Constraints faced by the farmers in the production and marketing of sesame in Onattukara region of Kerala

ABSTRACT

The study analyzed the challenges faced by farmers in the production and marketing of sesame in the Onattukara region of Kerala. The districts of Alappuzha, Pathanamthitta and Kollam were purposively selected for the study as the Onattukara region is in these three districts. Eighty farmers each from Kollam and Alappuzha districts, along with three farmers from Pathanamthitta, making a total sample size of 163. Constraints faced by farmer in sesame cultivation were ranked using the Garrett ranking technique.

Sesame cultivation in the Onattukara region faces various challenges in both production and marketing, such as inadequate seed availability, high input costs, low yields, labor shortages, low prices, weather-related issues, price fluctuations, delayed payments, low demand for the final product and the absence of an institutional market mechanism. Similarly, sesame processing unit owners also encounter issues in production and marketing, including raw material shortages, a lack of skilled labor, poor raw material quality, costly production methods, lack of support, low product prices, price volatility, inadequate storage facilities, inefficient markets for final products and limited consumer awareness.

A micro-level study on sesame production and marketing would help producers make informed and specific decisions to improve their income. Additionally, it would assist policymakers in making interventions to enhance sesame production and productivity.

Keywords: Constraints; Garrett ranking technique; Marketing; Onattukara sesame; Production

1. INTRODUCTION

Sesame (*Sesamum indicum* L.), one of the oldest oilseed crops known for its high-quality oil, is grown in tropical and subtropical regions of Asia, Africa and South America (Zhang *et al.* 2013). India is the leading producer of sesame, with 16.23 lakh hectares under cultivation, producing 6.58 lakh tonnes and yielding 405 kg/ha. However, India's average yield (391 kg/ha) is lower compared to other countries (Ranganatha, 2013). Although Kerala is not a major sesame-producing state, it has a long tradition of growing the crop, with 326.51 hectares under cultivation, yielding 163.1 tonnes and a productivity of 499 kg/ha (GOK, 2023). In 2023-24, sesame cultivation in Kerala expanded to 417.11

hectares. As part of a crop diversification initiative, plans are in place to expand sesame cultivation in this area to 750 hectares.

Sesame is grown in 11 districts of Kerala, but the sesame grown in Onattukara region has earned a Geographical Indication (GI) tag. Onattukara is an important agricultural area in Central Travancore, covering parts of Alappuzha, Kollam and Pathanamthitta districts. This region includes Karthikapally and Mavelikkara taluks in Alappuzha, Karunagappally and parts of Kunnathoor taluks in Kollam and Pandalam municipality in Pathanamthitta district.

Despite this, sesame cultivation in Onattukara faces many challenges. Farmers struggle with high labor costs, low prices and lack of storage at the farm level (Sreepriya and Girija, 2019). Other production challenges include limited seed availability, high input costs, low yields, limited credit access, labor shortages, pests and diseases, weather issues, lack of irrigation and insufficient technical support. Marketing challenges include low prices, delayed payments, price fluctuations, high transportation costs, lack of transportation, low demand for sesame products and insufficient market information (Singh *et al.* 2022).

A focused study on sesame production and marketing would help farmers make better decisions and improve their income. It would also provide valuable insights for policymakers to develop strategies to boost sesame production and productivity.

2. MATERIAL AND METHODS

The study was conducted in the Onattukara region, focusing on sesame cultivation areas in the districts of Alappuzha, Pathanamthitta and Kollam in Kerala, specifically in Karthikapally and Mavelikkara taluks in Alappuzha district, Karunagappally and Kunnathur taluks in Kollam district and Pandalam municipality in Pathanamthitta district. From each taluk, two gram panchayats and Pandalam municipality was selected based on the highest sesame cultivation area and production. A random sample of twenty farmers from each gram panchayat and three farmers from Pandalam municipality was included, resulting in a total sample size of 163 farmers. Both primary and secondary data was utilized for the study, with primary data collected directly from sesame farmers using a structured interview schedule. To analyze the challenges faced by farmers in sesame production and marketing, the Garrett ranking technique was employed. This method will help to identify and rank the key constraints, providing valuable insights into the production and marketing difficulties experienced by sesame farmers in Onattukara.

