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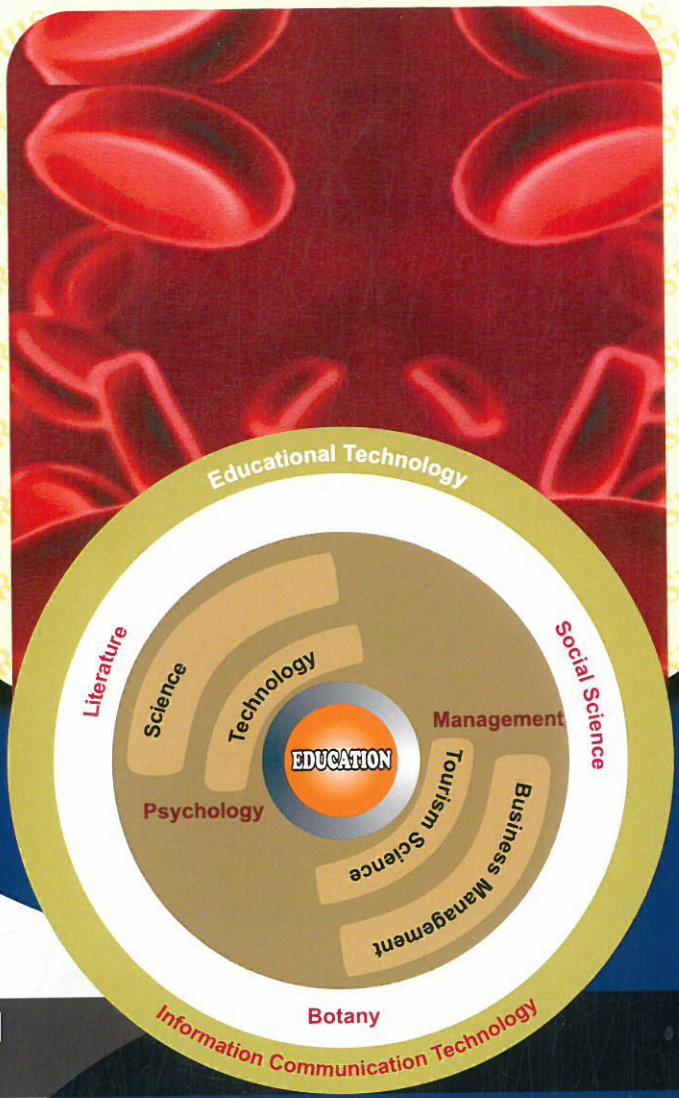

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INTER-FARM COMPARISON OF COST BENEFIT RATIO OF POMEGRANATE ORCHIDS IN NASHIK DISTRICT: AN AGRONOMICAL ANALYSIS

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Abstract

Pomegranate crop has contributed in improving rural economy and it also provided a good source of income especially for unemployed rural youths. Ultimately, it revolutionized agricultural economy to a large extent in drought prone region of the Nashik district. The net profits up to Rs. 5 lakh ha^{-1} annum^{-1} have been demonstrated by some pomegranate growers. Therefore, the economic profitability according to size of pomegranate land holding was of prime consideration for this research work. In this context, primary data was extensively collected by random field survey method based on questionnaire from 70 pomegranate growers in Satana, Malegaon and Deola Tehsil of Nashik District. Then statistical technique of tabular analysis was employed to calculate establishment, operational and marketing costs. And relative profitability according to size viz. Small, Medium and Large pomegranate holdings was computed by cost benefit ratio for inter farm comparison. The study revealed that cost of plantation decreased with increase in size of holding. In contrast, operational cost increased with size of holding. Hence lowest cost benefit ratio 1: 2.06 was observed for small farms. Medium sized pomegranate farms orchards were well managed so the highest cost benefit ratio 1: 2.29 was realized by them. However, large farms ranked first in the gross cost of cultivation but it lies at second position in cost benefit ratio 1: 2.12. Finally it was concluded that the net return was nearly double the gross cost or capital invested in all farm sizes of pomegranate. Therefore, investment made in pomegranate enterprise was economically feasible or financially sound, profitable and in attractive propositions.

Keywords: *Size of Land Holdings, establishment, operational & marketing cost, Cost Benefit Ratio, Pomegranate orchids,*

Introduction: In addition to grapes, the pomegranate crop cultivated in Nashik District, has also obtained great economic significance in raising the income of even marginal farmers too. That also indicated its sustainability for small holdings for replacing subsistence farming as well as its significance in alleviating poverty levels of rural areas. Now growers of study region are taking pomegranate crop as livelihood and a good source of earning. The net return from orchards up to Rs. 5 lakh ha^{-1} annum^{-1} have been demonstrated by some growers. Overall, this crop has contributed in increasing rural economy and provided a good earning source especially for unemployed rural youths. As well as it revolutionized agricultural economy to a large extent in drier tracts of the district. This undoubtedly makes it necessary to go into the details of the economical aspects of pomegranate crop grown in the study area. The study of the economics of pomegranate is indispensable since there is no proper farm business data on its cost of production and marketing (Khunt and et. al. 2003).

