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Farmers' experience problems and constraints in production, processing, and marketing of lemongrass in Jammu region of Jammu and Kashmir union territory: An analysis

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Abstract

Lemongrass is known for its oil which is obtained from leaves by steam distillation. The oil contains citral (75 percent) which gives lemon like fragrance and a source of Vitamin A. The research was carried out in the Jammu region of the Jammu and Kashmir (U/T). Reasi, Kathua and Udhampur districts were selected purposively as only these districts cultivated lemongrass. Selection of farmers were done through census survey. The study was carried out in the Jammu area of the Jammu and Kashmir union territory in order to determine the challenges that farmers confront in the cultivation, processing, and marketing of lemongrass. Surveys were used to acquire primary data from a number of respondents. Using a complete pre-tested schedule-cum-questionnaire, primary data were collected from lemongrass farmers and secondary data from KVKs and CSIR-Indian Institute of Integrative Medicine, Jammu. Garret ranking technique was used as a methodology for data analysis. The key challenges faced by farmers in production, processing and marketing were lack of financial resources, lack of technical knowledge, irrigation facilities, lack of availability of processing unit, lack of knowledge about appropriate stage of harvesting, lack of knowledge of running distillation unit, prevalence of low prices in local and distant markets, lack of market information and high transportation cost. According to the findings of the study, it could be recommended that the concerned institutes must provide technical guidance regarding package of practices and post-harvest management including marketing information to the farmers which helps them to earned maximum share.

Keywords: Lemongrass, constraints, challenges, marketing

Introduction

India has diverse range of medicinal and aromatic plants. Among various medicinal and aromatic plants, lemongrass is one of them which has diverse medicinal property and huge economic potential as it requires less inputs than agricultural crops like wheat, rice etc. Lemongrass (*Cymbopogon flexuosus*) belongs to poaceae family, (Paranagama *et al.*, 2003) [6] perennial, tall plants cultivated in many parts of tropical and sub-tropical countries and gets its name for its essential oil which have lemon like aroma. The lemongrass is short day plant with culms stout, erect and up to 150 cm height and leaves are prolific, long, green, linear tapering upwards along the margins. The lemongrass is also called Cochin or Malabar grass as it is originated from India, Sri-Lanka, Burma and Thailand.

In India it was cultivated a century back and now cultivated in different parts of Western Ghats, Karnataka, Tamil Nadu, and in some north eastern region with area of above 3000 ha and each year, about 1000 tonnes of lemongrass are produced out of those, 300 to 400 tonnes are exported (Hindustan Times, 2022) [2]. In Jammu and Kashmir this crop was first introduced in Reasi during the year 2016-17 by Council of Scientific and Industrial Research - Indian Institute of Integrative Medicine Jammu collaboration with Central Institute of Medicinal and Aromatic Plants (CIMAP) Lucknow. The plus point of introducing this crop is that it is not affected by monkeys and any pest or disease so it become the extra income source for the farmer by using barren land (Lal and Tandon, 2019) [4]. In Jammu mostly farmers grow Krishna, CKP-25 variety of lemongrass. Now this crop come under the Aroma mission, a centrally sponsored schemes (ANI Report, 2020) [20]. Through this scheme planting material was distributed among the farmer and establishes distillation units in these districts. Now many farmers who are involved in cultivation of lemongrass earn their income. Recently, Udhampur district farmers started growing this crop. The farmers of these districts grow crops and after harvesting takes it to distillation unit

and from there they get essential oil, previously they brought it to Indian Institute of Integrative Medicine (IIIM) Chatha-Jammu for processing and given to institute for marketing, IIIM-Jammu after marketing send their money in their account. But now the farmer itself sells their produce to the market after distillation. As lemongrass is newly introduced plantation crop in Jammu and Kashmir Union Territory so farmers facing lot of problems and constraints in production, processing and marketing. Thus the aim of the research is to figure out the problems and constraints confronted by farmers in Jammu region of Jammu and Kashmir Union Teritorry by using constraints analysis.

