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Economic appraisal and constraints in paddy seed production in Haryana

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Abstract

The present study aimed to assess the economic analysis of paddy seed production and production and marketing constraints faced by farmers in Haryana, The study was conducted in Kurukshetra, Karnal and Kaithal districts of Haryana. A total of 30 farmers were selected from these three districts and 10 farmers from each district were sampled. The results of the study revealed that the overall average per hectare total cost and variable cost of paddy seed production were Rs. 141876 and Rs. 58451, respectively. The overall average gross return of paddy seed production was Rs. 174073 per hectare. The return over variable cost and net return were Rs. 115623 and Rs. 32197 per hectare, respectively. Moreover, the value of overall B-C ratio was 1.23 which indicated the economic viability of paddy seed production in the study area. The total cost involved in processing of paddy seed was Rs. 329.30 per quintal. And net price or margin of processor in paddy seed processing was Rs. 2318 per quintal. Major production problems were lack of technical guidance on seed production practices followed by lack of adequate skilled manpower, high dose of fertilizers *etc*. and major marketing problems were delayed payments made by companies'/marketing agencies, dependence of farmers on companies for inputs and technical advices, lack of awareness about fair average quality, lack of processing facilities etc.

Keywords: Economic appraisal, constraints, paddy, seed production, processing

Introduction

Rice is an important staple crop providing 66-70% of calorie intake to the consumers. The United Nations General Assembly, in a resolution declared the year of 2004 as the "International Year of Rice", which has tremendous effect on food security. It very eloquently upheld the need to heighten awareness for the role of rice in alleviating poverty and malnutrition (Barah and Pandey, 2005) [4]. Rice is grown in around 46.38 million hectares area in India with a production of 130.29 Million tonnes and an average yield of 2.809 tons per hectare during 2021-22 (Agricultural statistics at a glance 2022). Seed is a crucial, vital, basic and important input for attaining sustained growth in agriculture production and productivity. A sustained increase in agriculture production and productivity has dependent on the development of new improved variety, timely and adequate supply of quality seed to the farmers. It is estimated that the direct contribution of quality seed alone to the total production is about 15-20% depending upon the crop and it can be further raised up to 40% with effective management of other inputs (Anonymous, 2007) [3]. A superior quality seed not only increases productivity per unit area, but it also helps in producing uniform crops without any admixtures which is important for obtaining high prices on the market. Quality seed production is a specialized activity. The general farm produce retained for seed cannot be substituted for quality seed; farm saved seed generally lacks genetic vigour and has poor germination (Singh, *et al.*, 1990) [15]. Seed of paddy has significant share in its cost of cultivation; therefore the economics of paddy seed production has impacted both seed producers as well as its users. There are several studies pertaining to economics of paddy cultivation for grain production (Agarwal, *et al.*, 2018 and Churpal, *et al.*, 2015) [1, 6] and seed production in other crops (Pal, *et al.*, 2016 and Pal, *et al.*, 2016) [9, 10]. But only a few studies related to economics of paddy seed production (Kumar, 2017 and Sahu, 2017) [8, 13].

Materials and Methods

The study is based on primary data collected from Kurukshetra, Karnal and Kaithal districts of Haryana. These districts have been selected purposively as it is one of the important districts under paddy cultivation in the state. The list of certified seed growers of paddy in these districts have been obtained from Haryana Seed Certification Agency. From the list, 30 certified seed growers of paddy have been selected randomly from these three districts. Ten farmers were selected from each district. Primary data were collected by personnel interview with the respondents using a well-structured and pre-tested interview schedule.

Result and Discussion

Cost and return of paddy seed production in Haryana

The item wise break-up of cost of paddy seed production in

Kurukshetra, Karnal, Kaithal districts and overall average are presented in table 1. Per hectare total cost of paddy seed production in Kurukshetra, Karnal and Kaithal districts were Rs. 142010, 141672 and Rs. 141946, respectively. Total variable cost was Rs. 59123, 58159 and Rs. 58070 in Kurukshetra, Karnal and Kaithal districts, respectively. Expenditure on field preparation, seed, nursery raising & transplanting, manure & fertilizers, plant protection chemicals, irrigation, rouging, harvesting, and registration fees were the important component of total variable cost. The expenditure incurred on field preparation was the highest and to be workout (8.78, 8.91 & 8.98%) followed by plant protection chemicals (8.43, 8.19 & 8.07%), seed, nursery raising & transplanting (7.31, 7.41 & 7.47%), manure & fertilizers (7.27, 6.86 & 6.71%), harvesting (4.20, 4.11 & 4.14%) and irrigation (3.23, 3.18 & 3.17%) in Kurukshetra, Karnal and Kaithal districts, respectively. Similar observations were also recorded by Pal *et al.*, (2020) [11] and Sahu, *et al.*, (2022) [12].

