

FINGER MILLET (RAGI) CULTIVATION IN KARUR DISTRICT

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Abstract

It is grown in about 131 countries and is the traditional food for around 60 crore people in Asia and Africa. India is the largest producer of millet in the globe. It accounts for 20 percent of global production and 80 percent of Asia's production. In the international year of millets, it is worth examining the cultivation, productivity and promotion of cultivation of millets. Proportionate random sampling method is used and 120 finger millet sample respondents (90 male and 30 female) have been selected in ten villages in Karur district, Tamil Nadu. The data collected through personal entry methods were tabulated and analyzed. From the study, we can conclude that the labour availability is the major problem; the government has to ensure the availability of labour for agriculture through some policies like utilizing the labour source from the employment guarantee scheme. Hence, the adoption level of nutrient management practices among ragi growers can be improved.

Keywords: Cereals, Finger millet, Food grains, Food crops, Millets, Ragi

Introduction

Food-grains constitute the main food items of the entire population in the country. As a result of sustained efforts, food grain production has increased from 50.8 million tonnes in 1950-51 to 296.65 million tonnes in 2019-20. In the world, the total area under millets in 2019 was 31.65 million hectares which provided about 28.37 million tonnes of millets with a productivity of 896.3 kg/ha. In tropical regions of the world, millets are considered as important crops due to their resistance to pests and diseases, short growing season and productivity under hardy and drought conditions. Ragi also known as finger millet is one of the important food crops mainly used in India and Africa. Even though the finger millet has more nutrition and health benefits compared to other food grains, it is considered a poor person's food grain. It is rich in protein, calcium, phosphorus, iron, fiber and vitamin content. The calcium content is higher than all cereals and iodine content is considered to be highest among all the food grains. Ragi has best quality protein along with

the presence of essential amino acids, vitamin A, vitamin B and phosphorus. In India, finger millet is grown and consumed in Karnataka, Andhra Pradesh, Tamil Nadu, Odisha, Maharashtra, Kumaon region of Uttarakhand and Goa. The total area under finger millet in India is 891 thousand hectares (2018-2019).

Millets have special nutritive properties (they are high in protein, dietary fiber, micronutrients and antioxidants) and special agronomic characteristics (drought-resistant and suitable for semi-arid regions). Two groups of millets are grown in India. Major millets include sorghum, pearl millet and finger millet, while minor millets include foxtail, little millet, kodo, proso, and barnyard millet. India's Millet Revolution is driven by growing awareness of the health and environmental benefits of millets, as well as efforts to revive traditional agricultural practices and support small-scale farmers. It is seen as a solution to the country's dual challenges of improving public health and promoting sustainable agriculture. Millets are drought-resistant, require less water and

can grow in poor soil conditions. This makes them a suitable food crop for areas with unpredictable weather patterns and water scarcity. Millets are a good source of fiber, protein, vitamins, and minerals. Millets are naturally gluten-free, making them suitable for people with celiac disease or gluten intolerance. Millets can be grown in a variety of soils and climates, making them a versatile crop option for farmers. Millets are often grown using traditional farming methods, which are more sustainable and environmentally friendly than modern, industrial farming practices.

It is a collective term referring to a number of small-seeded annual grasses that are cultivated as grain crops, primarily on marginal lands in dry areas in temperate, subtropical and tropical regions. Some of the common millets available in India are Ragi (Finger millet), Jowar (Sorghum), Sama (Little millet), Bajra (Pearl millet), and Variga (Proso millet). The earliest evidence for these grains has been found in Indus civilization and was one of the first plants domesticated for food. It is grown in about 131 countries and is the traditional food for around 60 crore people in Asia and Africa. India is the largest producer of millet in the globe. It accounts for 20 percent of global production and 80 percent of Asia's production. In the international year of millets, it is worth examining the cultivation, productivity and promotion of cultivation of millets with the following specific objectives.

- (i) to study the present scenario and the importance of finger millet (ragi) cultivation.
- (ii) to examine the constraints of finger millet cultivation in Karur district.
- (iii) to analyse the cost and returns of finger millet cultivation in the study area.

