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Economics of papaya in Bidar district of Karnataka

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Abstract

The study was conducted in the year 2016 – 2017 to study the “Economics of Papaya in BIDAR district of Karnataka” with a sample of 120 respondents. It revealed that, the cost of cultivation Papaya for small, medium and large of farms groups were Rs125892.23/ha, Rs122618.67/ha and Rs119642.33/ha respectively. Average cost of cultivation in different size farms group was Rs122978.00/ha. The Gross Returns obtained per hectare by small size farms were high (Rs. 390000.00/ha) as compare to medium and large size farms (Rs.370000.00 /ha and Rs.353333.00 /ha) respectively. Net returns per hectare were highest in small size farms (Rs264107.67/ha) compare to the medium and large size farms (Rs.247381.33 /ha and 233691.00/ha). Cost A₁ was highest in small size farms (Rs. 120572.67/ha) followed by medium size farms (Rs. 118105.67/ha) and lowest in large size farms (Rs116284.33/ha) respectively. Cost A₂ in small, medium and large size of farms groups was Rs. 120572.67/ha, Rs118105.67/ha and Rs.116284.33 /ha respectively. Cost B was highest in small size farms (Rs130625.67/ha) as compared to medium size farms (Rs128152.00/ha) and in large size of farms (Rs126325.67/ha) respectively. Cost C was highest in small size farms (Rs. 125982.33/ha) and lowest in large size farms (Rs. 119642.33/ha). Farm business income in small, medium and large size of farms group was Rs269427.33/ha, Rs. 251894.33/ha and Rs. 237049.00/ha respectively. Farm investment income was highest in small size farms (Rs.274107.67/ha) as compared to medium size farms (Rs.257427.67 /ha) and lowest in large size farms (Rs243699.00/ha) respectively. Family labour income was Rs259374.33/ha for small size farms group, Rs.241848.00/ha for medium size farms group and Rs.227007.67/ha for large size of farms group.

Keywords: Economics, cost, returns, Papaya

Introduction

Papaya is considered one of the most important fruits because it is a rich source of antioxidant nutrients (e.g., carotenes, vitamin C, and flavonoids), the B vitamins (e.g., folate and pantothenic acid), minerals (e.g., potassium and magnesium), and fiber. In addition, papaya is a source of the digestive enzyme papain, which is used as an industrial ingredient in brewing, meat tenderizing, pharmaceuticals, beauty products, and cosmetics. India occupies third position in the production of Papaya. The production of Papaya in India was 5508.08 thousand ton from an area of 125.86 thousand ha during the year 2014-15. Karnataka is one of a leading Papaya producing state with total area under Papaya crop of 7.51 thousand hectares with production of 524.18 thousand ha during the year 2014-15. Similarly major papaya producing states are Andhra Pradesh having area 18.40 thousand ha, with production 1471.68 thousand tons, Gujarat having area 19.59 thousand ha, with production 1185.47 thousand tons, Madhya Pradesh having area 13.82 thousand ha, with production 455.00 thousand tons, West Bengal having area 11.76 thousand ha, with production 345.50 thousand tons (Indian horticulture database 2015)

Objectives

To analyze the Cost and Returns of Papaya crop per hectare in different size of farms groups.

Materials and methods

Papaya cultivation is practiced throughout the district. However, the large scale cultivation of Papaya is concentrated mainly in Humnabad taluk extending on an area of 979 hectares and forming 7.31 percent of the total area under Papaya in the district. Hence, Humnabad taluk was specifically selected for the study. The information on area under Papaya crop and number of Papaya growers from the selected villages was obtained from the respective village accountants (Talati). A proportionate sample of five per cent of the population from each village was selected randomly. Thus, the total size of the sample selected for the study was 120. The highest average age of the sample farmers in Humnabad taluk was found to be 49 years and more than 60% farmers depended mainly on agriculture as their primary occupation. Around 16.91% of farmers in the selected taluks completed their Graduation education were as

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the per cent of illiterate farmer in the selected taluks ranged from 18 to 19%. The sample average area under Papaya cultivation was 1.91ha in different size of farms group. On an average plant population per ha was 1000. For analyzing the data collected during the study, tabular analysis and financial

analysis were employed. The technique of tabular analysis was employed for estimating the cost of cultivation, yield and return structure of Papaya.

Results and discussion

Table 1: Cost of Cultivation of Onion crop per hectare in different size of farm groups.

