

Constraints Faced by Farmers and Processors of Kasuri Methi (*Trigonella corniculata* L.)

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Abstract

A study was conducted to identify the constraints faced by producers-farmers and processors in Nagaur district of Rajasthan with a sample of 80 households. The data were analyzed by Garrett's ranking technique. The findings of study indicated that major constraints the lack of irrigation (with 73.19-GS) and non-availability of improved seeds (with 71.99-GS) constraints faced by farmers in production, lack of access to credit agencies (with 70.29-GS) and non-availability of adequate credit (with 66.68-GS) in credit, high fluctuation of price (with 69.56-GS) and lack of remunerative price of produce (with 62.19-GS) in marketing, high wage rate of labour (with 68.06-GS) and non-availability of labour (with 66.94-GS) in harvesting, sun drying (with 71.85-GS) and more labour requirement during drying process (with 66.60-GS) in drying, farmers struggled with the high cost of transportation (with 56.18-GS) and the loss during transportation (with 51.66-GS) in transportation, the significant issue of intensive weed growth mainly mimicry weed (*Melilotus indicus*) (with 55.85-GS) and damaged caused by pests and insects (with 44.15-GS) in term of pest and insects, no specific collection centres for produce (with 67.09-GS) and non-availability of storage facilities at farmer level (with 58.29-GS) in infrastructure, and the high interest rate which makes difficult to new firm to establishment a new plant (with 67.75-GS), followed by the unskilled labour (with 61.63-GS) in processing. Addressing these constraints is essential for the sustainable growth and development of the kasuri methi, ensuring the well-being of farmers and the overall of the supply chain.

Keywords: Kasuri methi, Paan methi, Production, Processing, Drying, Pests & Insects, Storage.

Introduction

Kasuri methi requires relatively cooler climate. It is grown mostly in sandy loamy soil which has rich organic content. Loamy soil is good for well drainage in fenugreek cultivation. In kasuri methi, the seed rate ha⁻¹ is 30-35 kg (Singh *et al.*, 2019). Most famous Pakistani fenugreek with fragrance grown in the Kasur district of Punjab province, so identified as "kasuri methi" (Erumshazia and Masood, 2011). Kasuri methi is called as "Pan Methi" in Nagaur district because leaves are harvested four to five time in season (Kumawat *et al.*, 2018). It's all parts are useful and utilized in various forms like fodder, food, medicine and cosmetics. The vibrant, fresh green leaves of kasuri methi find their culinary purpose in salads, while their aromatic qualities elevate a wide array of dishes, adding a delightful spice during off-

seasons. Furthermore, the versatile seeds of kasuri methi serve multiple functions, including their role in dye production and the extraction of valuable steroids and alkaloids for various applications. Kasuri methi is renowned as a very important source of essential minerals, vitamin, dietary fibres, protein and fat (Duke, 1981). Kasuri methi leaves are very perishable in nature.

The Department of Agriculture of Rajasthan government offers farmers and producers a range of facilities, but many of them continue to struggle with issues pertaining to methi production, credit, storage, marketing, drying, harvesting, transportation, weeds and insects, infrastructure and methi processing. Consequently, it was valuable to recognize and examine the many constraints that farmers and producers in the study area had to deal with. Given the

paramount significance of methi production within the spice sector in shaping Rajasthan's rural economy, a research study was undertaken with the objectives to identify the constraints faced by farmers and processors.

Materials and Methods

Nagaur district of Rajasthan was purposively selected for present study due to kasuri methi is mainly grown in Nagaur district. Area in Nagaur district under kasuri methi was 3763 hectare and the production was 8264 metric tonnes during the year 2021-22 (Department of Agricultural, Nagaur 2021-22). Two tehsils, namely Mundwa and Merta, were selected from Nagaur district. Two villages from each tehsil, namely Inna and Roon from Mundwa tehsil, and Shiv and Karwasorn ki dhani from Merta tehsil in Nagaur district, were purposively selected for the study. A sample of 20 kasuri methi farmers from each designated village was taken. A total 80 kasuri methi farmers were selected for the analysis. The present study was conducted on primary data which were collected during the rabi season of the 2022-23 year. Garrett's ranking technique was employed to identify the constraints experienced by kasuri methi farmers/processors. Farmers/processors provided their preferences, which were then converted into rankings using a formula. In this technique, farmers/processors ranked all the factors, and the resulting rankings were transformed into score values using the following formula:

$$100 (R_{ij}-0.50) = \frac{\text{Per cent position}}{N_j}$$

Where,

R_{ij} = rank given for the i th constraint ($i=1,2,3.... n$) by the j th farmer /processor ($j= 1,2,3.... n$)

N_j = number of constraints ranked by the j th individual farmer/processors.

