uttar Pradesh

Sumit Kumar¹, Dr. A. N. Shukla², Dr. Jitendra Singh³, Puja Sinha⁴,
Dr. Rajeev Singh⁵

^{1,4}Department of Agricultural Economics & Statistics, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh (208002)

^{2,3}Assistant Professor, Department of Agricultural Economics, Bramha Nand Post Graduate College, Rath Hamirpur, Uttar Pradesh (210431)

⁵Teaching Associate Department of Agricultural Economics & Statistics, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh (208002)

Abstract

The present study was conducted in Lakhimpur district of Uttar Pradesh to identify and analyze the major constraints faced by sugarcane growers in production and marketing. The primary data were collected from 200 farmers using a pre-tested interview schedule. Garrett's Ranking Technique was used to prioritize the constraints. The results revealed that the major production constraints were the problem of wild animals, late payment to farmers, and high infestation of weeds, pests, and diseases. The most critical marketing constraints were weightment disputes, large number of intermediaries, and transpiration losses. These findings highlight the need for improved institutional mechanisms for timely payment, pest management, market regulation, and infrastructural development to enhance sugarcane productivity and farmers' income in Lakhimpur district.

Keywords: Constraints, Sugarcane, Garrett Ranking, Production, Marketin

1. INTRODUCTION

Sugarcane (*Saccharum officinarum* L.) is one of the most important commercial crops in India and plays a vital role in the country's agricultural economy. India is the second-largest producer of sugarcane in the world after Brazil, contributing around 20% of the global sugar production. In India, it is grown over an area of 5.17 million hectares with total production of about 439.43 million tonnes and productivity 84.91 ton/ha. (Directorate of Economics and Statistics, Department of Agriculture and Cooperation). Uttar Pradesh(224.25 million tonne) is the largest production under sugarcane production in the country fallowed by Maharashtra(123.97 million tonne), Karnataka(59.35 million tonne), Tamilnadu(14.41 million tonne) and Gujarat(13.36 million tonne) these five state share the most important sugarcane producing states. The crop serves as a raw material for sugar, jaggery, ethanol, and various by-products, thus significantly influencing the rural economy and employment. In U.P 125 Mills in operating condition and crushed about 1098.82 lakh tonnes sugarcane till 2022-23 and sugar production is around

104.82 lakh tonnes. The sugar recovery from sugarcane in 2022-23 was 9.54 -11.50 percent. (Source- Department of cane and sugar industries, 2022-23). In Lakhimpur kheri district, sugarcane is grown in 300345 hectare with a production 20476624 tonnes while productivity 856.44 quintal/ha. (Statistic Bulletin, District Lakhimpur Kheri, 2023). Despite its economic significance, sugarcane cultivation factors adversely affect far on faces several production and marketing constraints such as pest infestation, late payments, and poor market infrastructure. These mers' profitability and sustainability. Hence, the present study was undertaken to identify the major constraints in sugarcane production and marketing in Lakhimpur district using Garrett's Ranking Technique.

2. Materials and Methods

The study was conducted in district Lakhimpur Kheri of U.P. was selected purposively as were the major producer of sugarcane. Out of fifteen, two blocks namely Mitauli and Kumbhi were selected purposively on the basis of highest area under the sugarcane crop production. Two villages from each block were selected randomly. A total of 200 sugarcane farmers were selected randomly from the village. The data were collected using a structured interview schedule. The primary market for sugarcane at village level and secondary market for sugarcane at block and district level in Lakhimpur Kheri district was selected. Market was purposively selected for the present study of marketing cost, The different processing unit of sugarcane existing in the study area, two small processing units and one processing unit was selected for the study of different processing of sugarcane products and by-products marketing margins and price spread in the marketing of sugarcane.

2.1 Garrett's Ranking Technique

To identify and prioritize the constraints, Garrett's Ranking Technique was applied. Respondents were asked to rank the listed constraints based on severity. The ranks were converted into percent positions and then into Garrett scores using a conversion table. The mean scores were calculated and arranged in descending order to determine the most critical constraints.