Methodology

Proportionate random sampling method is used and 120 finger millet sample respondents (90 male and 30 female) have been selected in ten villages in Karur district of Tamil Nadu. The data collected through personal entry methods were tabulated and analyzed to derive inferences.

Results and Discussion

Table 1: Factors behind the cultivation of finger millet crop

Sl. No	Reasons	Frequency	Percentage
1	Easy maintenance	32	26.67
2	Lack of water	29	24.16
3	Lack of labour force	23	19.17
4	Profitability	16	13.33
5	Permanent income	20	16.67

Source: Primary data

The interpretation is that among the sample respondents 26.67 percent are growing finger millet crop in the study area due to easy maintenance, 24.16 percent of the respondents are growing because of scarcity of water availability in the Karur district, 19.17 percent of the respondents are growing finger millet because of non-availability of labour force, 13.33 percent of the respondents are growing finger millet to earn profit and some of the respondents are growing finger millet for daily food system and also for the permanent income. Hence, it is inference that most of the respondents are growing finger millet crop due to easy maintenance as it requires less water than other crops.

Table 2: Constraints of finger millet cultivation farmers

Sl. No	Reasons	Frequency	Percentage	Rank
1	Inadequate credit facilities	19	15.83	IV
2	High cost of fertilizers	23	19.17	III
3	High cost of labour	26	21.67	II
4	Non-availability of labour in peak season	35	29.16	I
5	Water scarcity	17	14.17	V

Source: Primary data

Among the factors, the majority of the finger millet growers (29.16 percent) expressed that non-availability of labour during peak season as the main constraint with the rank of one. The second ranked constraint was the high cost of labour found among 21.67 percent of the finger millet growers. Since the agricultural labourers were moving to other sectors. Also, some government initiatives implemented in the study area for employment guarantee have an impact on the availability of labour for agriculture works. Hence, these factors also lead to an increase in labour costs. The next two constraints reported with the ranks of III and IV were the high cost of fertilizers (19.17 percent) and inadequate credit facilities (15.83 percent) respectively. Hence, some farmers felt that the cost of fertilizers was high and credit facilities were less for the purchase of fertilizers. Water scarcity was reported as a constraint by 14.17 percent of the finger millet growers with no issue with transport and supply of fertilizers.

Land Holding and Cropping Pattern

More specifically in Tamil Nadu, about 98 percent of the landholdings was rainfed and only 2 percent of the land had irrigated ragi, indicating very less priority of the crop in the irrigated lands. The average landholding of the ragi growers was found to be ranging from 1.21 hectare to 2.69 hectare in the study area, with Tamil Nadu farmers cultivating this crop in a larger area, compared to their counterparts in other states. It was also observed that in almost all the states, the farmers were found cultivating this crop mostly under rainfed conditions, except in Tamil Nadu where it was being cultivated under irrigated conditions significantly.

Resource Use Pattern in Ragi Production

The study revealed that the seed rate practiced by the ragi growers in the study area varied from 5.8 kg/ha to about 30.7 kg/ha. The farmers in Tamil Nadu were found using 30.7 kg seeds per hectare, followed by those in Andhra Pradesh (14.4 kg/ha), Karnataka (10.8 kg/ha) and Maharashtra (5.79 kg/ha). These findings were due to the variation in the method of sowing followed by the ragi growers, who followed direct sowing in Tamil Nadu as practiced by the farmers, while about equal number of farmers followed both direct seeding and transplanting in Andhra Pradesh and Karnataka.