Hypothesis: The socioeconomic status of farmers with respect to farm size has prime consideration therefore pomegranate production cost and net returns considerably vary according to size of holdings.

Objectives:

i) To assess the economic profitability of pomegranate crop according to size of land holding.

ii) To understand the causes of variation in cost benefit ratio of pomegranate growers.

Data Base: Primary data was extensively collected by random field survey method from 70 pomegranate growers in Satana and Malegaon Tehsil of Nashik District.

Methodology:

I. Selected growers were divided into 3 groups according to size of pomegranate holding for inter farm comparison; as below.

a)	**Small farmers** (less than 1 Ha)	=	35 (50%)
b)	**Medium farmers** (1.1 to 2 Ha)	=	21 (30%)
c)	**Large farmers** (more than 2 Ha)	=	14 (20%)
	TOTAL	=	70 (100%)

II. According to objectives of study the questionnaire into three parts was intended for the collection of primary data necessary for present study.

a) **Cost A** = Establishment cost ,
b) **Cost B** = Operational Cost ,
c) **Cost C** = Marketing cost.

III. Stastitical technique of tabular analysis was employed for financial calculations. And relative profitability according to size of pomegranate holding was computed by cost benefit ratio.

IV. The cost , type of material used considerable vary from one grower to another. In order to minimize the effect of cost variation, the average figures of all financial inputs in each category of respondents are considered for interpretation of results.

Discussion : The pomegranate fruit crop requires modern agro-equipments, skills and timely material and labour inputs. Therefore, the cost of pomegranate production was very high. The establishment (5.77%), operational (84.04%) and marketing (10.19%) costs together constituted the gross annual cost Rs. 2.03 lakh ha^{-1} of pomegranate cultivation for the study region as a whole (table No. 1).On the other side, net profit earned by the grower is the composite result of production cost, yield of pomegranate and prices for fruits in the market. In the existing edapho-climatic conditions of the study area, the pomegranate crop gave a good response to higher inputs applied by growers. It resulted in average yield 8.65 tons ha^{-1}. Moreover, good demand for pomegranate fruits in market leads to fetch the remunerative price Rs. 50.79 kg^{-1}. Consequently, attractive net returns net return Rs. 2.36 lakh ha^{-1} $annum^{-1}$ earned by respondents proves good economic profitability of pomegranate farming. Finally, the cost benefit ratio 1: 2.16 amply clears that why farmers lead to adopt this fruit crop on a large scale.

Table No. 1 Per Hectare Cost Benefit Ratio of Pomegranate Crop (Value in Rs.)

Sr. No.	Head	Subheads of Expenditure	Small	Medium	Large	Average	Cost in %
1	Establishment cost	Plantation	8688.0	8162.5	7636.9	8162.5	4.0
		Gestation period	3341.4	3617.9	3725.2	3561.5	1.8
		Subtotal	12029.4	11780.4	11362.1	11724.0	5.8
2	Operational cost	Material cost	77154.1	84120.7	90625.1	83300.1	41.0
		Labour	26756.7	32075.0	35084.5	31227.6	15.4
		Machinery	15498.6	12508.6	10866.1	14183.9	7.0
		Other costs	36939.6	43049.7	47238.1	42478.1	20.9
		Subtotal	156349.3	171754.2	183813.7	170639.1	84.0
3	Marketing cost	Harvesting	4297.3	4685.5	4485.7	4489.5	2.2
		Packing material	174.2	242.6	503.1	306.6	0.2
		Transport	3468.6	3336.4	2949.2	3251.4	1.6

		Market charges	12471.5	14164.8	11291.5	12642.6	6.2
		Subtotal	20411.6	22429.3	19229.5	20690.1	10.2
4	Gross cost	[Row1+2+3]	188790.3	205964.0	214405.3	203053.2	100.0
5	Yield	Ton	8.24	8.92	8.79	8.65	-
6	Price	Rs. kg^{-1}	47.20	53.50	51.66	50.79	
7	Gross return	[Row 5 x 6]	388928.0	477220.0	454091.0	439304.7	-
8	Net Profit	[Row 7 - 4]	200137.7	271256.04	239686.1	236251.4	-
9	Cost Benefit Ratio	[Row 7 ÷ 4]	1: 2.06	1: 2.32	1: 2.12	1: 2.16	-

(Compiled by researcher)