Once the per cent positions were obtained, the per cent position of each rank was converted to Garrett scores by referring to table given in Garrett and Woods worth (1969). Then the scores for each factor were summed over the number of sample farmers/processors who ranked that factor. In this way, total scores were arrived for each of the n th factors and mean scores were calculated by dividing the total score by the number of respondents. Finally, overall ranking of the n th factors were ranked by assigning rank I, II, III,. and so on in the descending order of the mean scores.

Results and Discussion

Constraints are factors that obstruct the normal flow of a process. They can be physical, financial, marketing or storage and often hinder an entity's goals. In the study, kasuri methi farmers ranked constraints affecting them during production and marketing using the Garrett ranking technique. These constraints encompass various aspects like production, credit availability, marketing, drying, harvesting, transportation, infrastructure, pests, and others. The processor's constraints during kasuri methi processing are also detailed with their Garrett's scores and ranks.

1. Constraints faced by farmers in the production of kasuri methi leaves:

Table 1 categorizes ten significant constraints encountered by kasuri methi farmers in the production of kasuri methi leaves. The analysis revealed that the first and foremost constraint in kasuri methi farming was lack of irrigation with 73.19 Garrett score as kasuri methi require 16-18 irrigation in a season but there was shortage of water for irrigation for famers followed by non-availability of improved seeds (with 71.99-GS), problem related to soil fertility (with 65.85-GS), non- availability of workers in peak season (with 58.43GS), lack of technical knowledge about cultivation practice of kasuri methi (with 54.10-GS), lack of machinery used for cutting (with 48.68-GS), difficulty in agriculture management operation (with 39.59-GS), unfavorable climate condition like drought, high temperature, flood etc. (with 37.95-GS), difficulty in purchasing the inputs (with 29.69-GS) and timely unavailability of input such as planting material, fertilizers etc. (with 20.55-GS). The similar findings were also documented in the study conducted by Pawariya *et al.*, (2020) and in Meena *et al.*, (2021).

Table1: Constraints faced by farmers in production of kasuri methi leaves

S. No.	Production Constraints	Garrett's Score	Ranks
1	Soil quality issues (alkalinity)	65.85	III
2	Lack of machinery used for cutting	48.68	VI
3	Lack of irrigation	73.19	I
4	Non-availability of improved seeds	71.99	II
5	Difficulty in agriculture management operations	39.59	VII
6	Difficulty in purchasing of inputs	29.69	IX
7	Unfavourable climatic condition (drought, flood high temperature)	37.95	VIII

	etc.)		
8	Non-availability of labours in peak season	58.43	IV
9	Timely unavailability of input such as seeds, fertilizers etc.	20.55	X
10	Lack of technical knowledge about cultivation practice of kasuri methi	54.10	V

2. Constraints faced by farmers in getting credits

Table 2 categorizes six significant constraints encountered by kasuri methi farmers related to credit availability. The foremost concern was lack of access to credit agencies with 70.29 Garrett score. Furthermore, the non-availability of adequate credit (with 66.68GS), high-interest rates on the credit (57.04-GS), lack of knowledge of credit agencies (with 35.50-GS), difficult application process for credit (with 33.89-GS) and inadequate quality of service provided by credit agencies (with 32.81-GS).

Table 2: Constraints faced by farmers in getting credits

S. No.	Credit Constraints	Garrett's Score	Ranks
1	Lack of access to credit agencies	70.29	I
2	Lack of knowledge of credit agencies	35.5	IV
3	Inadequate quality of service provided by credit agencies	32.81	VI
4	High rate of interest of credit	57.04	III
5	Difficult application process for credit	33.89	V
6	Non-availability of adequate credit	66.68	II

3. Constraints faced by the farmers in storage of kasuri methi leaves

Table 3 categorizes five significant constraints encountered by kasuri methi farmers related to storage. Farmers were primarily relied on traditional local drying methods with 65.69 Garrett score. Additionally, there was a lack of awareness about appropriate storage techniques (with 63.00-GS). Furthermore, the absence of scientific storage conditions (with 56.19-GS), more space required during storage (with 33.56-GS) and damage caused by the pests (fungal attack) during storage (with 31.56- GS).

