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RESEARCH PAPER

Economics of marketing and processing of aonla in district Pratapgarh, Uttar Pradesh

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ABSTRACT

The study was carried out in Sadar block of district Pratapgarh in Uttar Pradesh with 30 aonla growers (8 marginal, 6 small and 16 big respondents) selected randomly with six villages of the selected block. The over all plantation cost of one hectare aonla was worked out of Rs.47000 .The cost of of gestation period was calculated as Rs.78876.60 for six years of gestation period. On an average cost of aonla production per hectare came to Rs.27386.02. The highest cost intake of 6-12 years orchard was worked out as Rs.33272.08/ha, while lowest cost was observed in 24 years and above aged orchard as Rs.23836.00/ha. The input-output analysis shows that aonla crop fetched on an average 5.45 times more return on investment of Rs. 1. Problems of insect-pest and diseases, lack of plant protection measures and lack of skilled human resource at peak season was observed as main constraints in the study area.

KEY WORDS : Cost of production, Plantation cost, Gestation period cost, Cost-A, B, C

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The roles of fruit in balance diet need not to be emphasized. It played an important role in supplying the vitamins and the minerals for human body. Hence, it is called protective foods. India ranks second in fruit production in the world and produces about 63.83 million tones produce during 2010-11. Horticultural crops cover 13 per cent cropped area of the country. The area, production and productivity of fruit have increased 3.0, 8.0 and 3.0 time from 1961 to 2011. Various fruits and flower plant like aonla, mango, guava, citrus and roses etc can be grown on a wide range of soil and climatic condition which may be helpful in developing poor or marginal land, hardly suitable for crop cultivation.

Such a system diversification has a great potential in increasing productivity or income per unit area and time, providing higher employment and generating foreign exchange through export of horticultural products.

Aonla (*Emblica officinalis*, Gaertn Syn., *Phyllanthus emblica* Linn) belong to the family Euphorbiaceae with the chromosome number 2n=28. Aonla is also known by its several vernacular names such as 'amla' or 'aura' in Hindi, 'dhatri' or 'amlaki' in Sanskrit, 'amla' or 'amlaki' in Bengali or 'Indian

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gooseberry' in English. Aonla is a common home yard tree throughout India and is often seen growing wild in the deciduous forest upto an elevation of 1800 meter. The exact statistical data of aonla in India in no available but it has maximum area in Uttar Pradesh. Area under aonla orchard in Pratapgarh district is about 13000 hectares. Whereas the area in Sadar block of district Pratapgarh approximately 3250 hectares.

Aonla is more popular in Uttar Pradesh where it is largely cultivated in commercial orchards in Pratapgarh, Azamgarh, Varanasi, Faizabad, Sultanpur, Raibareli and Bareilly district.

METHODOLOGY

A multi-stage purposive sampling technique was adopted to select the district development block, villages and the aonla growers. District Pratapgarh was selected purposely because of higher concentration of aonla cultivation. A list of all the development blocks, growing aonla of district Pratapgarh was prepared. Out of this list, one development block, *i.e*. Sadar block having the highest area under aonla orchards was selected purposely. A list of all villages of Sadar block practicing aonla cultivation was prepared. Out of this list 6 villages the highest area under aonla namely- Gondey, Setapur, Baijalpur, Bariya samundra, Lohanpur and Param Nathpur were selected randomly. A list of all aonla growers of the selected villages was prepared and out of this, five growers from each selected villages were selected at random process with proportion to the aonla growers falling in each village under different size groups of farms. In study area it was observed that aonla orchards are of the age from 0 to 40 years. Therefore, growers of the aonla were categorized in to four groups based on life of the orchard *viz.*, 0 to 6 years, 6 to 12 years, 12 to 24 years and 24 and above years. 30 growers of aonla are selected in study area. On an average, size of holding on marginal size groups were 1 hectare, small size groups 2 hectare and big size groups were 3.87 hectare.

ANALYSIS AND DISCUSSION

The results obtained from the present investigation have been presented in the following sub heads and Tables 1 to 7.