Similarly, rental value of land and management & risk factor were the major components of fixed cost, which accounted for Rs. 73625 & Rs. 8547, Rs. 74375 & Rs. 8438 and Rs. 74750 & Rs. 8426 per hectare in Kurukshetra, Karnal and Kaithal districts, respectively. The gross return of paddy seed production in Kurukshetra, Karnal and Kaithal districts was Rs. 177210, Rs. 171034 and Rs. 173975 per hectare, respectively. The return over variable cost and net return were Rs. 118088 & Rs. 35201, Rs. 112875 & Rs. 29362 and Rs. 115905 & Rs. 32029 per hectare in Kurukshetra, Karnal and Kaithal districts, respectively. The cost benefit ratio in Kurukshetra, Karnal and Kaithal districts was 1.25, 1.21 and 1.23, respectively. Sinha and Nath (2013) [17] were also found that the experiment of paddy seed production the benefit cost ratio of commercial grain produced was only 1.7: 1, whereas paddy seed had higher cost benefit ratio of 2.5:1.

Table 1: Cost and return of paddy seed production in Haryana (Rs./ha.)

S. No.	Particulars	KKR		Karnal		Kaithal		Overall	
		Qty	Value	Qty	Value	Qty	Value	Qty	Value
1	Field Preparation	5.3	12475 (8.78)	5.4	12625 (8.91)	5.5	12750 (8.98)	5.4	12617 (8.89)
2	Seed (Kg.), Nursery raising & transplanting	13.5	10384 (7.31)	13.9	10500 (7.41)	13.875	10598 (7.47)	13.8	10494 (7.40)
3	Manure & fertilizer		10324 (7.27)		9717 (6.86)		9521 (6.71)		9854 (6.95)
4	Irrigation	15.3	4590 (3.23)	15.0	4500 (3.18)	15.0	4500 (3.17)	15.1	4530 (3.19)
5	Plant protection		11975 (8.43)		11600 (8.19)		11450 (8.07)		11675 (8.23)
6	Registration fees		250 (0.18)		250 (0.18)		250 (0.18)		250 (0.18)
7	Roguing		1163 (0.82)		1175 (0.83)		1163 (0.82)		1167 (0.82)
8	Harvesting		5963 (4.20)		5825 (4.11)		5875 (4.14)		5888 (4.15)
9	Interest on working Capital		1999 (1.41)		1967 (1.39)		1964 (1.38)		1977 (1.39)
10	Variable cost		59123 (41.63)		58159 (41.05)		58070 (40.91)		58451 (41.20)
11	Management & risk factor		8547 (6.02)		8438 (5.96)		8426 (5.94)		8470 (5.97)
12	Transportation		715 (0.50)		700 (0.49)		700 (0.49)		705 (0.50)
13	Rental value of land		73625 (51.85)		74375 (52.50)		74750 (52.66)		74250 (52.33)
14	Total Cost		142010 (100.00)		141672 (100.00)		141946 (100.00)		141876 (100.00)
15	(a) Main production (qt)	74.3	174710	71.6	168534	72.9	171475	72.9	171573
16	(b)By Product		2500		2500		2500		2500
17	Gross return		177210		171034		173975		174073
18	Return over variable cost		118088		112875		115905		115623
19	Net return		35201		29362		32029		32197
20	B: C		1.25		1.21		1.23		1.23

Note: Figures in parentheses indicate the percentages to the total cost

Similarly, overall average per hectare total cost and variable cost of paddy seed production were Rs. 141876 and Rs. 58451, respectively. The expenditure incurred on field preparation was the highest and to be workout (8.89%) followed by plant protection chemicals (8.23%), seed, nursery raising & transplanting (7.40%), manure & fertilizers (6.95%), harvesting (4.15%) and irrigation (3.19%). Similarly, rental value of land and management & risk factor were the major components of fixed cost, which accounted for Rs. 74250 & Rs. 8470 per hectare, respectively. The overall average gross return of paddy seed production was Rs. 174073 per hectare. The return over variable cost and net return were Rs. 115623 and Rs. 32197 per hectare, respectively. Moreover, the value of overall B-C ratio was 1.23 which indicated the economic viability of paddy seed production in the study area.