Table 3: Constraints faced by the farmers in storage of kasuri methi leaves

S. No.	Storage Constraints	Garrett's Score	Ranks
1	Using old local drying technology	65.69	I
2	Lack of knowledge on kasuri methi storage	63.00	II
3	More space required during storage	33.56	IV
4	Damage causes by pests during storage	31.56	V
5	Non-availability of scientific storage structure	56.19	III

4. Constraints faced by farmers in marketing of kasuri methi leaves

The Table 4 categorizes eight significant constraints encountered by kasuri methi farmers during marketing of kasuri methi. When it came to marketing kasuri methi, the main problem was dealing with price fluctuations of kasuri methi leaves with 69.56 Garrett score followed by lack of remunerative price of produce (with 62.19-GS), lack of competitive price (with 61.03-GS), existence of malpractices by intermediaries (with 60.16-GS), lack of grading knowledge (with 51.69-GS), the low access to market information to farmers (with 35.16-GS), lack information about price of kasuri methi to market information (with 32.25-GS) and bulkiness nature of kasuri methi (with 28.96-GS). Similar findings have been reported by Pawariya *et al.*, (2020) and Meena *et al.*, (2021).

Table 4: Constraints faced by farmers in marketing of kasuri methi leaves

S. No.	Marketing Constraints	Garrett's Score	Ranks
1	High fluctuation of price	69.56	I
2	Bulkiness nature of kasuri methi	28.96	VIII
3	Lack of information about price kasuri methi	32.25	VII
4	Lack of grading knowledge	51.69	V
5	Lack of competitive price	61.03	III
6	Lack of access about market information to farmer	35.16	VI
7	Lack of remunerative price of produce	62.19	II
8	Existence of malpractice by intermediaries	60.16	IV

5. Constraints faced by the farmers in harvesting of kasuri methi leaves

The Table 5 categorizes five significant constraints encountered by farmers during harvesting of kasuri methi. The foremost problem faced by growers was high rate of labour wage (with 68.06-GS), followed by non-availability of labour (with 66.94-GS), high cost of harvesting machine (with 39.06-GS), uneven height of cutting of kasuri methi (with 39.88-GS) and undulated land (with 37.06-GS).

Table 5: Constraints faced by the farmers in the harvesting of kasuri methi leaves

S. No.	Harvesting Constraints	Garrett's Score	Ranks
1	Non availability of labour	66.94	II
2	High wage rate of labour	68.06	I
3	Uneven height of cutting of kasuri methi	38.88	IV
4	High cost of harvesting machine	39.06	III
5	Undulated land	37.06	V

6. Constraints faced by the farmers in the drying of kasuri methi leaves

The Table 6 categorizes seven significant constraints encountered by kasuri methi farmers during drying of kasuri methi leaves. In drying process, main constraints faced farmers were the more time consuming in sun drying with Garret score 71.85, followed by more labour requirement during drying process (with 66.60-GS), darkening of leaves during traditional method of drying (with 63.35-GS), non-availability of space for drying of kasuri methi (with 43.93-GS), lack of mechanized drying technique (with 41.27-GS), fear of damaged due to wild animals (with 34.05-GS) and fear of damage from climate change (with 28.93-GS). Similar findings have been reported Meena *et al.*, (2021).

Table 6: Constraints faced by the farmers in the drying of kasuri methi leaves

S. No.	Drying Constraints	Garrett's Score	Ranks
1	More time consuming in sun drying	71.85	I
2	More labour required	66.60	II
3	Non availability of space	43.93	IV

4	Lack of mechanized drying technique	41.27	V
5	Fear of damaged due to wild animals	34.05	VI
6	Fear of damage from climate change	28.93	VII
7	Darkening of leaves during traditional drying	63.35	III

7. Constraints faced by the farmers in the transportation of kasuri methi leaves

The Table 7 categorizes three significant constraints encountered by kasuri methi farmers during transportation of kasuri methi leaves. In terms of transportation, farmers struggled with the high cost of transportation with 56.18 Garrett score, followed by the loss during transportation (with 51.66-GS) and the distant location of markets (with 42.16-GS).

