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AN ECONOMIC ANALYSIS OF PRODUCTION OF PEARL MILLET (*PENNISETUM GLAUCUM*) IN JAIPUR DISTRICT OF RAJASTHAN

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ABSTRACT: The present study entitled "AN ECONOMIC ANALYSIS OF PRODUCTION OF PEARL MILLE T IN JAIPUR DISTRICT OF RAJASTHAN" was conducted in the year 2018-19 with a sample of 120 respondents. The results indicated that the number of respondents who had Graduation education were more in Large size farms followed by medium and Small, and it was also observed that the number of illiterates were more in Large size farms followed by medium and Small size of farms. The average area per hectare holding in small size farms was 0.84ha, medium size was 1.79 ha and in large size farms were 2.75 ha. Total cost of cultivation of Pearl millet for small, medium and large size farms were (Rs.19330.6/ha, Rs 17752.7/ha and Rs 17482.6/ha) respectively. The Gross Returns obtained per hectare by Large size farms were high (Rs.32300/ha) as compare to medium and large size farms (Rs.30600/ha and Rs.28900/ha) respectively, and the Net returns per hectare were highest in Large size farms (Rs.14867.4/ha) as compare to the medium and Small size farms (Rs.12897.3/ha and 9619.4//ha) respectively. Input-output ratio per hectare was highest in large size farms (1:1.85) compare to medium and small size farms (1:1. 73 and 1:1.50), and the Marketable surplus for farmers in small, medium and large surplus were (6. 06%, 22.5200 and 33.93) respectively

KEY WORDS: Production cost and returns

India is the largest producer of pearl millet, both in terms of area (9.1 million hectares) and production (7.3 million tons), with an average productivity of 780 kg/ha during the last 5 years (WOAB, 2010). As compared to the early in 1980, the pearl millet area in India has declined by 26 per cent during the last five years, but production has increased by 19 per cent owing to 44 per cent increase in productivity. Pearl millet cultivation is done mainly during Kharif (rainy) season across the country. It is also grown to a lesser extent during Rabi (post rainy) season in Andhra Pradesh, Karnataka, Tamil Nadu and Pondicherry. Summer pearl millet cultivation varies from state to state with varying rainfall and soil type.

The marketing component is important to ensure remunerative prices to the farmers ' which will eventually work as an incentive for them to bring more area under cereals. Marketing can also help in inducing an element of incentive to fanner through participation in processing and distribution of Pearl millet through direct marketing, farmers market or cooperative marketing to get higher share in the consumer's price. Marketing innovations like group marketing will help in improving the bargaining powers of small and marginal farmers.

Pearl millet is a warm weather crop and grows best at 20 to 28^{o} C. Pearl millet is more tolerant to higher temperatures than probably any other cultivated cereal. The best temperature for the germination of pearl millet seed is 23 to 32^{o} C. Pearl millet seed does not germinate and grow well under cool soil conditions. The optimum rainfall requirement of pearl millet ranges 35-50 cm. But, pearl millet can be grown in areas, which receive less than 35 cm of annual rainfall. Prolonged spells of warm, rainless weather may be detrimental and may lead to reduced crop yields. Pearl millet is one of the toughest; drought tolerant crop and it maintain its popularity in the regions where the weather is very unpredictable. The Jaipur district is a major pearl millet growing district of Rajasthan. This district produced 4, 94,234 tonnes of pearl millet from 3, 17,293 hectares area with productivity of 1,558 kg/ha during the year 2017-18. The study of an economic analysis of production and marketing of pearl millet in Jaipur district of Rajasthan and data was collected in the year 2018-19 (Agarwal, PK. and Singh, O.P. (2015).

RESEARCH METHODOLOGY:

The present study was conducted in Jaipur District of Rajasthan; there are thirteen blocks in Jaipur district. Out of which Chomu block was purposively selected due to highest in area and production under Pearl millet crop cultivation. Further, out of Jaipur block seven villages were selected. For selection of respondents were categorized into three groups on the basis of area under Pearl millet cultivation in all the selected villages. Total selected farmers were divided into three categories e.g. small size farm group -

having area of cultivation less than 1 ha, Medium 1-2 ha and large above 2ha.

10% farms household were selected in all the three size farm groups in each selected village. Altogether total respondents were 120 viz., 58 small respondents, 41 medium respondents and 21 large respondents respectively.