2.1 Garrett ranking technique

The Garrett ranking method was utilized to rank the challenges faced by farmers in sesame production and marketing. Farmers were asked to assess various constraints and their rankings were converted into percentage positions using a specific formula.

Per cent Position = $100\ (R_{ij}-0.5)/N_j$

Where,

R_{ij} is the rank assigned to the i^{th} constraint by the j^{th} farmer is the subject of analysis. The number of constraints ranked by the j^{th} farmer is denoted by N_j. The percentage position of each rank is converted into a Garrett score. For each constraint, the total score for individual respondents is calculated. The total score values are then used to determine the mean score for each constraint. Once the mean scores are evaluated, the constraints are ranked in descending order based on these scores. The constraint with the highest mean score is identified as the most significant challenge (Garett, 1969).

3. RESULTS AND DISCUSSION

The study explored the challenges faced by farmers in sesame cultivation and marketing. During the pilot survey, both farmers and sesame processing unit owners were asked to identify the key production and marketing issues they encountered. These identified constraints were later ranked by the respondents in the main survey. Garrett's ranking technique was used to analyze the data. The analysis of constraints was organized under four main categories to provide a structured understanding of the issues.

3.1 Constraints faced by the sesame farmers during production.

The study outlined and ranked the key challenges faced by farmers in sesame cultivation based on their feedback. Weather-related issues was identified as the most pressing constraint, receiving a Garrett score of 67.99, followed by low prices received (58.44), low yield (57.45), inadequate seed availability (38.84), labour shortages (38.35) and high input costs (38.33). Specifically, weather-related problems, such as irregular rainfall and excessive water accumulation in fields, lead to wilting leaves and result in decreased yields and overall production. Labor plays a critical role in sesame farming and the shortage of labor in the study area and increased wages affected the cultivation. Furthermore, the insufficient availability of seeds discouraged many farmers from pursuing sesame cultivation. High costs associated with inputs like seeds, fertilizers and manures hinder most farmers from implementing the recommended agricultural practices from the agricultural university.

The findings aligned with the research conducted by Sreepriya and Girija (2020), who identified the constraints faced by sesame farmers in Kerala. In their study, the primary challenges included high labor costs (ranked 1, score 39.86), excessive rainfall (ranked 2, score 37.40), drought (ranked 3, score 28.10), weed infestation (ranked 4, score 22.63), labor shortages (ranked 5, score 14.63), pest and disease problems (ranked 6, score 14.53), marketing difficulties (ranked 7, score 7.70), transportation and processing issues (ranked 8, score 6.43) and storage challenges (ranked 9, score 5.73).

Table 1. Constraints faced by the sesame farmers during cultivation.

Sl. No.	Constraint	Garrett's score	Garrett's Ranking
1	Weather related issues	67.99	I

2	Low price realised	58.44	II
3	Low yield	57.45	III
4	Inadequate availability of seeds	38.84	IV
5	Shortage of labour	38.35	V
6	High price of inputs	38.33	VI

3.2 Constraints faced by the sesame farmers during marketing

In terms of marketing challenges, the primary constraint faced by farmers is the low price received for their produce, which has a Garrett score of 68.87. This is followed by price fluctuations (52.8), low demand for the final product (44.96), delay in payment (43.84) and the absence of an institutionalized market mechanism (38.49). The cost of production for sesame is substantial and input prices are high, sets low prices for sesame seeds, leading to market irregularities and fluctuations each season. Additionally, there is a lack of demand for seeds, resulting in low demand for the final product. In the study area, many producers sell their harvests to nearby consumers due to the absence of an established market system. A similar study by Ali *et al.* (2015) examined factors affecting sesame marketing in Jigawa State, Nigeria. It found that wholesalers face challenges such as limited access to credit (47.5%), low prices (40%) and delayed credit payments (15%). These delays often stem from trust issues related to credit arrangements. Another study by *Singh et al.* (2022), who analyzed on the constraints in the production and marketing of sesame and mustard using the Garrett ranking method, yield results that were contrary to those of my study. In their findings, delays in payment for sesame growers were ranked fifth with a score of 50.05, while price fluctuations were ranked eleventh with an overall Garrett score of 49.46.