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

Where:

R_{ij} = Rank assigned to the i^{th} factor by the j^{th} respondent

N_j = Total number of factors ranked by the j^{th} respondent

The percentage positions thus calculated were subsequently transformed into Garrett scores with the help of a standard Garrett Ranking conversion table. The scores assigned by all respondents were then aggregated, and their average values were computed. Finally, these mean scores were organized in descending order to determine the most significant constraints faced by the farmers.

3. Results and Discussion

3.1 Constraints in Sugarcane Production

The data presented in Table 1. highlights the major constraints encountered by farmers in sugarcane production in Lakhimpur district. Among the various problems reported, the issue of wild and stray animals emerged as the most serious constraint with the highest Garrett score of 74.16. The menace of wild animals such as blue bulls, wild boars, and stray cattle has become a persistent challenge for farmers, causing severe crop damage and significant yield losses. This problem not only increases the cost of cultivation through additional fencing and guarding efforts but also discourages farmers from expanding sugarcane cultivation in open areas. The second most critical problem was the late payment to

farmers, which obtained a Garrett score of 72.97. Delayed payment from sugar mills after cane delivery creates a serious liquidity crisis for farmers, restricting their ability to reinvest in inputs for the next cropping season. Such delays in cane dues have long been a concern in the sugarcane sector of Uttar Pradesh and are a major factor reducing farmers’ confidence in the crop. The third most important constraint, with a Garrett score of 58.95, was the high infestation of weeds, pests, and diseases, which substantially affects both yield and quality. Farmers reported frequent attacks of borers, aphids, and fungal diseases, while inadequate knowledge and high cost of pesticides made it difficult to manage infestations effectively.

Labour-related problems were also found to be prominent. The lack of labour availability, ranked fourth with a Garrett score of 52.13, reflects the growing challenge of labour scarcity during peak agricultural operations, especially harvesting. In addition, high labour charges during harvesting (Garrett score 50.76) further added to the production cost burden. Similarly, the high cost of fertilizers and plant protection chemicals, which ranked fifth with a score of 51.34, increased the cost of cultivation and lowered the overall profitability of the crop. Other production-related constraints, though relatively less severe, also affected sugarcane farming. Natural calamities such as erratic rainfall, floods, and droughts (score 38.08) disrupted the growth cycle and reduced yield stability. The non-availability of inputs at the proper time (score 38.07) and non-availability of quality seeds (score 34.67) created delays in planting and affected crop vigor. The lack of irrigation facilities, ranked last with a Garrett score of 26.87, indicated that many farmers still depend heavily on rainfall or irregular canal water supply, which limits productivity during dry spells. It is evident that production of sugarcane in Lakhimpur district is primarily constrained by the menace of wild animals, delayed payments from sugar mills, and pest and weed infestations. In addition, the rising cost of inputs and labour shortages further aggravate the situation. Addressing these problems through institutional and infrastructural interventions is essential to ensure the sustainability of sugarcane cultivation in the district.

Table 1. Constraints in sugarcane production

S.N.	Particulars	Garrett Score	Rank
1	Problem of wild animals	74.16	I
2	Late payment to farmers	72.97	II
3	High infestation of weeds, pests, and diseases	58.95	III
4	Lack of labour availability	52.13	IV
5	High cost of fertilizers and plant protection chemicals	51.34	V
6	High labour charges during harvesting	50.76	VI
7	Natural calamities	38.08	VII
8	Non-availability of inputs at proper time	38.07	VIII
9	Non-availability of quality seeds	34.67	IX
10	Lack of irrigation	26.87	X

3.2 Constraints in Sugarcane Marketing

Table 2, focuses on the marketing constraints faced by sugarcane growers in the study area. The most severe marketing constraint identified was weighment disputes, with a Garrett score of 74.48. Farmers frequently expressed dissatisfaction with the accuracy and transparency of weighing systems used at

sugar mills, as discrepancies between the actual and recorded weight often led to unfair deductions and financial losses. This issue has created a sense of mistrust between farmers and mill authorities. The next most important problem was the large number of intermediaries involved in the marketing chain, which ranked second with a score of 67.76. The presence of multiple middlemen reduces the farmer’s share in the consumer price, as intermediaries capture a significant portion of the profit margin.

