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Major constraints faced by paddy seed growers in Sivasagar district of Assam

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Abstract

The study was carried out to identify the challenges faced by the seed producers of Sivasagar district who play a very important role in supplying quality paddy seed within the district and adjoining areas. To assess the constraints, a total of 80 respondents were selected for the study through random sampling, comprising of 60 numbers of seed grower from three blocks of the district and 20 numbers seed dealer of the district were also selected to understand the marketing gap. These responses were analyzed by Garret's ranking method to identify and prioritize the most challenging constraints. Most challenging constraint faced by seed producers were analyzed as assured market for the produced seeds (Garrett score 79), lack of farmer's friendly registration process for seed producer (72.5). Similarly, unprocessed seed (75) is found most challenging constraint for getting a market. The findings emphasize the need of minimizing the constraints by socio-economic upliftment, technology support and by maintaining basic standard of seed production.

Keywords: Paddy, seed grower, constraints, challenges, respondents

Introduction

Rice is the primary staple food for nearly half of the world's population, sustaining over 3.5 billion people and serving as a crucial source of daily caloric intake across Asia (Mohidem *et al*, 2022) ^[1]. Rice is the most important food crop in Assam. It occupies 2.5 million ha area in Assam with a production of 5.3 million ton and contribute 96% of Assam's total food grain production (Statistical handbook, 2022). At present, Assam is self sufficient in paddy production; but with increasing population and growing demand of paddy in national market, there is potentiality of higher paddy production. Seed is the vital factor of crop production. Use of quality seeds of improved varieties is necessary to increase crop productivity and income of small farmers. Timely supply of sufficient quantity of quality seeds of high yielding varieties increases crop yields by 15-25% and it can be further raised up to 45% with timely applications and efficient management of other inputs such as fertilizer, irrigation water and pesticides. Seeds, as technological carriers, not only facilitate the realization of the potential of different crop varieties but also enable effective crop management practices (Chauhan, 2020) ^[3]. The quality of seeds has been a focal point in Indian agriculture, with studies emphasizing the importance of ensuring the availability of quality seeds to farmers at affordable prices (Chouhan, 2016). Benefits of using quality seed facilitate higher percentage of seed emergence, minimize replanting, enhance resistance to stress and diseases resulting uniform ripening, which confirms more uniformity in the harvested grain. And most importantly

there will be less mixture and that can mean a higher market price.

Sivasagar district is of the most productive paddy growing district of Assam. In Sivasagar district, the productivity of rice has recorded an average of 53.17qt/ha against the average yield 32.17qt/ha at farmers' field (Bordoloi *et al.*, 2022) ^[5]. So, there is scope to increase rice productivity in the district supplying quality seed to the farmers. On continuous effort of KVK Sivasagar through numbers of awareness programme, farmers of the district are adopting seed replacement technology. Sources of paddy seeds in the district are KVK, Sivasagar, seed dealers of the district and small scale farmers producing seeds individually or under FPC banner. With the increasing demand of the quality seed in the district, many farmers are coming forward for production of quality seed in the district. But these small scale seed producers are facing lots of constraints to get the proper market and to get benefits of quality seed production. This study is done to identify the constraints faced by the seed growers of Sivasagar district and to understand the gap between the seed growers and seed dealers of the district.

Materials and Methods

The study was carried out in Sivasagar district of Assam, where numbers of paddy seed growers have increased in recent years. The district is situated in Assam between 94° 25' to 95° 22' E longitudes and 26° 45' to 27° 15' N latitudes. A total of 80 respondents were selected for the study through random sampling, comprising of 60 numbers of seed grower from Demow, Gaurisagar and Nazira block

of the district. To understand the marketing gap, 20 numbers seed dealer of the district were also selected for the study. The study was conducted through structured questionnaires, on site visit and personal interview to get the primary information straight from the respondents.

Henry's Garrett Ranking technique: The constraints of seed producers and seed dealers were analyzed using Garrett's ranking technique (Garrett and Woodsworth, 1969) ^[6]. The ranks achieved by each respondent were converted into per cent position by using formula:

$$\text{Percent position} = 100 \times \frac{R_{ij} - 0.5N_j}{N_j}$$

Where, R_{ij} = Rank given to i th constraint by the j th individual and

N_j = Number of constraints ranked by the j th individual.

The estimated percent positions were converted into scores using the Garrett's table. The mean score values obtained

for analyzed factor were tabulated. The constraint found the highest mean value was considered as the most important one and the others were followed.

Results and Discussion

The constraint analysis of the seed growers shows significant challenges in terms of socio-economical condition as well as technologically. Assured market, Non availability of labourer on time, Small land holding, High cost involved in seed production, Reluctant to produce quality seed etc are most important socio-economic factors affecting the seed growers (Table:1). From the analysis, it is found that assured market for the produced seeds with Garrett score 79 is the most challenging constraints of the seed producers which indicates market instability. Non availability of labourer on time (78.05) and small land holding (77.7) are next most significant social issues, which indicate limitation of workforce and resources.