Materials and Methods

Locale of study

The present study was conducted in Jammu region of Jammu and Kashmir Union Territory. Reasi, Kathua and Udhampur districts were purposively selected as only these districts have maximum farmers cultivating lemongrass.

Sampling design

Sampling Techniques

A census technique was adopted for the selection of the farmers. The number of farmers cultivating lemongrass in Reasi, Kathua and Udhampur districts were 48, 30 and 38, respectively with a total of 116 farmers. Out of 116 farmers 41 farmer were small having land holding 1-2 ha, 38 farmers were marginal having land holding of less tha 1 ha and 37 farmers were medium farmers having land holding 2-4 ha.

Selection of the farmers

The list of farmers cultivating lemongrass was procured from KVK Reasi, KVK Kathua, KVK Udhampur and Department of Agriculture. All the farmers of the list involved in cultivating lemongrass were selected for the proposed study.

Production, processing and marketing constraints

The Garret's ranking approach was utilized to examine the challenges in the production and marketing of Lemongrass in the research area. The technique is as follows:

Garret ranking technique

Position as a percentage = 100 (Rij - 0.5) Nj

Where Rij denotes the rank given by the jth individual (j = 1, 2.....8) for the ith factor (i = 1, 2.....8) and Nj is the number of factors ranked by the jth individual.

Once the percent spots were identified, the scores for each percent position were calculated using Garrett's table. The scores for each element were then averaged over the number of households that ranked that factor.

Total scores were obtained for each element in this manner, and mean scores were determined by dividing the total score by the number of respondents who provided rankings. Finally, the eight components were ranked overall by giving ranks 1, 2, 3,...8 in descending order of the mean.

Results and Discussion

The various constraints at production, processing and marketing level were worked out separately by using garret ranking techniques in the Reasi, Kathua and Udhampur districts of Jammu region of Jammu and Kashmir Union Territory. In Udhampur district only production constraints were identified because they just started cultivation and yet no yields of herbage and lemongrass oil were obtained. Therefore, the constraints generally faced by the farmers in production were lack of financial resources, lack of technical knowhow, lack of irrigation, unavailability of skilled labour, costly inputs, low quality inputs, lack of suitable equipments, lack of nutrients in the land and lack of improved varieties and in case of processing and marketing of lemongrass the constraints were lack of availability of processing facility, lack of knowledge about appropriate stage of harvesting, lack of knowledge of running distillation unit, lack of water for processing, lack of handling produce, lack of storage, lack of packing material and prevalence of low prices in local and distant markets, lack of market information, high transportation cost, lack of regulated markets, lemongrass oil markets at distant place, lack of quality control facilities, absence of connecting highways, improper payment procedures by traders, and late payments.

Production constraints

The production constraints as shows in table 1. and fig 1. indicating that lack of financial resources, followed by lack of technical knowledge and irrigation was the major problems common all the three districts with average score of 71.14, 69.14 and 65.91 in Reasi district, 69.43, 69.03 and 62.23 in Kathua district and 69.76, 69.44 and 64.73 in Udhampur district, respectively. As most of the farmers of these districts does not know about the cultivation practices and less preference to work in agriculture as a labor so unavailability of skilled labour ranked 4th with average score of 59.47 and 63.13 in Reasi and Udhampur districts respectively Generally the farmers cultivate lemongrass organically because according to them the quality of inputs they purchased like fertiliser was low hence the quality of inputs ranked 6th in Reasi districts with an average score of 39.97, whereas lack of nutrients in land were ranked 6th by the farmers of Kathua and Udhampur districts with an average score of 40.13 and 41.44 in respective districts. Further it was found that lack of suitable equipment for the cultivation practices with an average score of 35.16 in Reasi districts and low quality inputs with an average score of 36.76 and 35.65 in Kathua and Udhampur districts respectively were ranked 7th. The least problems in production faced by the farmers were common in Reasi, Kathua and Udhampur districts i.e., Lack of improved varieties with an average score of 28.37, 31.43 and 29.23 respectively. This was because the varieties CKP-25 grown by the farmers was developed by the Indian Institute of Integrative Medicine Jammu for the North Eastern region of India. Hence it was observed that farmers face difficulty in the purchasing of inputs, cultivation and irrigation which leads to the reduction in theproduction of lemongrass herbage. Because of rainfed area lack of water also leads to decrease in production. These results are nearly identical with the findings of Malik (2007) [5].