Operational cost involved in paddy seed processing

The operational cost incurred by processors in the paddy seed processing are presented in table 2. The total cost involved in processing of paddy seed was Rs. 329.30 per quantal. The major operations involved in the processing of paddy seed were human labour (drying of paddy seed, sieving), bagging + storage, seed processing, seed treatment, seed certification & seed testing fees, bagging + tagging, transportation and electricity cost. The highest cost involved in bagging + tagging (28.85%), followed by transportation cost (22.78%), seed processing cost (17.31%), bagging + storage cost (15.88%), seed certification, testing fees and electricity cost (2.43%).

Net margin received by processor in paddy seed processing is presented in table 3. The total cost incurred in the processing of paddy seed and purchase price of paddy seed was worked out to be Rs. 2682 per quintal. The Sale rate of paddy seed in the market was Rs. 5000 per quintal. The net price or margin of processor in paddy seed processing was Rs. 2318 per quintal. Similar observations were also recorded by Singha, (2012) [16].

Table 2: Operational cost in processing of paddy seed

S. No.	Particulars	Cost Rs./q.	Percentage
1	Human labour cost (Drying of paddy seed, Sieving)	28.50	8.65
2	Bagging + storage	52.30	15.88
3	Seed Processing cost	57.00	17.31
4	Seed treatment	5.50	1.67
5	Seed certification and testing fees	8.00	2.43
6	Bagging + Tagging	95.00	28.85
7	Transportation cost	75.00	22.78
8	Electricity cost	8.00	2.43
9	Total	329.30	100.00

Table 3: Net margin of processor in paddy seed processing

S. No.	Particulars	Rs./q.
1	Purchase price of processor	2353
2	Processing cost	329
3	Total cost	2682
4	Sale rate of paddy seed	5000
5	Net price received by processor	2318

Production and marketing constraints faced by paddy seed growers: The production and marketing constraints faced by paddy seed growers are presented in table 4. Major production problems were lack of technical guidance on seed production practices (70.00%) as revealed by of the growers followed by lack of adequate skilled manpower (60.00%), high dose of fertilizers in seed production (50.00%), lack of contact with scientists and research stations for source seed (40.00%) and requirement of high investment- Risk aversion were reported by 20.00 percent of the growers. Similar observations were also recorded by Bhavani, *et al.,* (2021) [5] and Jayaprada *et al.,* (2023) [7].

Table 4: Production and marketing constraints faced by growers in paddy seed production, (N=30)

S. No.	Particulars	No. of farmers	Percentage
A	**Production constraints**		
1	Lack of technical guidance on seed production practices	21	70.00
2	Lack of adequate skilled manpower	18	60.00
4	High dose of fertilizers in seed production	15	50.00
5	Lack of contact with scientists and research stations for source seed	12	40.00
6	Requirement of high investment -Risk aversion	6	20.00
B	**Marketing constraints**		
1	Delayed payment by companies /marketing agencies	24	80.00
2	Dependence of farmers on companies for inputs and technical advices	21	70.00
3	Lack of awareness about fair average quality	11	36.67
4	Lack of processing facilities	9	30.00
5	Less incentives given by companies /marketing agencies	6	20.00

Similarly, major marketing problems were delayed payments made by companies'/marketing agencies was the most prominent as revealed by 80.00 percent growers followed by dependence of farmers on companies for inputs and technical advices (70.00%), lack of awareness about fair average quality (36.67%), lack of processing facilities (30.00%) and less incentives given by company's/market agencies (20.00%). Similar observations were also recorded by Sahu, *et al.,* (2021) [14].