Economics of production of aonla :

On an average per farm and per hectare investment on fixed capital came to Rs.189062.50 and Rs.74250, respectively. The economics of the aonla was worked out for different stages of aonla crop from plantation to the fruiting period and different types of the aonla orchard existed in the study area.

Plantation cost :

The plantation cost on an average of one hectare of aonla crop came to Rs. 47000. The highest cost of plantation 63.82 per cent incurred on fencing with 10.63 per cent on digging of pit,8.53 per cent on fertilization and 6.38 per cent on purchase of the aonla plant.

Economics of intercropping during gestation period:

The economics of intercropping during gestation period revealed that the total cost of intercropping for gestation period came to Rs.94025.50 per hectare. The highest cost was worked out as Rs. 19281.50 during first year while lowest cost of Rs. 12796.00 was calculated during IV th and V th year of the plantation of aonla. The cost of intercropping during IInd year and IIIrd year was the same as Rs.18074.50 while it was Rs. 13003 at the sixth year of intercropping. Patel *et al*. (2011) reported the similar results.

Cost of production during fruiting period :

After deducting the income obtained from intercropping during first three years, the total cost during the gestation period came to Rs.78876.50 of this cost the first year cost accounted for 51.06 per cent followed by 16.48 per cent in sixth year, 16.22 in fifth year and 16.22 per cent in fourth year.

On an average per annum, per hectare total cost came to Rs.27386.02 during fruiting period of which highest cost for 6 to 12 years categories (Rs.33272.08). Because it include the gestation period cost. The overall net income came to Rs.149273.98 on the sample farms. The highest net income 12 to 24 year (Rs.174950) categories of aonla and lowest net income 6 to 12 year (Rs.116727.92) categories of aonla orchards. On an average, cost benefit ratio of different categories of aonla orchards came to 1:5.45. Bhatia *et al*. (2007) and Das *et al.* (2011) have also done some relative work on aonla.

Constraints in aonla production :

Some problem and constraint were faced by the aonla producer in production of Aonla. All the selected

Table 1 : Plantation cost of aonla/ha **(Amount in Rs.)**

Sr.No.	Particular	Amount	Percentage
1.	Fencing	30,000	63.82
2.	Preparation of land	3,000	6.38
3.	Digging of pit	5,000	10.63
4.	Manure and fertilizer	4,000	8.51
5.	Cost of plant	3,000	6.38
6.	Planting charges	1,000	2.12
7.	Irrigation charges	1,000	2.12
	Total	47,000	100.00

Table 2 : Cost of production of aonla orchard during gestation period with intercropping per ha. **(Rs.)**

Sr. No.	Particular	Pea and moong intercropping cost year wise			Other operation cost year wise			Total
		I	II	III	IV	V	VI	
1.	Human labour	4000	3500	3500	3000	3000	3000	20,000
2.	Draft power	3000	3000	3000	-	-	-	9000
3.	Seed	1200	1200	1200	-	-	-	3600
4.	Manure and fertilizer	3000	2800	2800	2500	2500	2700	16300
5.	Irrigation charge	1100	1100	1100	1100	1100	1100	6600
6.	Plant protection	600	600	600	500	500	500	3300
7.	Interest on working capital	381.5	374.5	374.5	196	196	203	1725.5
8.	Cost A_1/A_2	13281.5	12574.5	12574.5	7296	7296	7503	60525.5
9.	Rental value of land	4000	4000	4000	4000	4000	4000	24000
10.	Cost B	17281.5	16574.5	16574.5	11296	11296	11503	84525.5
11.	Cost C/ total cost	19281.5	18074.5	18074.5	12796	12796	13003	94025.5

Table 3 : Net cost of production of aonla orchard during Ist to IIIrd year

Year	Cost of orchard	Cost on intercropping	Total	Total return from intercropping	Net cost of aonla orchard during gestation period
I	47000	19281.5	66281.5	26000	40281.5
II	-	18074.5	18074.5	24000	+(5925.5)
III	-	18074.5	18074.5	24000	+(5925.5)