Marketing constraints

The processing constraints indicating in table and figure 2.

shows that the key challenges confronted by the farmers was lack of availability of processing units with average score of 70.02 and 67.70 in Reasi and Kathua district respectively. Establishment of distillation unit for a farmer is quite impossible because of high investment cost. However the government and some NGO's establish 2-3 processing units in every districts but the farmers live in villages of these districts for which they have to travel long distance specially for the processing of lemongrass. Harvesting of lemongrass affects its oil yields this farmers income therefore lack of knowledge about appropriate stage of harvesting ranked 2nd problems with an average score of 66.85 and 66.23 in both the Reasi and Kathua districts respectively. For running the distillation unit one must have knowledge about the process and handling of the distillation unit therefore the lack of knowledge of running distillation unit ranked 3rd by the respondents of Reasi and Kathua districts with an average score of 61.54 and 65.13 respectively. Water is the most important components for our daily life, but both the districts i.e. Reasi and Kathua come under rainfed area thus have limited source of water and the farming in these areas fully dependent on rainfall. For processing the farmer have to brought water through tanks from the nearby river or stream thus lack of water for distillation ranked 4th with an average score of 50.03 and 41.76 in both Reasi and Kathua districts respectively. Lack of storage and followed by lack of packing material were the least problems faced by the farmers with an average score of 35.33 and 32.73, 31.25 and 31.83 in both Reasi and Kathua districts respectively. These results are in conformity with the findings of Shrivastava (2000) [7].

Marketing constraints: The marketing constraints of the region indicating in table and figure shows that the key problems confronted by the farmers was prevalence of low prices in local and distant markets with an average score of 69.10 and 70.20 followed by lack of market information with an average score of 68.87 and 69.23 and high transportation cost with an average score of 66.54 and 68.76 in both Reasi and Kathua districts respectively. As this was the newly introduced crop in Jammu region the various problems come into way of the farmers in the marketing of lemongrass oil. Lack of regulated markets with average score of 52.43 in Reasi districts and markets at distant place with an average score of 53.93 in Kathua district ranked 4th respectively. Connectivity plays a major role in marketing of lemongrass, lack of link roads affects the marketing of essential oil thus ranked 7th with an average score of 37.00 in Reasi districts whereas in Kathua districts delayed payment by the traders ranked 7th with an average score of 36.70. Further it was found that in Reasi district delayed payments by the traders with an average score of 30.18 and malpractices by traders with an average score of 33.76 in Kathua districts ranked 8th. The least problems faced by the farmers Reasi districts was the malpractice by the traders with an average score of 30.04 and in Kathua district lack of link roads with an average score of 26.16. These findings are nearly identical with the findings of Guleria *et al.* (2014) [3].

Table 1: Constraints faced by the farmer in the production of lemongrass in Reasi and Kathua and Udhampur districts of Jammu Region

S. No.	Particulars	Reasi		Kathua		Udhampur	
		Average Score	Rank	Average Score	Rank	Average Score	Rank
1.	Lack of financial resources	71.14	**I**	69.43	I	69.76	I
2.	lack of technical know how	69.14	II	69.03	II	69.44	II
3.	Lack of irrigation	65.91	III	62.23	III	64.73	III
4.	Unavailability of skilled labor	59.47	IV	59.6	V	63.13	IV
5.	Costly inputs	46.06	V	34.5	VIII	33.71	VIII
6.	Low quality inputs	39.97	VI	36.76	VII	35.65	VII
7.	Lack of suitable equipments	35.16	VII	60.26	IV	43.42	V
8.	Lack of nutrients in the land	34.37	VIII	40.13	VI	41.44	VI
9.	Lack of improved varieties	28.37	IX	31.43	IX	29.23	IX

