An analysis of constraints faced by the farmers and intermediaries in cultivation and value addition of pineapple in Manipur State, India

ABSTRACT

Aims: With many Manipur farmers depending on pineapple cultivation, it was essential to understand the constraints faced by the farmers in pineapple cultivation. Thus, the study aimed to identify the constraints on pineapple cultivation and value-addition activities in the State of Manipur.
Study design: Manipur was purposively selected for the study. Totally three major pineapple growing districts of Manipur viz Senapati, Churachandpur, and Thoubal were considered, 120 pineapple farmers and 60 intermediaries were interviewed with the help of a well-structured questionnaire for collection of suitable information.
Methodology: The Garrett ranking technique was used to analyze the data
Results: Lack of awareness on production technology, lack of seasonal labour, lack of physical facilities for processing, lack of training/awareness on pineapple processing, less government support, lack of cold storage and lack of metallic and link roads were the major constraints faced by the pineapple farmers and intermediaries of Manipur.

Keywords: Pineapple, cultivation, value addition and constraints

1. INTRODUCTION

Manipur could be regarded as one of the areas with the best conditions for horticultural crops. The State has rich sources of different horticulture crops i.e. various kinds of fruits, vegetables, spices, medicinal plants, ornamental plants, and aromatic plants. Out of all the fruits grown in Manipur, pineapple production is the highest. It is cultivated in all nine districts of Manipur due to the favorable agro-climatic conditions. 'Kew' and 'Queen' varieties of pineapple are extensively grown in Manipur (Girija et al., 2022). One of the top-producing states for pineapples in India's northeast is Manipur. With 3724 hectares planted in pineapples, Senapati was Manipur's highest pineapple-growing district in 2018–19, generating 29067MT (Government of Manipur, 2014). Economically the fruit had also become the backbone of a sizeable section of farmers who had been cultivating them as their major source of income (Chanu et al., 2014).

Manipur is extremely suitable for continuous processing and export due to the eight-month availability of pineapples. Among the state's perishable horticulture produce, pineapple fruits represented the biggest amount of wasted produce due to inadequate market infrastructure, transportation networks, and processing facilities (Sema et al., 2011). The processing of pineapples can encourage local entrepreneurial activities as a reliable source of income. In a market economy, entrepreneurs play a crucial role in energizing and stimulating all economic activities. Such marketing personnel can be attracted to successful business launches by a variety of value-added pineapple products with a large market potential, such as juice, squash, jelly, jam, Osmo-dehydrated rings, and bars (Prakash et al., 2019). Hence, it is imperative to discuss the constraints faced by the farmers, processors, and traders of pineapple to facilitate the state to draw up convenient policies and upgrade production. The study aimed to identify the constraints in pineapple cultivation and value-addition activities in the state.

2. METHODOLOGY

To fulfill the objectives of the study, three major districts of Manipur producing pineapple were selected, namely Senapati, Churachandpur, and Thoubal. Secondary data for each district were collected from the State Horticulture Department. Total 120 pineapple farmers (40 farmers from each district) were selected randomly, and also 60 intermediaries were interviewed with the help of well-structured questionnaire for collection of suitable information.

2.1 Henry-Garrett Ranking Technique

The farmers and intermediaries' constraints were ranked using the Garrett ranking technique. The orders of merit by the respondents were converted into ranks by using the following formula;

Percent position=$\frac{100(Rij-0.05)}{Nj}$ (1)

Where, *Rij* is ranking position and *Nj* is total number of ranks

To estimate the mean value, all of the respondents' scores for each factor were summed after referring the Garrett's table to convert the anticipated percent position into a score. The mean scores were arranged in descending order. The attribute with the highest mean score was considered the most important one and the first rank was given to it and the others followed in order.

3. RESULTS AND DISCUSSION

3.1 Constraints faced by farmers in pineapple production

Different constraints faced by the farmers in pineapple production were identified and ranked using Garrett's ranking technique and the details are presented in Table 1.

Table 1: Constraints faced by the farmers in pineapple production

Sl. no	Production Constraints	Mean score	Rank
1	Lack of awareness on Production technology	50.19	I
2	Lack of seasonal labour	39.95	II
3	Lack of Capital	36.55	III
4	Poor Irrigation facilities	35.3	IV

From the above table 1, lack of awareness on production technology (mean score 50.19) was identified as the major constraint faced by the farmers. The majority of the planting materials were procured from other farmers. There were no nurseries in the state that used tissue cultures. None of the respondents stated that they had purchased planting materials from a public or private organization. Additionally, none of the farmers who responded reported any treatment of planting material. Many methods, particularly those pertaining to nutrition management and post-harvest management, are not known to farmers. Lower productivity was the result of improper nutrition management.