Table 4 : Cost of production of aonla orchard for the gestation period per hectare **(Rs.)**

Year	Cost (in Rs.)	Percentage
I	40281.5	51.06
II	-	-
III	-	-
IV	12796.0	16.22
V	12796.0	16.22
VI	13003.0	16.48
Total	78876.5	100.00

Table 5 : Gestation period's cost distribution

Sr. No.	Particulars	Amount (Rs.)
1.	Total gestation period cost	78876.50
2.	First orchard categories year	6
3.	Cost per year	13146.08

aonla growers were interviewed and observations obtained were analyzed. Such important problems and constraints in the production of aonla in the study area are presented in Table 7.

Table 7 reveals that 48.28 per cent of aonla growers were facing the shortage of farm yard manure, which was not available at the time of critical stage.

The majority of respondents/growers (54.30%) reported about unavailability of fertilizer and plant protection chemicals during the peak period.

Shortage of human labour during peak period was another crucial problem faced by 65.10 per cent farmers.

About 52.50 per cent aonla growers reported shortage of credit which become main reason for not adding the balance fertilizer, plant protection etc. The problem in controlling insect-pest and diseases was reported by 65.80 per cent farmers. Gupta and Singh (2010) have also reported the similar problems encountered with the aonla farmers.

Policy implications :

In the context of our new economic policy, plantation of aonla orchards may be encouraged as a focus area for diversification of agriculture. It has great potential of generating higher income per unit area and time besides, earning foreign exchange through export

Table 6 : Cost of production in fruiting period of aonla orchard under different categories of orchard **(Rs. /ha)**

Sr. No.	Particulars	Orchard categories (in year)			Average
		6-12	12-24	24 and above	
1.	Hired labour	7000	9000	8000	8000
2.	Family labour	3500	5000	4000	4166.66
3.	Total human labour	11500	14000	12000	12500
4.	Manure and fertilizer	3000	3500	4000	3500
5.	Irrigation	1200	1500	1600	1433.33
6.	Plant protection	600	1000	1200	933.33
7.	Interest on working capital	826	1050	1036	970.66
8.	Cost A_1/A_2	12626	16050	15836	1487.33
9.	Rental value of land	4000	4000	4000	4000
10.	Cost B	16626	20050	19836	18837.33
11.	Gestation period charge	13146.08	-	-	4382.02
12.	Cost C/Total cost	33272.08	25050	23836	27386.02
13.	Yield (Qt.)	150	200	180	176.66
14.	Gross return	150000	200000	180000	176660
15.	Net return	116727.92	174950	156164	149273.98
16.	Cost of production/qt	221.81	125.25	132.42	155.02
17.	Cost benefit ratio				
	Cost C basis	1:3.50	1:6.98	1:6.55	1:5.45
	Cost B basis	1:6.85	1:8.72	1:7.87	1:7.87
	Cost A basis	1:9.02	1:10.90	1:9.86	1:9.99

Table 7 : Problem and constraint in the production of aonla

Sr. No.	Particulars	Respondent's response (%)
	Input problem	
1.	Shortage of F.Y.M.	48.28
2.	Unavailability of fertilizers and plant protection chemicals	54.30
3.	Shortage of human labour during peak period	65.10
4.	Shortage of credit	52.50
5.	Problems in controlling insect-pest and diseases	65.80

of aonla products. For trapping full potentials, there is need to develop such strategy which may provide strong production base and export opportunities for aonla products. It calls for a determined policy to integrate production, marketing and export.

In this regard identification of product specific aonla zones, provision of suitable technology, screening package and practices, creation of appropriate infrastructure etc., are essential amenities for aonla production. Formation of co-operative organizations may further help in safeguarding the interest of the producer/growers and enable them to control the marketing of their products, strengthening of market intelligence network which may provide advice to the producer regarding demand/supply position in the market, latest practices in grading, packing and consumer preferences is necessary. Over all, the government should support the aonla processing units as a whole in general and export oriented aonla products in particular.

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