Table 2: Constraints faced by the farmer in the processing of lemongrass in Reasi and Kathua districts of Jammu Region

S. No.	Particulars	Reasi		Kathua	
		Average Score	Rank	Average Score	Rank
1	Lack of availability of processing facility	70.02	I	67.7	I
2	Lack of knowledge about appropriate stage of harvesting	66.85	II	66.23	II
3	Lack of Knowledge of running distillation unit	61.54	III	65.13	III
4	Lack of water for processing	50.03	IV	41.76	IV
5	Lack of handling produce	33.12	V	37.36	V
6	Lack of storage	35.33	VI	32.73	VI
7	Lack of packing material	31.25	VII	31.83	VII

Table 3: Constraints faced by the farmer in the marketing of lemongrass in Reasi and Kathua districts of Jammu Region

S. No.	Particulars	Reasi		Kathua	
		Average Score	Rank	Average Score	Rank
1	Prevalence of low prices in local and distant markets	69.10	I	70.2	I
2	Lack of market information	68.87	II	69.23	II
3	High transportation cost	66.54	III	68.76	III
4	Lack of regulated markets	52.43	IV	47.93	V
5	Lemongrass markets at distant place	50.68	V	53.93	IV
6	Lack of quality control facilities	42.81	VI	38.26	VI
7	Lack of link roads	37	VII	26.16	IX
8	Delayed payments by traders	30.18	VIII	36.7	VII

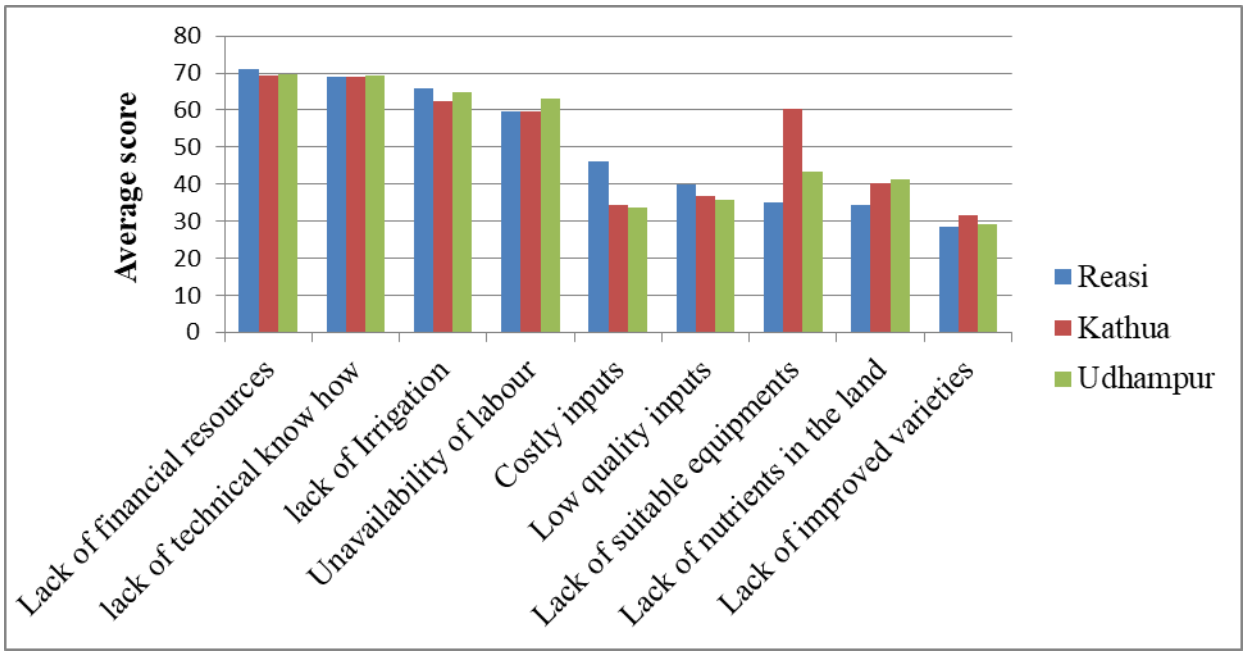

Fig 1: Constraints faced by the farmer in the production of lemongrass in Reasi and Kathua and Udhampur districts of Jammu Region

