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ECONOMICS OF WATER CHESTNUT (*TRAPA BISPINOSA*) CULTIVATION – A CASE STUDY

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ABSTRACT

In the present study, economic profitability of water chestnut cultivation has been worked out on the basis of 40 producers. The farmers were randomly selected from the list of water chestnut growers in Saharsa. The result indicated that its cultivation is highly profitable, giving per ha gross income of Rs.89,990 with net income of Rs. 54,484.90 per ha. Cost of cultivation was worked out to be Rs. 35,415.10. B:C ratio was 2.54. The highest cost was recorded on human labour in plucking the nut (41.79 per cent) followed by seed or vine (33.01 per cent). Per ha human labour employed was about 500 man days.

Key words : *Economic profitability, economic rationale, water chestnut, Trapa Bispinosa.*

Water chestnut commonly known as Singhara or Panifal (*Trapa bispinosa*) is a fruit which is grown in small ponds and ditches, where water is stagnant and shallow. It is eaten raw or para boiled or may be used for preparation of other products after dehydration. Chestnut in dry form has 8.0 per cent Protein, 76.4 per cent Carbohydrates and 2.6 per cent mineral matters. It is also rich in Vitamin A, C and folate. It has medicinal value and is used against diarrhoea and abdominal pain. In Bihar, it is cultivated on a large scale in the districts of Darbhanga, Samastipur, Madhubani, Muzzarfarpur, Patna, Bhagalpur and Saharsa. Agro-climatic conditions of these districts is suitable for its cultivation. No specific works have so far been carried out on economic aspects of its cultivation. As such, it is important to examine the profitability of water chestnut with the following objectives :

To find out the cost of cultivation/ production of water chestnut.

To find out per ha gross return, net return and B:C ratio and

To identify the problems and constraints of water chestnut growers.

MATERIALS AND METHODS

The ponds and ditches covered with water chestnut and situated in suburb of Saharsa town was taken as the study area. Forty water chestnut growers were randomly selected from this region. Input-output data on water chestnut were collected by survey method in schedules and questionnaires specifically prepared. The data pertained to the year 2008-09. Simple tabular analysis was followed.

RESULTS AND DISCUSSION

Average cost of cultivation on a hectare basis was worked out to be Rs.35,415.10 with gross income and net income of Rs. 89,900 and Rs. 54,484.90, respectively (Table-1). Benefit- Cost ratio was 2.54. This indicated that water chestnut cultivation was highly profitable crop enterprise and capital investment on this crop was in favour of high economic rationality. Though, the cost per ha is high due to high use of human labour, growers do not take it into account as family labourers themselves generally work in its cultivation. Total human labour employed per ha was 500 man days whose remuneration was computed to be Rs.20,000 which is 59.39 per cent of the total cost of cultivation. Human labour cost in plucking the fruit was the highest (41.79 per cent). The share of input cost like seed or vine, plant protection chemicals, and others accounted for 40.61 per cent.

Water chestnut growers expressed their discontent on unavailability of improved package of practices for this crop. They wanted new improved varieties, knowledge of proper plant protection measures and full package of practices for its cultivation.

As such, researches on development of its high yielding varieties, plant protection measures and agronomical aspects are highly required.

Table-1 : Input-wise cost of cultivation of water chestnut.

S. No.	Particulars	Rate	Cost Rs./ha
1.	Cleaning the pond	4-12 labourers @ Rs.40	164.80 (0.49)
2.	Seed (Vine)	2,472.36 in number @ Rs.4.5/vine	11,125.62 (33.01)
3.	Planting of vines	61.50 labourers	2460.00 (7.30)
4.	Interculture	70.25 labourers	2,810.00 (8.34)
5.	Spraying and dusting of chemicals	12.37 man labourers	1796.67 (5.33)
6.	Plucking or Harvesting	352.11 labourers	14,084.40 (41.79)
7.	Miscellaneous costs		1,255.70 (3.72)
8.	Interest on working capital	@ 10% for 3 months	842.43
	Total working cost		34539.60 (97.62)
9.	Rent of the pond		875.50 (2.38)
	Total cost of cultivation per ha		35,415.10
10.	Yield	224.75q @ Rs. 400/q	89,900.00
	Net income per ha		54,484.90
	Cost per quintal		157.58
	B:C Ratio		2.54
	Total human labour employed	500.35 @ Rs.40	20,014 (59.39)
	Total input cost including		13,683.19 (40.61)

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