The interview method used for data collection. Interview schedule was divided into major parts. First section included profile of respondents and second section was I question related to economic analysis of production of pearl millet.

RESULTS AND DISCUSSIONS:

Total cost incurred by the small size farms were high (Rs.19330.60/ha) as compared to medium and large size farms Rs.17752.7/ha and Rs.17482.6/ha). Sample average for total cost was Rs.18418.08/ha in different size of farms group. The cost of human labor, fertilizers, and machinery labor were the items of cost with major share in the variable costs, because most of the operations like harvesting, and weeding were human labor intensive operations. The distribution of pattern of operational cost under various inputs revealed that cost of human labor was the highest in the large size farms (Rs.1800./ha), compared to medium and small size farms (each Rs.1260/ha) respectively the data present in (table-1).

As Pearl millet would respond well with chemical fertilizer so the cost of farm yard manure used was ranged from Rs.600 and Rs.800 large and small size farm groups respectively where the expenditure on fertilizers were the highest (Rs.1100/ha) for small size farms as compared to medium size farms (Rs.975/ha) and large size farms (Rs.900/ha) respectively. Sample average for depreciation on fixed resources was Rs.645.41 interest on working capital Rs.559.68, interest on fixed capital was Rs.767.54 Land revenue paid to government was Rs.30 in different size of farms group. The cost of rental value of own land was Rs.7000/ha in different size of farms groups (Changule, R.B. and Gaikwad, GP 2013).

Table-1: Cost of Cultivation of Pearl millet crop per hectare in different Size of Farms Group, during gestation period. (Value in Rupees/hectare)

S.No	Different farm operation	Size of farm group			Sample average
		Small	Medium	Large	
1	Hired human labour	1260	1260	1800	1354.50
2	Bullock labour charges	1500	1200	1200	1345.00
3	Machinery labour charges	2000	1500	1500	1741.66
4	Cost of seedling	600	550	500	565.41
5	Cost of farm yard manure	800	650	600	713.75
6	Cost of chemical fertilizer	1100	975	900	1022.29
7	Cost of irrigation charges	-	200	200	103.33
8	Cost of plant protection charges	-	-	-	-
9	Miscellaneous charges	150	150	150	150
10	Interest on working capital@6-8%	592.80	518.80	548.00	559.68
11	Deprecation on fixed resources 10%	768	569	456	645.41
12	Land revenue paid to government	30	30	30	30
13	Interest on fixed capital @10%	779.8	759.9	748.6	767.54
14	Rental value of own land	7000	7000	7000	7000
15	Imputed value of family labor charges	2750	2390	1850	2330
	Total cost of cultivation	19330.6	17752.7	17482.6	18188.63

It reveals that Costs and Returns in Pearl millet cultivation in different size of farms group. Among different size of farms groups, the total cost of cultivation incurred by the small farms were high (Rs.19330.6/ha) as compared to medium (Rs.17752.7/ha) and large farms (Rs.17482.6/ha). Sample average for total cost of cultivation was Rs.18418.08/ha in different size of farms group. The gross returns obtained per hectare by large size farms were high (Rs.32300/ha) as compare to medium and small size farms (Rs.30600/ha and Rs.28900/ha) respectively (table 2).

The net returns per hectare obtained by large size farms were high (Rs.14867.4/ha) as compared to medium and small size farms (Rs.12897.3/ha and Rs.9619.4/ha) respectively. The average yield of Pearl millet in different size of farms group was 17.69q/ha. The yield was highest in case of large size farms 19q/ha as compared to medium 18q/ha and small size farms 17q/ha respectively. Average cost of production per quintal was Rs.1044.76/q. Gross Price per quintal was Rs.1700/q (Deshmukh Pawar et.al. 20013).

Table- 2: Cost and return in pearl millet crop per hectare in different size of farm group

(Value Rs/q)

S.No	Different farm operation	Size of farm group			Sample average
		Small	Medium	Large	
1	Total cost of cultivation	19330.6	17752.7	17482.6	18188.08
2	Yield in quintal per hectare	17	18	19	17.69
3	Gross return per hectare in rupees	28900	30600	32300	30075.83
4	Net return per hectare	9619.4	12897.3	14867.4	11657.75
5	Cost of production per quintal	1134.15	983.48	917.51	1044.76
6	Price per quintal	1700	1700	1700	1700
7	Input and output ratio	1:1.50	1:1.73	1:1.85	1:1.64