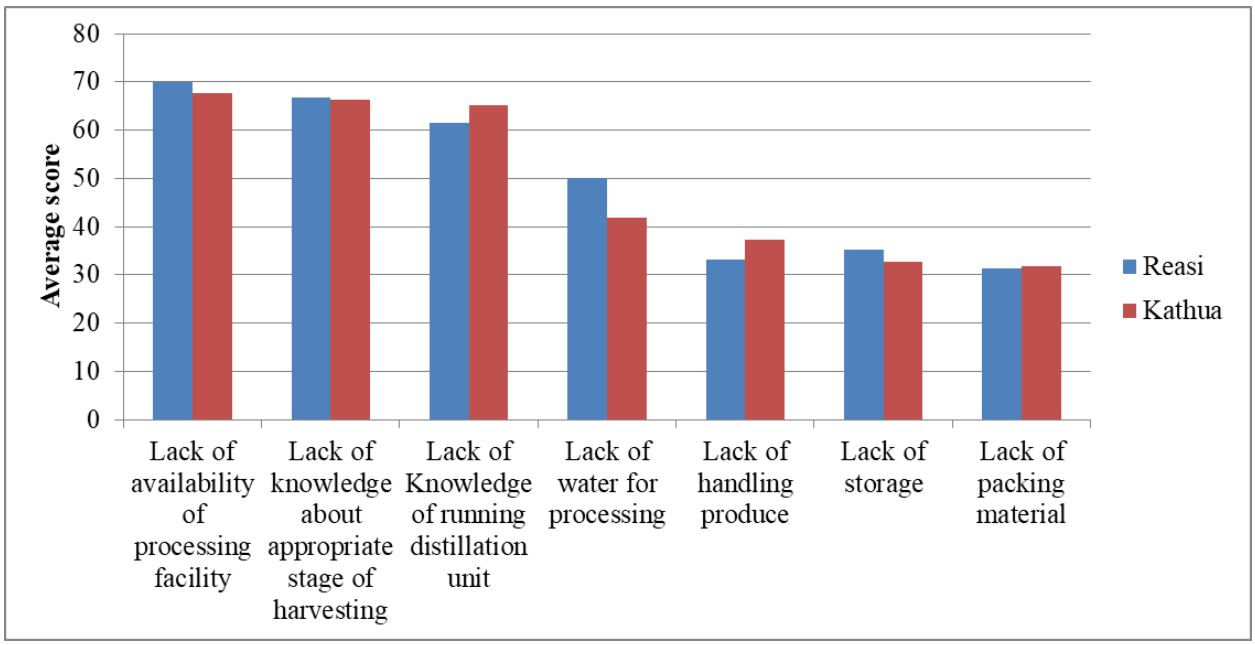

Fig 2: Constraints faced by the farmer in the processing of lemongrass in Reasi and Kathua districts of Jammu Region