Table 7: Constraints faced by the farmers in the transportation of kasuri methi leaves

S. No.	Transportation Constraints	Garrett's Score	Ranks
1	High cost of transportation	56.18	I
2	Loss during transportation	51.66	II
3	Distant location of markets	42.16	III

8. Constraints faced by farmers related to weeds and insects

The Table 8 categorizes two significant constraints encountered by kasuri methi farmers related to insects and pest that effect the production of kasuri methi leaves. As regards pests and insects, the primary constraints encountered by farmers was the significant issue of intensive weed growth mainly mimicry weed (*Melilotus indicus*) with Garrett score 55.85 and damaged caused by pests and insects with score 44.15. In my study, the presence of mimicry weeds has been found to impact the growth of Kasuri Methi. This observation aligns with the findings reported by Pawariya *et al.*, (2020) and Meena *et al.*, (2021).

Table 8: Constraints faced by farmers related to weeds and insects

S. No.	Pest and insects Constraints	Garrett's Score	Ranks
1	Intensified weed presence	55.85	I
2	Damage causes by insects	44.15	II

9. Infrastructure constraints faced by the farmers during cultivation of kasuri methi leaves

The Table 9 categorizes four significant constraints encountered by kasuri methi farmers related to infrastructure. The infrastructure constraints faced by farmers was no specific collection centres for produce with Garrett score 67.09, followed by non-availability of storage facilities at farmer level (with 58.29-GS), inadequate number of processing mills at local level (with 40.71-GS) and non-availability of transportation vehicle (with 33.91-GS). Similar findings have been reported by Meena *et al.*, (2021).

Table 9: Infrastructure constraints faced by the farmers during cultivation of kasuri methi leaves

S. No.	Infrastructure Constraints	Garrett's Score	Ranks
1	No availability of transportation vehicle	33.91	IV
2	No availability of storage facilities at farmer level	58.29	II
3	Inadequate number of processing mills at local level	40.71	III
4	No specific collection centres for produce	67.09	I

10. Constraints faced by the processors

The processor's constraints during kasuri methi processing are also detailed with their Garrett's scores and ranks. The Table 10 categorizes seven significant constraints encountered by the processors during processing of kasuri methi. The major constraints encountered by the processors during processing of kasuri methi was the high interest rate which makes difficult to new firm to establishment a new plant with Garrett score 67.75, followed by the unskilled labour (with 61.63-GS), high cost of machinery (with 58.75-GS), non-availability of raw material around the year (with 55.13-GS), high cost of packaging material (with 52.13-GS), poor hygiene condition during the processing (with 37.38-GS) and difficulty in cleaning and grading (with 25.25-GS).

Table 10: Constraints faced by the processors

S. No.	Processing Constraints	Garrett's Score	Ranks
1	Non-availability of raw material around the year	55.13	IV
2	High interest rate makes	67.75	I

	difficulty to establishment		
3	Unskilled labour	61.63	II
4	High cost of processing machinery	58.75	III
5	High cost of packaging materials	52.13	V
6	Poor hygiene conditions during the processing	37.38	VI
7	Difficulty in cleaning, sorting and grading	25.25	VII

Conclusion

It can be concluded from the constraints analysis that numerous constraints faced by both the farmers and processors. A major constraint faced by kasuri methi farmers during the production phase was lack of irrigation facility, among all the ten constraints in the research area. The major constraints related to credit encountered by the kasuri methi farmers was the lack of access to credit agencies among all the six constraints. The major constraints related to storage faced by kasuri methi farmer was using old local drying techniques which results to wastage of the produce. The major constraint related to marketing was great price fluctuation of kasuri methi among all the eight constraints. During harvesting the major constraints faced by the kasuri methi farmers was found to be high wage rate of labour, among all the five constraints. In the drying, major constraints was found to be sun drying process which is very slow process among all the seven constraints. During transportation, major constraints were the high cost of transportation, among all the three constraints. In term of weed and insects, the primary constraint encountered by farmers was the significant issue of intensive weed growth which affects the growth of kasuri methi. The infrastructure problem faced by farmers was no specific collection centres for produce. The major constraints encountered by the processor were the high rate of interest which made it difficult to enter the new firm in this business.

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