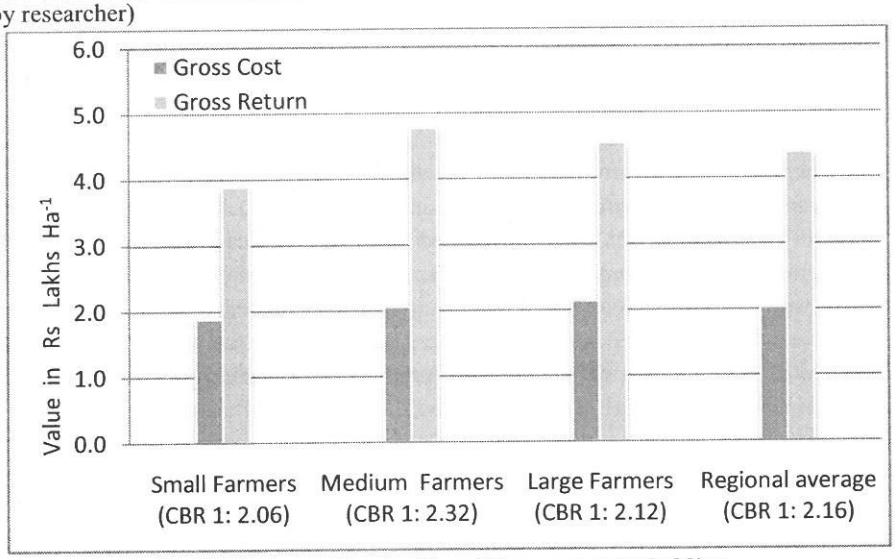

Fig.No. 1 Cost Benefit Ratio (CBR) According to Size of Pomegranate Holding

5.7 INTER-FARM COMPARISON OF COST BENEFIT RATIO:

Fruit farming enterprise is sensitive, higher skill requiring, a new approach and technology based. So the socioeconomic status of farmers with respect to farm size has prime consideration (Phule 2002). In this context, table No. 1 and fig. No.1 illustrates that the pomegranate production cost and net returns considerably varied according to size of holdings.

i) Large Farms: Large growers having good financial potentials adopted new technology, provided costlier inputs like liquid fertilizers, branded pesticides, growth hormones and micronutrients etc. Thus, they ranked first in gross cost (Rs. 2.14 lakh ha^{-1})for pomegranate cultivation. Despite of that they remained at second place in yield 8.79 tons ha^{-1} so also in net profit (Rs. 2.39 lakh ha^{-1}) and cost benefit ratio 1: 2.12. In this regard interviews with large growers clarified that it was difficult to take individual care because of the big number of trees. Moreover, they also faced problems in supervising the labour and managing the cultural practices in a timely manner. Thus, large size of farm limits the quality and quantity of pomegranate production when compared to medium farms.

ii) **Medium Farms:** The medium sized pomegranate orchards were well supervised and supplied with optimal material and labour inputs. Intensive cultivation practices, supervision and attempts for quality production have been made by medium farmers. Thus, best possible quantities 8.92 tons ha^{-1} along with good quality of fruits had been produced. As a result, medium category of growers earned highest net profits (Rs. 2.71 lakh ha^{-1}) and obtained top position in cost benefit ratio 1: 2.32.

iii) **Small Farms**: Due to financial problems small farmers applied low material inputs and also engaged family members for cultural operations. So, the gross cost of pomegranate cultivation (Rs. 1.89 lakh ha^{-1}) was lowest for small holdings. In other words, they were unable to provide required material inputs. It is a feature of inadequacy that effects on production. So the gross yields 8.24 tons ha^{-1} and quality of fruits declined. So the net profit Rs. 2 lakh ha^{-1} and cost benefit ratio 1: 2.06 was lowest for small holding.

FINDINGS Inter-farm comparison of cost benefit ratio cleared that cost of plantation decreased with increase in size of holding, in contrast, operational increased with size of holding. The growers belonging to small holding were unable to provide material at the right time and in appropriate quantities due to lower financial potentials. It resulted in poor quality production of fruits hence lowest cost benefit ratio 1: 2.06 was observed for small farms. But medium sized pomegranate farms orchards were well managed and supplied with optimum material and labour inputs so best possible quality of fruits was produced. Thus, the highest cost benefit ratio 1: 2.29 was realized for medium pomegranate farms. Large growers imputed branded chemical fertilizers, powerful pesticides for getting good results as well as dependent on hiring labor force. So they required high production expenses. But due to a large number of trees, the intensive care could not be taken that limited the quality of produce. So large farms ranked first in the gross cost of cultivation but it lies in second position in cost benefit ratio 1: 2.12.

"Finally it was concluded that the net return was nearly double the gross cost or capital invested in all farm sizes of pomegranate. Therefore, investment made in pomegranate enterprise was economically feasible or financially sound, profitable and in attractive propositions.

YIELD AND PROFIT OF POMEGRANATE: Provided that when all factors are favourable; the average productivity of pomegranate lands in study region is 20 tons ha^{-1} i.e. doubles of state average 10 tons ha^{-1}. Interestingly enough, well managed orchards and free from diseases, yielded as much as 25 tons ha^{-1}. The pomegranate orchards are intensively cultivated and the respondents were found to insist on higher yields. However, recently due to the epidemic spread of two deadly diseases namely wilt and bacterial blight on pomegranate, the yield has been considerably declined to less than 10 tons ha^{-1}. And there were no yields, when the severity of attacks was 100%.