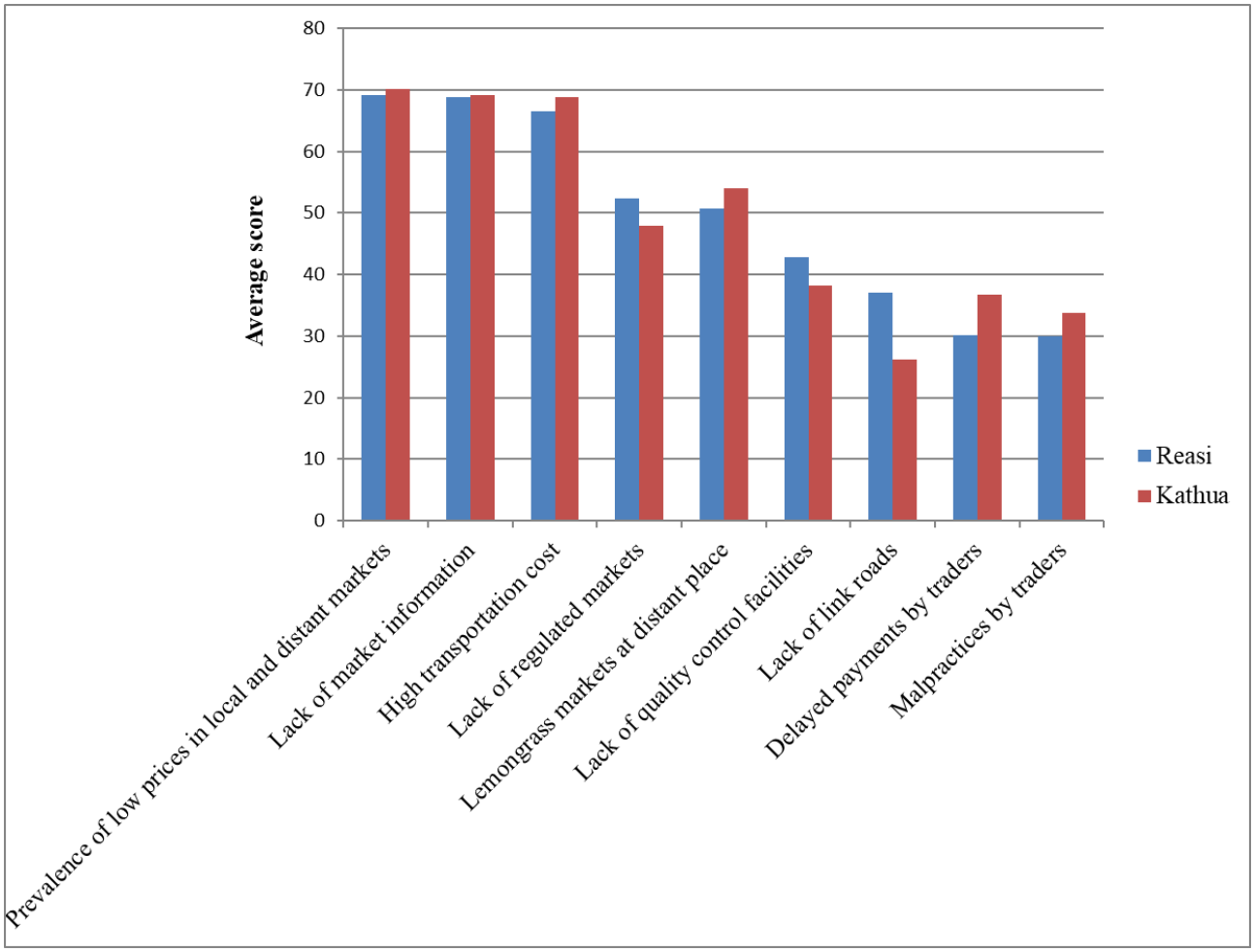

Fig 3: Constraints faced by the farmer in the marketing of lemongrass in Reasi and Kathua districts of Jammu Region

Conclusion

It was concluded that lack of financial resources, followed by lack of technical knowledge and irrigation was the major problems common all the three districts in production while in processing the major problems was lack of availabilty of processing units and in marketing the major problems was prevalence of low prices in local and distant markets. Lemongrass is an important medicinal and aromatic plant and also an emerging crops in Jammu and Kashmir Specially in unirrigated area with a high market value. As a result, it requires great care in both cultivation and processing as well as effective marketing. The problems that the farming community experiences in relation to production, processing and marketing of lemongrass have assumed a considerable significance in this study. Since they provide policymakers with essential information as they create policies for the welfare of the farming community.

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