Sl. No	Particulars of Farm Operations	Size of Farms Groups			Sample Average
		Small	Medium	Large	
1	Hired Human Labour Charges	9850.00 (7.82)	11425.00 (9.32)	12775.00 (10.68)	11228.10 (9.13)
2	Bullock Labour Charges	1500.00 (1.19)	1200.00 (0.98)	900.00 (0.75)	1225.00 (1.00)
3	Machinery Labour Charges	4200.00 (3.34)	3966.67 (3.23)	3866.67 (3.23)	4025.00 (3.27)
4	Cost of Seedlings	25000.00 (19.86)	24300.00 (19.82)	24000.00 (20.62)	24475.00 (19.90)
5	Cost of Farm Yard Manure	23000.00 (18.27)	22166.66 (18.08)	21666.67 (18.11)	22333.30 (18.16)
6	Cost of chemical Fertilizers	29833.33 (23.70)	28966.66 (23.62)	28116.67 (23.50)	29043.80 (23.62)
7	Cost of Irrigation charges	7500.00 (5.96)	7000.00 (5.71)	6500.00 (5.43)	7041.67 (5.73)
8	Cost of Plant Protection charges	9833.33 (7.81)	9433.33 (7.69)	9000.00 (7.52)	9456.94 (7.69)
9	Cost of Miscellaneous charges	816.67 (0.65)	783.33 (0.64)	766.67 (0.64)	790.97 (0.64)
10	Interest on Working Capital @ 8%	7509.33 (5.96)	7400.67 (6.04)	7279.33 (6.08)	7406.03 (6.02)
11	Depreciation on Fixed Resources	1450.00 (1.15)	1383.33 (1.13)	1333.33 (1.11)	1393.75 (1.13)
12	Land Revenue Paid to Government	80.00 (0.06)	80.00 (0.07)	80.00 (0.07)	80.00 (0.07)
13	Interest on Fixed Capital @ 10%	1053.00 (0.84)	1046.33 (0.85)	1041.33 (0.87)	1047.38 (0.85)
14	Rental Value of Own Land	9000.00 (7.15)	9000.00 (7.34)	9000.00 (7.52)	9000.00 (7.32)
15	Imputed value of Family Labour	12933.33 (10.27)	11200.00 (9.13)	9466.67 (7.91)	11344.40 (9.22)
16	Total Cost of Cultivation	125892.23 (100.00)	122618.67 (100.00)	119642.33 (100.00)	122978.00 (100.00)

Table 1 shows that among different size of farms during over all year, total cost incurred by the small size farms were high (Rs.125892.23/ha) as compared to medium and large size farms (Rs.122618.67/ha and Rs.119642.33/ha). Sample average for total cost was Rs.122978.00/ha in different size of farms group.

The cost of human labour, fertilizers, and machinery labour were the items of cost with major share in the variable costs, because most of the operations like harvesting, and weeding were human labour intensive operations. The distribution of pattern of operational cost under various inputs revealed that cost of human labour was the highest in the large size farms (Rs.12775.00/ha), compared to medium size farms (Rs.11425.00/ha) and lowest on small size farms (Rs.9850.00/ha) respectively.

As Papaya crop would respond well with chemical fertilizer

so the cost of farm yard manure uses was ranged from Rs. 23000.00 (small size farms) to 21666.67 (large size farms). Whereas, the expenditure on fertilizers was the highest (Rs.29833.33/ha) for small size farms as compared to medium size farms (Rs.28966.66/ha) and large size farms (Rs.28116.67/ha) respectively. It was also noticed that the highest expenditure on plant protection charges was seen on small size farms (Rs.9833.33/ha) as compared to medium and large size farms respectively. Sample average for depreciation on fixed resources was Rs.1393.75, interest on working capital Rs.7406.03, interest on fixed capital was Rs.1047.38, Land revenue paid to government was Rs.80 in different size of farms group.