Transpiration losses, ranked third with a Garrett score of 60.28, also represented a major concern, as harvested cane often remains in the field or during transport for long periods before reaching the mill, leading to weight reduction and deterioration in sugar recovery. Low price in the local market (58.44) was another important constraint, as farmers selling cane locally instead of through organized channels often received much lower prices due to oversupply and lack of market regulation. High transportation charges (52.70) and high loading and unloading costs (51.41) further reduced farmers’ net returns, especially for those residing far from the sugar mills. Poor road connectivity, with a Garrett score of 49.93, was also identified as a marketing constraint, as inadequate transport infrastructure delayed the movement of harvested cane, increasing losses and lowering the efficiency of marketing operations. Taken together, these findings clearly indicate that sugarcane marketing in Lakhimpur district suffers from structural inefficiencies and institutional shortcomings. The combination of weighment disputes, excessive intermediaries, and high transportation

Table 2. Constraints faced by sugarcane farmers in marketing

S.N.	Particulars	Garrett Score	Rank
1	Weighment disputes	74.48	I
2	Large number of intermediaries	67.76	II
3	Transpiration losses	60.28	III
4	Low price in local market	58.44	IV
5	High transportation charges	52.70	V
6	High loading and unloading charges	51.41	VI
7	Poor road connectivity	49.93	VII

costs has led to reduced profitability for farmers and weakened the overall market system. Weighment disputes and a large number of intermediaries were the most critical marketing constraints, followed by losses during transportation and low market prices.

4. Suggestions to Overcome Constraints

1. Establish community fencing and promote collective measures to prevent damage by wild animals.
2. Ensure timely payment through strict enforcement of sugar mill payment schedules.
3. Promote integrated pest and weed management to reduce infestation.
4. Develop custom hiring centers and mechanization schemes to address labour shortages.
5. Encourage use of improved and quality seed varieties.
6. Strengthen cooperative marketing channels to reduce intermediaries.
7. Improve rural infrastructure, including road and transport facilities.
8. Introduce digital weighment systems at mills to eliminate disputes.

5. Conclusion

the study reveals that sugarcane cultivation in Lakhimpur district is severely affected by both production and marketing constraints. Production is mainly hindered by wild animal attacks, delayed payments, and

pest infestations, while marketing is constrained by unfair weighing practices, the dominance of middlemen, and high transportation and handling costs. These findings suggest that an integrated approach is required to address both sets of challenges. Effective measures such as timely payment enforcement, improved pest management, mechanization to reduce labour dependency, transparent digital weightment systems, and better road connectivity would significantly improve the profitability and sustainability of sugarcane farming in the district..

References

1. Agarwal ,Disha., Chahal, P. K., Ghanghas, B. S. and Shubham(2024). Analysis of Constraints Faced by Sugarcane Growers in Haryana, India. *Asian Journal of Agricultural Extension, Economics & Sociology*, 42 (5),443-448.
2. Ahmad, R., Verma, R. R., Sengar, V. S., Singh, K. K., & Singh, A. (2019). Constraints analysis of mustard cultivation in Lakhimpur Kheri district of Uttar Pradesh. *Journal of Pharmacognosy and Phytochemistry*, 8(3), 6–8.
3. Katiyar Gaurav and Dwivedi Pritesh(2025). An analytical study on the marketing of sugarcane in Lakhimpur District of Uttar Pradesh. *International Journal of Agriculture and Food Science*, 7(5), 273-275
4. Kohima, N., Chauhan, J. K., Walia, S. S., Verma, M. R., Dhar, U., Choudhary, S., & Chikkeri, S. S. (2023). Constraints in vegetable production in India: A review. *Indian Research Journal of Extension Education*, 23(3), 14–19.
5. Dash, S. R., Mishra, P. J., Bar, N., Biswas, K. K., & Pani, R. R. (2022). Constraints analysis in adoption of vegetable production technologies in Odisha. *Journal of Research in Humanities and Social Science*, 10(5), 45–53.
6. Sruthi Sai, K., AliBaba, M., & Vijaya Kumari, R. (2022). Constraints faced by farmers in crop production and marketing. *The Pharma Innovation Journal*, SP-11(1), 629–631.