

Economics of Production of Pigeonpea in Parbhani District

M. S. More*, J. L. Katkade* and D. B. Pawar*

ABSTRACT: An attempt has been made to examine the economics of production of pigeonpea in Parbhani district. The investigation was based on the data collected by survey method from 60 Pigeonpea growers from Parbhani district.

The results indicated that the main product of pigeonpea was 10.25 q/ha. In production process, rental value of land, bullock labour, hired human labour and interest on fixed capital were the major items of the cost. Per hectare total cost (cost 'C') was Rs. 22487.54. The proportion of cost 'A' in total cost was 57.76 per cent, while proportion cost B was 90.72 per cent and output-input ratio was 1.85.

INTRODUCTION

Pigeonpea (*Cajanus cajan*) is commonly known as tur or arhar. It is the world's second important pulse crop after chickpea. It is the major pulse crop of the semiarid tropics and has been used for centuries in intercropping systems. Pigeonpea belongs to the family leguminous, genus *Cajanus*, species *cajan*. Dal contains as much as 22 per cent protein and seed contain 57.8 percent carbohydrate, 1.2 to 8 per cent crude fiber and 0.6 to 3.8 per cent lipid. Pigeonpea is good source of calcium, phosphorus, magnesium, iron, sulphur. It is good source of soluble vitamins especially thiamin, riboflavin and niacin. Tender leaves are rarely used as a potherb. Ripe seeds may be germinated and eaten as sprouts.

Pigeonpea is second largest pulse crop in India accounting about 20 per cent of total pulse production. India ranks first in area and production of pigeonpea. It is grown on area of about 3.47 million hectares with the production of 2.72 million tonnes. The crop is extensively grown in Maharashtra, Uttar Pradesh, Karnataka, Andhra Pradesh, Gujarat and Madhya Pradesh. Pigeonpea, in the Indian context, is the second most important crop after peas.

Objectives

1. To study socio-economic characteristics of pigeonpea growers.
2. To examine cost and returns in pigeonpea cultivation.

METHODOLOGY

Multistage sampling design was adopted for present study. In the first stage Parbhani district of Maharashtra state was selected purposively because this district is well known for growing pigeonpea. In second stage Parbhani and Jintur tehsils were selected on the basis of highest proportionate area. In third stage five villages from each tehsils were selected on the basis of highest area. A list of pigeonpea growers was obtained from revenue record, six pigeonpea growers were selected from each village thus 60 pigeonpea growers were selected for present investigation. Required cross section data was collected in specially designed schedule by interview method. Data pertained for the year 2011-12.

Statistical tools like arithmetic mean, percentage and ratios were used for estimating the results. Cost concepts like cost 'A', cost 'B' and cost 'C' were used.

RESULTS AND DISCUSSION

Socio-economic characteristics of pigeonpea growers

From Table 1 it is revealed that the middle age (55.00 per cent) farmers are involved more in this profession. Educational status revealed that more than half samples were attended high school (51.67 per cent) and on an average family size of selected pigeonpea growers composed of 6.29 members in their family. As regards occupation it was noticed that majority of pigeonpea growers having agriculture as main source of occupation. The average size of land holding was 3.01 hectares.

* Department of Agril. Economics, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani - 431402 (M.S.) India.

Table 1
Socio economic characteristics of pigeonpea growers

(N = 60)			
<i>Age wise distribution</i>			
Sr. No.	Age groups	Number	Per cent
1	Young (upto 30 yrs)	10	16.67
2	Middle (30 to 45 yrs)	33	55.00
3	Old (above 45 yrs)	17	28.33
<i>Educational status</i>			
1	Illiterate	14	23.33
2	High school	31	51.67
3	College	15	25.00
<i>Family size</i>			
1	Male	2.47	39.26
2	Female	2.07	32.89
3	Children	1.75	27.85
<i>Occupational distribution</i>			
1	Only Agriculture	47	78.33
2	Agriculture and other	13	21.67
<i>Per farm land use pattern</i>		Area in ha	Per cent
1	Total area	3.01	100.00
2	Irrigated area	1.00	33.22
3	Rainfed area	2.00	66.45
4	Permanent fallow area	0.01	0.33
5	Net sown area	3.00	99.66

Per hectare physical input and output of pigeonpea production.