Table 2. Constraints faced by the sesame farmers during marketing

Sl. No.	Constraint	Garrett's score	Garrett's Ranking
1	Low price	68.87	I
2	Price fluctuation	52.8	II
3	Low demand of final product	44.96	III

4	Delay in payment	43.84	IV
5	No institutionalized market mechanism	38.49	V

3.3 Constraints faced by the sesame processing unit owners in the production of sesame oil.

The primary challenges encountered by sesame processing unit owners in the production of sesame oil included shortage of raw materials, which received a Garrett score of 66.67. This is followed by a lack of skilled labor (53.93), poor quality of raw materials (44.93), expensive production methods (43.06) and inadequate government support (40.4). The shortage of raw materials ranks highest due to the high price of sesame seeds per quintal. Additionally, skilled labor is essential for processing operations, yet there is a notable shortage in this area. The poor quality of raw materials was ranked third because the seeds often contain impurities such as dust, stones and straw, necessitating costly machinery for cleaning. Finally, a significant constraint for sesame processing unit owners is the lack of governmental support, as there are insufficient schemes, policies and subsidies available for them. These findings align with the study by Mary *et al.* (2023), who analyzed on the constraints in the procurement and processing of sesame in Telangana. Their research identified similar challenges, including the lack of assured supply of raw materials, high prices, poor quality and substantial marketing and processing costs.

Table 3. Constraints faced by the processors in the production of sesame oil

Sl. No.	Constraint	Garrett's score	Garrett's Ranking
1	Shortage of raw material	66.67	I
2	Shortage of skilled labour	53.93	II
3	Lack of quality in raw material	44.93	III
4	Costly method of production	43.06	IV
5	Poor government support	40.4	V

3.4 Constraints faced by the sesame processing unit owners in the marketing of sesame oil.

The main challenges faced by sesame processing unit owners in marketing sesame oil include low product prices (67.66), high price fluctuations (57.6), inadequate storage facilities (49.93), a lack of efficient markets for the final product (38.6) and limited awareness about the product (35.2). Price fluctuations create irregular market conditions each season. Additionally, there is a lack of efficient markets for sesame products, forcing processors to invest more in accessing distant markets to enhance sales and profits. Furthermore, there is limited awareness in the region regarding the benefits of sesame oil, leading to low consumer knowledge about its advantages. To address this, efforts are being made to promote awareness of the product and its benefits. These findings are consistent with the study conducted by Mary *et al.* (2023), who examined on constraints in the procurement and processing of sesame in Telangana. Their research identified similar marketing issues, including the lack of efficient markets for final products, competition from other sesame oil producers, high sales tax rates and insufficient product awareness.

Table 4. Constraints faced by the sesame processing unit owners in the marketing of sesame oil.

Sl. No.	Constraint	Garrett's score	Garrett's Ranking
1	Low price	67.6	I
2	High price fluctuation	57.6	II
3	Inadequate storage facilities	49.9	III
4	Lack of efficient market to final product	38.6	IV
5	Lack of awareness about the product	35.2	V

4. SUGGESTIONS FOR IMPROVEMENT FOR SESAME PRODUCTION

Farmers involved in sesame cultivation provided several suggestions to enhance both production and marketing. The key recommendations from both farmers and authorities included ensuring continuous support and follow-up based on the practices adopted by universities, promoting better coordination between authorities and farmers and improving production and marketing facilities. Additionally, they emphasized the need for efficient fund utilization, increased awareness of the crop

and its benefits and the importance of diversified farming practices to enhance crop yields and income. They also highlighted the necessity for easier access to loans and subsidies, fair market prices for agricultural products, crop insurance protection in case of seasonal failures and additional training for farmers. Technological advancements and effective market support needed to transform sesame production into a profitable venture.

5. CONCLUSION

The application of Garrett's ranking technique revealed significant constraints faced by farmers in production and marketing including weather-related issues ,low prices received ,low yield , inadequate seed availability, labor shortages, high input costs, price fluctuations ,low demand for the final product, delay in payment and the absence of an institutionalized market mechanism. Recommendations and suggestions were given by officials for boosting up sesame production, which include improved agricultural practices, market development and support and policy and institutional support. By implementing these recommendations, sesame production can be transformed into a more productive and profitable venture, benefiting farmers and boosting the agricultural economy.

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