Conclusion

The study concluded that the major components of variable cost in paddy seed production were expenditure incurred on field preparation was the highest followed by plant protection chemicals, seed, nursery raising & transplanting, manure & fertilizers, harvesting and irrigation in all the three districts and overall, respectively. Similarly, rental value of land was the highest followed by management & risk factor were the major components of fixed cost in all the three districts and overall. The cost benefit ratio was more than one in all the three districts and overall which indicated that paddy seed production in the study area was profitable. Processor also received high margin in paddy seed processing. Major production problems were lack of technical guidance on seed production practices followed by lack of adequate skilled manpower, high dose of fertilizers *etc*. Similarly, major marketing problems were delayed payments made by companies'/marketing agencies, dependence of farmers on companies for inputs and technical advices, lack of awareness about fair average quality, lack of processing facilities etc.

References

1. Agarwal PK, Yadav P, Mondal S. Economic analysis of cost and return structure of paddy cultivation under traditional and SRI Method: A comparative study. International Journal of Agriculture Sciences. 2018;10(80):5890-5893.
2. Agricultural statistics at a glance. Government of India Ministry of Agriculture & Farmers Welfare Department

of Agriculture & Farmers Welfare Economics & Statistics Division; c2022.
3. Anonymous. DSR- Perspective Plan Vision 2025. ICAR- Directorate of Seed Research, Kushmaur, Mau, UP, India; c2007.
4. Barah BC, Pandey S. Rain fed rice production systems in Eastern India: An on farm diagnosis and policy alternatives. Indian Journal of Agricultural Economics. 2005;60(1):110-136.
5. Bhavani G, Sreenivasulu M, Ravinder Naik V. Constraint Analysis of Quality Seed Production in Telangana using Garrett's Ranking Technique. Journal of Community Mobilization and Sustainable Development. 2021;16(2):560-564.
6. Churpal D, Koshta AK, Choudhary VK. An economic analysis of rice cultivation and constraint in Dhamtari district of Chhattisgarh, India. Plant Archives. 2015;15(2):651-656.
7. Jayaprada Y, Lakshmi Prasanna PA, Lavanya T, Rathod S. Constraint analysis of paddy seed and grain production in Karimnagar district of Telangana using Garrett's ranking technique. International Journal of Statistics and Applied Mathematics. 2023;SP-8(5):258-262.
8. Kumar V. An economic analysis of seed production of paddy and chickpea in Mungeli district of Chhattisgarh [Thesis]. IGKV, Raipur; c2017.
9. Pal G, Radhika C, Singh RK, Udaya BK, Ram H, Prasad S, *et al*. An economic analysis of pigeonpea seed production technology and its adoption behavior: Indian context. The Scientific World Journal. 2016, 1-7.
10. Pal G, Radhika C, Udaya BK, Ram H, Prasad S, Rajendra, *et al*. A study on comparative economics of grain and seed production of groundnut in Karnataka, India. Journal of Experimental Agriculture International. 2016;14(5):1-9.
11. Pal G, Sripathy KV, Umesh R, Kamble SP, Kumar J, Kumari K, *et al*. An Economic Analysis of Paddy Seed Production in Mau District of Eastern Uttar Pradesh. Journal of Economics, Management and Trade. 2020;26(4):45-51.
12. Sahu H, Sahu B, Chandrakar MR, Joshi SK. Study on the cost and return of paddy seed production in Jaikopeshwar Nath Krishi producer company limited Gariaband district of Chhattisgarh. The Pharma Innovation Journal. 2022;SP-11(9):974-979.
13. Sahu K. An economic analysis of seed production of paddy in Raipur district of Chhattisgarh [Thesis]. IGKV, Raipur; c2017.
14. Sahu Y, Joshi SK, Baghel D, Sahu S, Chaudhary VK. To examine the management of paddy seed production program and find out the constraints in the production and marketing of paddy seed production. The Pharma Innovation Journal. 2021;SP-10(8):1160-1164.
15. Singh G, Asokan SR, Asopa VN. Seed industry in India- A management perspective. Oxford & IBH Publishing Co. (Pvt.) Ltd., New Delhi; c1990.
16. Singha K. Economics of paddy processing industry in India: a case of Karnataka. Scientific Journal of Agricultural. 2012;1(4):80-91.
17. Sinha S, Nath P. Economic comparison of paddy production using certified seed and commercial grain in north Bihar. Oryza. 2013;50(4):386-390.