Input utilization for pigeonpea cultivation was worked out and presented in Table 2. Input utilization for pigeonpea showed that per hectare hired human

Table 2
Per hectare physical input and output of pigeonpea cultivation

Rs/ha			
Sr. No.	Particulars	Unit	Unit Required
<i>Input</i>			
1	Hired human labour	Man day	28.12
	Male		11.52
	Female		16.62
2	Bullock labour	Pair day	4.50
3	Machine labour	Hour	6.50
4	Seed	Kg	11.35
5	Manure	Q	3.31
6	Nitrogen	Kg	16.12
7	Phosphorous	Kg	34.29
8	Potash	Kg	8.36
9	Plant protection	Lit	2.69
10	Irrigation	No.	2.32
11	Family human labour	Man day	15.36
	Male	No.	8.15
	Female	No.	7.21
<i>Output</i>			
1	Main produce	q	10.25
2	By produce	q	4.75

labour utilized was 28.12 mandays. While family human labour utilization in pigeonpea cultivation was 15.36 mandays. Per hectare use of bullock labour was 4.50 pair days. Per hectare seed used in pigeonpea production was 11.35 kg. Plant protection used in pigeonpea production was 2.69 litres. Per hectare use of chemical fertilizer was to the tune N 16.1 kg, P 34.2 kg and K 8.36 kg.

It was noticed from the table that per hectare main produce yield was 10.25 quintals while by produce yield was 4.75 q.

Cost of cultivation of pigeonpea production

Per hectare cost of cultivation was computed and presented in Table 3. Per hectare total cost with regards to pigeonpea was Rs. 22487.54 while cost A was Rs. 12989.18 and cost B was Rs. 20399.84. Per cent share of cost A was 57.76 per cent while cost B was 90.72 per cent. Among the various items of expenditure the per cent share of rental value of land was predominant as 30.50 per cent followed by hired human labour 16.54 per cent, machine labour 8.67 per cent and family human labour 9.28 per cent.

Table 3
Per hectare cost of cultivation of pigeonpea

(Rs/ ha)			
Sr. No.	Particulars	Cost	Per cent
1	Hired human labour	3719.4	16.54
a	Male	1725.00	7.67
b	Female	1994.40	8.87
2	Bullock labour	1575	7.00
3	Machine labour	1950	8.67
4	Seed	454	2.02
5	Fertilizers	517.16	2.30
	Nitrogen	112.84	0.50
	Phosphorous	291.46	1.30
	Potash	112.86	0.50
6	Manures	1992.00	8.88
7	Plant protection	906.50	4.03
8	Irrigation	348.00	1.55
9	Land revenue	87.17	0.39
10	Incidental expenditure	252	1.12
11	Interest on working capital	692.95	3.08
12	Depreciation on asset	495.00	2.20
13	Cost - A (Σ 1 to 10)	12989.18	57.76
14	Interest on fixed capital	552.00	2.45
15	Rental value of land	6858.66	30.50
16	Cost - B (Σ 12 to 13)	20399.84	90.72
17	Family human labour	2087.70	9.28
a	Male	1222.50	5.44
b	Female	865.20	3.85
18	Cost - C (Σ 14 to 15)	22487.54	100

Profitability of pigeonpea

Per hectare gross return, farm business income, family labour income, net profit, output input ratio and per

Table 4
Per hectare profitability in pigeonpea production.

Sr. No.	Particulars	Rs/ha
1	Return from a main produce	41223.75
2	Return from by produce	451.25
3	Gross return (" 1 to 2)	41675.00
4	Cost - A	12989.18
5	Cost - B	20399.84
6	Cost - C	22487.54
7	Farm business income (Gross return minus cost - A)	28685.82
8	Family labour income (Gross return minus cost B)	21275.16
9	Net profit (Gross return minus cost-C)	19187.46
10	Output input ratio (Gross return divided by cost-C)	1.85
11	Per quintal cost of production (cost-C divided by main produce quality)	2193.91

quintal cost of production of main product were calculated and presented in Table 4.

It was observed that gross return on pigeonpea farm was Rs. 41675.00. Farm business income, family labour income and net profit were 28685.82, 21275.16 and 19187.46 respectively. Output input ratio was 1.85 indicating that the pigeonpea is a profitable enterprise. Per quintal cost of production was Rs. 2193.91.

REFERENCES

- Ghulghule J. N., Thombre A. P. and More S. S., (2009), Economics of production of greengram in marathwada region of Maharashtra state, *Agriculture Update* 4 (1&2): 41-43.
- Kalmakar S. S., (2003), Economics of Pulses production and identification of constraints in raising their production in Maharashtra, *Agric. Situ. India.*, **60(2)**: 81-91.
- Pawar B. R. and Pawar D. B., (2007), Technique of evaluation in economics of rainfed balckgram and pigeonpea production, *Internat. J. Agric. Sci.*, **3(1)**: 21-24.

