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Costs and Returns of Different Rice Production Technologies Under NSP Right Canal of Guntur District of Andhra Pradesh

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ABSTRACT

The study of costs and returns of different rice production technologies, viz. system of rice intensification (SRI), direct sowing and farmers practice has been carried out under NSP right canal of Guntur district. Among the three rice production technologies analyzed, the total cost of cultivation has been recorded highest in SRI (Rs. 67512.91/ha), followed by farmers practice (67465.22) and direct sowing (Rs.63165.30). The gross income, the net returns and benefit cost ratio was high in direct sowing owing to lower cost of cultivation in direct sowing compared to SRI and farmers practice. The unit cost of production was lowest in direct sowing (Rs.1070.05) followed by SRI (Rs.1141.32) and farmers practice (Rs.1274.61).

Key words: *Cost of production, Rice production systems, SRI.*

Rice is the predominant crop in Andhra Pradesh and more than 95 percent of rice area is under irrigated conditions, consuming 67 percent of irrigation water in the state. Production costs play an important role in the process of decision making by the farmers. Explicitly (or) implicitly, most of the farmers bear in mind that the cost of production related to their prices and it is an important topic for discussion. Cost of production often becomes a policy issue when producers complain that the prices they receive for the products do not cover the cost production, it means that the expenses incurred per unit of output exceeds the returns. The items of cost that go into the cost of production are both fixed and variable cost. Variable costs vary with the level of output and are employed differently in different farms for various operations.In view of this, the present study was taken up with an objective of analyzing costs and returns of different rice production technologies in NSP right canal command area of Guntur district.

MATERIAL AND METHODS

The study was conducted under NSP right canal command area of Guntur district. Multistage random sampling technique was used to select the respondents covering three mandals and two villages from each mandal. Thus the total sample of the study was 240 farmers. The main emphasis of the study was to analyze the costs and returns of different Rice production technologies in comparison to farmers practice. A simple tabular analysis was used for the study.

RESULTS AND DISCUSSION

Normally, the total cost of cultivation comprises of both fixed and operational costs. In general, operational costs alone are beckoned by the farmers and profits are worked out accordingly, ignoring the fixed costs. But in any business, the fixed costs are also to be taken into account to arrive at the total costs and thereby to work out the farm returns. Thus the breakup of costs is helpful to the farmers and other entrepreneurs to have an in depth understanding of the business enterprise. The total cost of cultivation, yields and returns of rice crop per hectare was worked out and discussed here in Tables 1 and 2, on the basis of accounting all the operational costs up to harvesting.

Table 1 showed that, the System of Rice Intensification (SRI) technology was most expensive over the direct sowing and farmers practice. The total cost of cultivation was Rs. 68501.85 in SRI followed by Rs.67465.23 in farmers practice and Rs.63165.30 in direct sowing.

Among the different items of operational costs, human labour cost was very high in SRI with Rs.21883.93 (31.95%) owing to labour intensive operations like transplantation weed management

Table 1. Cost of Cultivation of Different Rice Production Technologies.

S.No	Particulars	Direct Sowing (Rs/ha)	SRI (Rs/ha)		Farmers practice (Rs/ha)	
I	Operational costs					
1	Material costs					
	Seed	1422.20(2.25)	103.74	(0.15)	1159.96	(1.72)
	FYM	1754.98(2.78)	4693.00	(6.85)	1388.54	(2.06)
	Fertilizers	5030.99(7.96)	4627.55	(6.76)	5824.11	(8.63)
	Plant protection chemicals	2184.72(3.46)	2054.05	(3.00)	2668.88	(3.96)
2	Labour costs					
	Human labour(Hired+Family)	11323.0(17.93)	21883.3	(31.95)	14792.24	(21.93)
3	Machine labour	13829.38(21.89)	7421.34	(10.83)	13932.33	(20.65)
4	Interest on working capital	666.47(1.06)	764.69	(1.12)	745.61	(1.11)
	Total operational costs	**36211.75(57.33)**	**41548.30**	**(60.65)**	**40511.68**	**(60.05)**
II	Fixed costs					
1.	Taxes and cesses	494.00(0.78)	494.00	(0.72)	494.00	(0.73)
2.	Depreciation	586.60(0.93)	586.60	(0.86)	586.60	(0.87)
3.	Rental value of owned land	24700.00(39.10)	24700.00	(36.06)	24700.00	(36.61)
4.	Interest on fixed capital	1172.95(1.86)	1172.95	(1.71)	1172.95	(1.74)
	Total of fixed costs	**26953.55(42.67)**	**26953.55**	**(39.35)**	**26953.55**	**(39.95)**
	Cost of cultivation(Rs/ha)	**63165.30(100)**	**67512.91**	**(100)**	**67465.22**	**(100)**

Figures in parenthesis indicate percentage to the total.

Table 2. Yield, Net returns and Cost of production of different rice production technologies.

1	Particulars	Direct sowing	SRI Cultivation	Farmers practice
1.	Yield (q/ha)	59.03	60.02	52.93
2.	Cost of Cultivation(Rs/ha)	63165.30	67512.91	67465.22
3.	Gross Income (Rs/ha)	94551.6	92180.4	84711.12
4.	Net Returns(Rs/ha)	31386.30	24667.48	17245.89
5.	B:C Ratio	1.49	1.40	1.25
6	Cost of production (Rs/q)	1070.05	1141.32	1274.61

and harvesting. The machine labour cost was high in case of farmers practice (Rs.13932.33) which accounts for 20.65 per cent of total cost of cultivation, followed by direct sowing (Rs.13829.38) with 21.89 per cent to total COC and SRI (Rs.7421.34) with 10.83 per cent.

The seed cost was significantly less in SRI Rs.103.74 (0.15%) due to low dosage requirement (2kg/acre) followed by farmers practice Rs.1159.96 (1.72%) and direct sowing Rs.1422.20 (2.25%). Among the material costs, the expenditure incurred on seed was least followed by FYM, plant protection chemicals and fertilizers in all the technologies. Among the fixed costs, the rental value of owned land was higher followed by interest on fixed capital, depreciation and land revenue respectively for calculation of the rental value of the owned land, the existing rate in the study area was taken into consideration, it accounted to Rs.24700. (Radha *et al*, 2009).

The yields and returns were presented in table. 2. The table shows that the two technologies namely direct sowing (59.03 q) and SRI (60.02qt), recorded highest yield over farmers practice (52.93q). The net returns was found to be highest in direct sowing (Rs.31386.30) followed by SRI (Rs.24667.48) and farmers practice (Rs.17245.89).

The yield was highest in SRI followed by direct sowing and farmers practice. The B-C ratios next to direct sowing were SRI and farmers practice. (Ravikumar *et al*, 2005).The unit cost of production of rice was highest in farmers practice (Rs.1274.61) followed by SRI (Rs.1141.32) and direct sowing (Rs.1070.05) technologies.

CONCLUSIONS:

Among the three production technologies analyzed, the total cost of cultivation has been recorded highest in SRI (Rs. 67512.91/ha), followed by farmers practice (Rs.67465.22) and direct sowing (Rs.63165.30). But, the per hectare yield has been found highest in SRI (60.03q/ha) , followed by Direct sowing (59.03q/ha) and farmers practice (52.93q/ha). The net returns and B-C ratio also follow the same trend i.e. net returns and B-C ratio are maximum in direct sowing (Rs. 31386.30; 0.49), followed by SRI (Rs.24667.48; 0.36) and farmers practice. The cost of production was lowest in direct sowing followed by SRI and farmers practice. Thus, inferring that the direct sowing method of rice production was efficient over the other rice production technologies analyzed in the present study.

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