Table 1: Socio-economic constraints faced by Seed growers (n=60)

Sl. No.	Constraints	Garret score	Mean score	Rank
1	High cost involved in seed production	4596	76.6	4 th
2	Small land holding	4662	77.7	3 rd
3	Disturbance from stray cattle	3228	53.8	9 th
4	Non availability of source of certified seed	4365	72.75	7 th
5	Non availability of labourer on time	4683	78.05	2 nd
6	Reluctant to produce quality seed	4491	74.85	5 th
7	Assured market	4740	79	1 st
8	Discontinued supply	3408	56.80	8 th
9	Poor communication	3224	53.73	10 th
10	Lack awareness of importance of quality seed among farmers	4394	73.23	6 th

High cost involved in seed production (76.6) is another constraint rank high indicating involvement of huge money in purchasing inputs for cultivation. Reluctant to produce quality seed (74.8), lack awareness of importance of quality seed among farmers (73.23), non availability of source of certified seed (72.75), discontinued supply (56.8) were found some challenging constraints. Disturbance from stray cattle (53.8) and poor communication (53.73) were found least challenging constraints faced by seed growers.

Similar results were obtained by Chandan *et al.*, 2023 ^[7] and Raj *et al.* 2008 ^[8] where overall 84.40 per cent quoted non availability of seed at proper sowing time it was ranked I in Jharkhand situation. Second one shortage of labour which

was found 79.82 per cent and ranked II. Third one is Small land holding which was found 72.48 per cent and ranked III. In a study carried out in Telangana, major constraints faced by rice growers were unfavourable weather conditions which ranked first with Garrett mean score around 85, followed by higher labour wage (Jayaprade *et al.*, 2023) ^[9]. Patel, Jain and Prasad (2019) ^[10] studied the production constraints and high cost of production was the highest ranked constraint. As the land situation of Sivasagar district is favourable for paddy production with less input; constraints in the district are different from other states of India.

Table 2: Technological constraints faced by Seed growers (n=60)

Sl. No.	Constraints	Garret score	Mean score	Rank
1	Lack of proper training for seed production	2125	35.42	5 th
2	lack of awareness on variety selection for seed production	3484	58.07	3 rd
3	Reluctant to follow proper methods of seed production	2997	49.95	4 th
4	Lack of farmer's friendly registration process for seed producer	4350	72.5	1 st
5	Limitation of post harvest and storage facility	4095	68.25	2 nd

Technological constraints faced by seed growers were listed in Table 2. Registration process for seed producer found biggest technological constraint scoring 72.5 Garret score which signifies complexity of registration process through app in mobile. Due to complex nature of registration, most of seed producers were not able to get registration. Limitation of post harvest and storage facility (68.25) was

another technological constraint because of which mixing of varieties, high moisture content, pest infestation may happen. Lack of awareness on variety selection for seed production (58.07) ranked 3, which means some of the farmers had low awareness about the recent notified varieties. Reluctant to follow proper methods of seed production (especially buffer area, rouging etc) ranked 4th

position with Garret score 49.95. Lack of proper training for seed production (35.42) listed 5th as constraint as KVK Sivasagar has been imparting 32 numbers of training as well 27 numbers demonstrations on paddy seed production in the district.

Table 3: Constraints faced by input dealers in purchasing seed from seed grower (n=20)

Sl. No.	Constraints	Garret score	Mean score	Rank
1	Seeds not properly cleaned	1500	75	1 st
2	Irregular supply of seed	1155	57.75	4 th
3	Disagreement over price	789	39.45	5 th
4	Packaging not attractive	1170	58.5	3 rd
5	Small scale supply from producer	1215	60.75	2 nd

A major share of produced paddy seed is sold by the input dealers of the district. But the marketing channel is not working very well in the district because of various constraints faced by input dealers (Sharma, 2017) ^[11]. Therefore, the study extended with 20 numbers of input dealers of the district to identify the constraints (Table 3). Seeds obtained from the farmers was found the most challenging constraint (75 Garret score) according to the input dealers as the seeds were not properly cleaned. It is also recorded that the score is much higher than the second ranked constraint small scale supply from producer (60.75). Non attractive packaging (58.5), irregular supply of seed (57.75) and disagreement over price (39.45) were also recorded accordingly. Similar study was done by Sahu *et al.*, 2026 ^[12], stated as financial constraint as ranked 1st.

Conclusion

The study highlights that the small seed growers of Sivasagar district face various constraints which effect production, registration process and getting a market for the seed they produce. An assured market gives the confidence to the seed producers to produce quality seed. Seed certification agencies should simplify the registration process so that farmers can register themselves in a short period of time. Also study reveals that on cleaning properly and maintaining the seed quality, farmers will be able to establish a good marketing channel with the input dealers.

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