Cost and Returns of Ragi Cultivation

The cost of cultivation was worked out based on Commission on Agricultural Costs and Prices (CACP) concepts, and the details on costs and returns are furnished below. It could be observed from the data that Cost A1, which comprise all the out-of pocket cost items were found to be highest in Karnataka (Rs.51,617 per hectare under irrigated condition and Rs. 42,692 per hectare under rainfed condition, respectively), followed by Tamil Nadu (Rs. 27,729 per ha), Maharashtra (Rs. 25,735 per ha) and Andhra Pradesh (Rs. 13111 per ha). Hence, Cost A2 remained the same for all the other states. Similar trend was observed in case of Cost B, where it was found highest in Karnataka (Rs. 56,617 per ha under irrigated condition and Rs. 47,692 per ha under rainfed condition, respectively), followed by Tamil Nadu (Rs. 29,378 per ha), Maharashtra (Rs. 27,261 per ha) and Andhra Pradesh (Rs. 14,320 per ha). Similarly, Cost C was found to be highest in Karnataka (Rs. 62,057 per ha under irrigated condition and Rs. 51885 per ha under rainfed condition, respectively), followed by Maharashtra (Rs. 43,772 per ha), Tamil Nadu (Rs. 36,253 per ha) and Andhra Pradesh (Rs.25,269 per ha). On the other side, the wage rates were relatively less for human labour in Andhra Pradesh, implying less cost on family labour. After accounting for all the cost components, farmers in Maharashtra and Tamil Nadu were incurring loss in the cultivation of ragi. Finally, the cost of production per kg of ragi was worked out to be highest in Karnataka (Rs. 25.56 under rainfed condition), followed by Maharashtra (Rs.18.12), while it was Rs. 16.62 in Karnataka (under irrigated condition), Rs. 12.48 in Tamil Nadu. However, if we impute the value of family labour, it makes loss to the farmers in Tamil Nadu, indicating that the family labour is spent on this farming ignoring better opportunity cost elsewhere. In other words, that ragi grower of Tamil Nadu doesn't appear to make gainful employment in their farm. However, they might be continuing ragi cultivation for their consumption purpose.

Constraints to Increased Millet Cultivation and Consumption

Millets were earlier cultivated in an area of 35 million hectares of land. But it is now being grown in only 15 million hectares. The reasons for a shift in land use include low yields, time-consuming and laborious tasks in

the processing of millets which are undertaken by women. Additionally, very little was marketed, and a tiny share of grain was processed into value-added products. In 2019-20, the total off take of cereals through the Public Distribution System (PDS) and the Integrated Child Development Scheme (ICDS) and also school meals was around 54 million tonnes. If about 20 percent of rice and wheat were to be replaced by millet, the state would have to procure 10.8 million tonnes of millet.

Over the last decade, the production of sorghum (jowar) has fallen, the production of pearl millet (bajra) has stagnated, and the production of other millets, including finger millet (ragi), has stagnated or declined. Many people in India are not aware of the health benefits of millets, leading to low demand. Millets are often priced higher than traditional cereals, making them less accessible to low-income consumers. Millets are not widely available in traditional and modern (e-commerce) retail markets, making it difficult for consumers to purchase them. Some people believe that millets have a bland or unpleasant taste, which discourages them from consuming them. The cultivation of millets is often associated with low yields and low profitability, which can discourage farmers from growing them. Rice and wheat are staple foods in India and are widely available, making it difficult for millets to compete in the market. India has not provided enough support to promote the cultivation and consumption of millets, which has limited their growth.

Conclusion

From the study, we can conclude that the major constraints faced by the finger millet growers were lack of awareness about soil testing, difficulty in soil sample collection and understanding the soil test based fertilizer recommendations, the bulkiness of the organic inputs, lack of awareness and knowledge on NPK fertilizers, micronutrient fertilizers and bio fertilizers, unavailability of labourers in the peak season and the high cost of labour. To overcome these constraints the state department of agriculture has to create awareness among the farmers about the benefits and necessity of soil testing and the results and recommendations must be in the form of easily understandable by the farmers, preferably it should be in local language and it has to be given on time. The number of soil

testing laboratories and mobile soil testing units has to be increased in the block level. A mobile app can be developed by the government to assist the farmers in soil testing, documentation and delivery of the test results to the farmers in time. To improve the knowledge of the farmers on nutrient management and other crop production practices a pocket diary can be made by the government in the local language and distributed to the farmers. Labour availability is the major problem; the government has to ensure the availability of labour for agriculture through some policies like utilizing the labour source from the employment guarantee scheme. By implementing the above mentioned suggestions the constraints described in this study can be overcome. Hence, the adoption level of nutrient management practices among ragi growers can be improved.

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