The next major constraint faced by farmers was lack of seasonal labour (mean score 39.95). As mostly pineapple is cultivated in hill slopes in Manipur, manual labour is used extensively, but there is always a shortage of labour during peak seasons. Mulching aids in the soil's ability to retain moisture, which makes it useful in rainfed conditions where pineapples are grown. Farmers, however, were not adequately implementing mulching procedures due of a labour scarcity.

Lack of Capital (mean score 36.55) was also one of the most important constraints as farmers owned small and fragmented land, and most of them are very poor. They needed funds for cultivation and meet labour charges. Many of them lacked Kisan Credit Cards and access to loans. The pineapple producers have limited awareness about agricultural loans, insurance, and other financial items. Farmers were discouraged from growing pineapples due to limited access to financing.

Poor irrigation facilities (mean score 35.3) was a constraint as there was no proper irrigation system in the selected areas. Farmers totally depended on rainfall for irrigation. The sample areas was located in the hilly region of Manipur, it was very difficult to arrange for irrigation facilities.

3.2 Post-harvest constraints faced by the farmers

The farmers in the study area carried out only primary value-addition activities such as simple drying and the making of pickles for household consumption. They wanted to produce value-added pineapple products on large scale but they had poor knowledge. The farmers did not take up any value addition of pineapples. The reasons for the same were identified, ranked, and are presented in Table 2.

Table 2: Post-harvest constraints faced by farmers

Sl.no	Post-harvest constraints	Mean score	Rank
1	Lack of training/awareness on pineapple processing	51.85	I
2	Lack of physical facilities for processing	38.09	II
3	Less government support	37.50	III
4	Lack of market and road connectivity	34.55	IV

From table 2, it could be observed that lack of training/awareness on pineapple processing (mean score 51.85) was the major constraint from the farmer's side for value addition. This was followed by lack of physical facilities for processing (mean score 38.09), to store the produce after harvest and processed. They felt that if they had access to facilities and training programs, processing of pineapple could be done easily by farmers and their families. Less government support (mean score 37.50) and lack of market and road connectivity (mean score 34.55) were some of the other constraints mentioned by the farmers. Inadequate connectivity not only increases costs, delays, and resource waste but also hinders timely farm operations. It was found that several of the linking roads become unreachable during periods of heavy rain, thus affecting transit. Farmers did experience transportation issues because the monsoon was the peak harvesting season. Transportation infrastructure was thus one of the major concerns for the marketing of produce in the regions.

3.3 Constraints faced by intermediaries in Marketing

Major constraints faced by the intermediaries in marketing the pineapple were listed, ranked and presented in the table 3.

Table 3: Constraints faced by intermediaries in Marketing

Sl. no	Marketing constraints	Mean score	Rank
1	Lack of cold storage	54.96	I
2	Lack of metallic and link roads	54.53	II
3	Seasonal price fluctuations	45.03	III
4	Quality deterioration due to handling	43.43	IV
5	Costly and unavailability of packaging materials	32.21	V
6	Lack of government regulated market	29.81	VI

Local retailers and aggregators were important stakeholders in pineapple value chains. Lack of cold storage (mean score 54.96) was identified as the major constraint faced by the intermediaries. After collecting the raw and fresh pineapple from the farmers, the intermediaries had difficulty in storing the produce as pineapples are highly perishable and they didn't have a proper storage facility. Lack of metallic and link roads (mean score 54.53) was the next problem faced by the intermediaries as the farms were located far from the market area and mostly in hilly regions. It was a difficult task in the procurement of the produce. Moreover, most of the roads were not made properly with metallic. During the rainy season, timely procurement and delivery were hindered as landslides were very frequent in the region.

Seasonal price fluctuations (mean score 45.03) and quality deterioration due to handling (mean score 43.43) were some of the major constraints. The farmers usually sold their produce per piece without weighing and during seasons they just reduced the price and sold it off to prevent perishability. So it was found difficult by the intermediaries to procure the produce at the right quality and price. As the packing materials were costly and unavailable it was difficult for the intermediaries to export or sell to other states, for which they need government support. They only used gunny bags and there was no pack house and collection centers in the study area.

4. CONCLUSION

Lack of awareness on production technologies (50.19) was identified as the major constraint faced by the pineapple farmers, so steps could be taken up to enhance the productivity level in the state. Lack of seasonal labour (39.95), over dependence on rainfall (35.3) are some of the major constraints faced by the farmers during production level. In the value addition of pineapple, farmers were facing problems like lack of training/awareness for pineapple processing (51.85), no physical facilities for processing (38.09) and lack of government support (37.50). Farmers are ready to learn techniques for value addition and hence, the government, extension workers, and NGOs should extend suitable support. The state should launch training and capacity-building initiatives, with an emphasis on production, post-harvest management, and processing since farmers wanted to learn value addition. Lack of cold storage (54.96) and transportation system (54.53) were the major constraints for intermediaries and so collection centers and pack houses should be constructed nearby the production centers. Cottage based micro and small pineapple processing units may be established in the area, through government policies.

Consent
As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

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