The cost of rental value of own land was Rs.9000.00/ha in different size of farms group. Sample average for rental value of own land was Rs 9000.00/ha

Table 2: Average Costs and Returns in Onion crop per hectare in different Size of Farms Group

Sl. No	Particulars	Size of Farms Group			Sample Average
		Small	Medium	Large	
1	Total Cost of cultivation	125892.33	122618.67	119642.33	122978.00
2	Yield in ton per hectare	39.00	37	35.33	37.26
3	Gross Returns per hectare in rupees	390000.00	370000.00	353333.00	372638.89
4	Net Returns per hectare	264107.67	247381.33	233691.00	249660.69
5	Cost of Production per ton	3228.01	3314.02	3386.10	3302.79

Table 2 shows that Costs and Returns in Papaya 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.125892.33/ha) as compared to medium (Rs.122618.67/ha) and large farms (Rs.119642.33/ha). Sample average for total cost of cultivation was Rs.122978.00/ha in different size of farms group. The gross returns obtained per hectare by small size farms were high

(Rs.390000.00/ha) as compare to medium and large size farms (Rs.370000.00/ha and Rs.353333.33 /ha) respectively. The net returns per hectare obtained by large size farms were high (Rs.233691/ha) as compared to medium and small size farms (Rs.247381.00/ha and Rs.214607.67/ha) respectively. The average yield of Papaya in different size of farms group was Rs.37.26 ton/ha. Average cost of production per ton was Rs. 3302.79.

Table 3: Cost Concepts in Onion crop per hectare in different Size of Farms Group

Sl. No	Cost Concepts	Size of Farms Group			Sample Average
		Small	Medium	Large	
1	Cost A ₁	120572.67	118105.67	116284.33	118500.00
2	Cost A ₂	120572.67	118105.67	116284.33	118500.00
3	Cost B	130625.67	128152.00	126325.67	128547.00
4	Cost C	125982.33	122618.67	119642.33	122978.00

Table 3 shows that Cost Concepts on different size of farms group per hectare. Cost A₁ was highest in small size farms (Rs.120572.67/ha) followed by medium size farms (Rs.118105.67 /ha) and lowest in large size farms (Rs.116284.33 /ha) respectively. Cost A₂ in small, medium and large size of farms groups was Rs.120572.67/ha, Rs.118105.67 /ha and Rs.116284.33 /ha respectively. Cost B was highest in small size farms (Rs.130625.67/ha) as

compared to medium size farms (Rs.128152.00/ha) and lowest in large size of farms (Rs.126325.67/ha) respectively. Cost C was highest in small size farms (Rs.125982.33/ha) and lowest in large size farms (Rs.119642.33/ha). Sample average for Cost A₂, Cost B and Cost C were Rs.118500.00/ha, Rs.128547.00/ha and Rs.122978.00/ha in different size of farms group

Table 4: Measures of farm profitability in onion crop per hectare in different size of farms group

Sl. No	Particulars	Size of Farms group			Sample Average
		Small	Medium	Large	
1	Gross Returns	390000	370000.00	353333.33	372639
2	Farm Business Income	269427.33	251894.33	237049.00	254139
3	Farm Investment Income	274160.67	257427.67	243699.00	259698.30
4	Net Returns	264107.67	247381.33	233657.67	249651.00
5	Family Labour Income	259374.33	241848.00	226974.33	244082.20

Table 4.25 and figure 4.8 reveals that Measures of Profitability in Papaya cultivation in different size of farms group. The gross returns obtained per hectare by small size farms were high (Rs.390000.00/ha) as compare to medium and large size farms (Rs.370000.00/ha and Rs.353333.33/ha) respectively. This makes the sample average for gross returns was Rs. 372639.00/ha in different size of farms group. Farm business income in small, medium and large size of farms group was Rs.269427.33/ha, Rs.251894.33/ha and Rs.237049.00/ha respectively. Sample average for farm business income was Rs. 254139.00/ha in different size of farms group. Farm investment income was highest in small size farms (Rs.274160.67/ha) as compared to medium size farms (Rs.257427.67/ha) and lowest in large size farms (Rs.243699.00/ha) respectively. This makes the sample average for Farm investment income was Rs.259698.30/ha in different size of farms group. The net returns per hectare obtained by small size farms were high (Rs.264107.67/ha) as compared to medium and large size farms (Rs.247381.330/ha and Rs.233657.67/ha) respectively. Sample average of net returns was Rs.249651.00/ha in different size of farms group. Sample average of Family labour income was Rs.244082.20/ha in different size of farms group

Conclusion

The study shows that the production and marketing of Papaya in Bidar district. The main objective of the study is to analyze, socio economic characteristic of sample respondents, economics of Papaya production, price spread and constraints in production and marketing of Papaya. 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 Papaya 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 Papaya cultivation more lucrative. Major constraints in production was found that high cost seedlings and less awareness about new technologies among different farms size group followed by a huge price fluctuation was the major marketing constraint in Papaya.

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