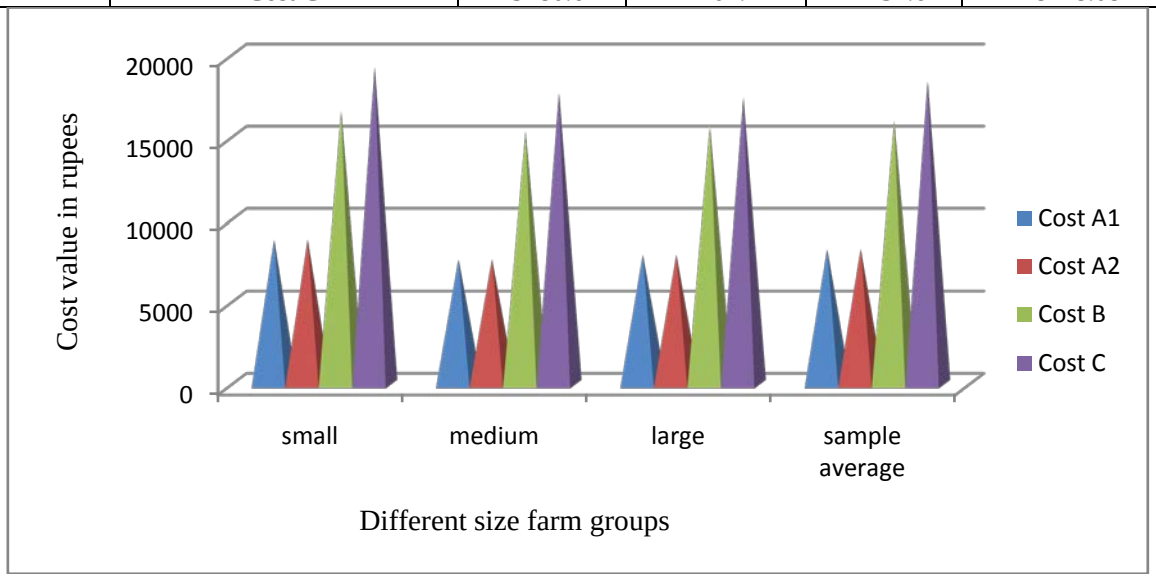
As compared cost Concepts is different size of farms group per hectare, the Cost A_1 was highest in small size farms (Rs.8800.8/ha) followed by medium size farms (Rs.7602.8/ha) and lowest in large size farms (Rs.7884/ha) respectively. Cost A_2 in small, medium and large size of farms groups was Rs.8800.8/ha, Rs.7602.8/ha and Rs.7884/ha respectively. Cost B was highest in small size farms (Rs.16580.6/ha) as compared to large size farms (Rs.15632.6/ha) and lowest in medium size of farms (Rs.15362.7/ha) respectively (Latha, K. B., 2003).

Cost C was highest in small size farms (Rs.19280.6/ha) and lowest in large size farms (Rs.17432.6/ha). Sample average for Cost A_1, Cost A_2, Cost B and Cost C was Rs 8231.04/ha, Rs.8231.04/ha, Rs.15998.58/ha and Rs.15668.08/ha in different size of farms group (table- 3).

Table 3: Cost concept in pearl millet crop per hectare in different size of farm group

(Value in rupees)

S.No	Different farm operation	Size of farm group			Sample average
		Small	Medium	Large	
1	Cost A_1	8800.8	7602.8	7884.0	8231.04
2	Cost A_2	8800.8	7602.8	7884.0	8231.04
3	Cost B	16580.6	15362.7	15632.6	15998.58
4	Cost C	19280.6	17702.7	17432.6	18418.08



CONCLUSION

The study shows that the production of Pearl millet in Jaipur is to analyze, socio economic characteristic of sample respondents, economics of Pearl millet production and price spread in production of Pearl millet. The results revealing that the socio economic status of the respondents found to be moderate with primary education, well economic back ground and greater access to all the assets. Economics of Pearl millet production is more profitable in large farms as compared to medium size farms and small size farms.

The study indicated that there is scope to increase the producer's share in consumer's rupee by making the market more effective so that the number of intermediaries is to be restricted and marketing costs and marketing margins to be reduced. This will be the way for making Pearl millet cultivation more lucrative. Major constraints in production was found that high cost of labor and less awareness about new technologies among different farms size group followed by a huge price fluctuation was the major marketing constraint in Pearl millet.

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