

Financial feasibility of Jamun and the constraints faced by jamun growers in Sindhudurg District of Maharashtra

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ABSTRACT

An aim has been made in the present study to know the financial feasibility and the constraints faced by the jamun growers in the Sindhudurg district. A sample size of 120 was selected randomly from the Sawantwadi, Malvan, Kudal and Kankavli tehsils. It was revealed from the study that, Jamun growers follow cultural practices like pruning 52.5 percent and every farmer removes it. All the financial feasibility tests NPV, PBR, BCR and IRR in the jamun plantation were positive indicating that the jamun plantation is economically feasible. the net present value for jamun at 12 percent discount rates was Rs.118162.6, the benefit-cost ratio was 1.8, the internal rate of return was 27.44 and the payback period was 11 years. High labour charges, no harvesting implement and transportation problems were the constraints faced by the jamun grower.

INTRODUCTION

Jamun is an important minor fruit crop produced in the Sindhudurg district that has good marketing value. Jamun fruit crop with low maintenance gives better yield. Jamun as a whole plant has medicinal and commercial importance. Jamun seeds are used for curing diabetes. Jamun wood is one of the best timbers. Honey bees are reared on Jamun trees. Scientific studies on the importance of jamun cultivation will help create secondary income sources for farmers. In India, many tropical fruit species are cultivated, but most of them are not commercially cultivated. They are very well-liked since they have social and cultural significance in addition to giving rural residents a sizable source of income support.

METHODOLOGY

The following methods were used for the analysis of financial feasibility of jamun in Sindhudurg district.

Financial feasibility analysis

The economic evaluation of investment in jamun orchard was carried out by developing year wise cash outflows and cash inflows for the jamun orchard. The financial feasibility of investment in Jamun Orchard is judged with the help of following financial feasibility tests.

- I. Net Present Value (NPV)
- II. Pay Back Period (PBP)
- III. Benefit Cost Ratio (BCR)
- IV. Internal Rate of Return (IRR)

Following procedure is used for developing these tests

i) Net Present Value (NPV): It is the discounted value of net cash flow of the jamun orchard during its lifetime. It is computed as

$$NPV = \sum_{t=0}^1 \frac{R_t - C_t}{(1+r)^t}$$

Where,

R_t = Returns in period t'

C_t = Cost in period 't'

r = Discount rate

t- Project life

For viability of investment NPV should be positive at prevailing rate of interest.

ii) Pay Back Period (PBP): It is number of years the project takes to recover its cost from return.

iii) Benefit Cost Ratio (BCR): It is the ratio of the discounted value of all cash inflows on the discounted value cost outflows during life of the project. It is computed as

$$BCR = \frac{\sum_{t=0}^n R_t (1+r)^{-t}}{\sum_{t=0}^n C_t (1+r)^{-t}}$$

If BCR is greater than one, the investment is considered feasible

iv) Internal Rate of Return (IRR): The internal rate of return is the rate of discount at which NPV is zero. It is calculated by using the following formula.

$$IRR = \sum R_t (1+r)^{-n} - \sum C_t (1+r)^{-n} = 0$$

If IRR is greater than the prevailing rate of interest then investment is feasible.

CULTURAL PRACTICES IN JAMUN CROP

Cultural practices followed in jamun crop by the respondent farmers are listed in Table 1

Table 1 Cultural practices followed in jamun crop

Sr.no	Cultural Operation	Small (N=37)	Medium (N=58)	Large (N=25)	Overall (N=120)
1	Cleaning and removing dry Branches	37 (30.83)	58 (48.33)	25 (20.83)	120 (100)
2	pruning	18 (48.65)	25 (43.10)	20 (80)	63 (52.5)
	Total number of growers	37 (100)	58 (100)	25 (100)	120 (100)

(Figures in parentheses indicate the percentage to total)

Cultural practices include management techniques that were utilized by the farmers to maximize their farm income and crop productivity. It is observed from Table 1 that cultural practices like cleaning and removing dry branches followed by 100 percent and pruning followed by 52.5 percent farmers.

Economic evaluation of Investment in jamun

The investment made in Jamun Orchard in terms of capital flow out and flow in was spread over 20 years. To study the economic feasibility, data were discounted at the rate of 12 percent. The result is presented in Table 2

Table 2 Economic evaluation of investment in jamun

Sr. No.	Parameters	Discount Rate
		12%
1	Net Present Value	118162.6
2	Benefit Cost Ratio	1.8
3	Internal Rate of Return	27.44
4	Pay Back Period	11

In economic evaluation, the investment net present value manifests how much money investment will gain or lose in terms of today's funds. Table 2 revealed that the net present value for jamun at 12 percent discount rates was Rs.118162.6, the benefit-cost ratio was 1.8, the internal rate of return was 27.44 and the payback period was 11 years.

Table 3 Constraints faced by jamun growers in production and disposal of jamun.

Sr. No.	Constraints	No. of Jamun Growers	Percentage
1	No proper device for harvesting	120	100
2	Unavailability of skilled laborers for harvesting	114	95
3	The market is far away for selling/ Transportation problem	110	92
4	Trees are heightened with delicate branches so dangerous for harvesting	108	90
6	Damage due to monkeys and birds	96	80

It is seen from table 3.3 that from the study area majority of the jamun growers (100%) have problems harvesting jamun fruits no proper device is available for the harvesting of the jamun fruit. The unavailability of skilled laborers for harvesting Jamun is also one of the important constraints faced by 95% of sample farmers. Some farmers (92%) have problems with the transportation of Jamun. 80% of sample farmers are facing damage due to the monkeys and birds. Joshi *et al.* (2007) observed similar results in Sindhudurg district of Maharashtra.

Table 4 Suggestions given by jamun grower.

Sr. No.	Suggestions	Frequency of jamun growers	Percentage
1	Local varieties need to be preserved	117	97.5
2	Harvesting Device to be developed by the university	115	95.8
3	A dwarf variety of jamun must be developed	108	90.0

While taking the survey 115(95.8%) farmers suggested that Harvesting device should be developed by the university. 90 percent of farmers suggested that dwarf variety should be developed. 117 (97.5%) of farmers said that demand for local variety is more with good price so varieties need to be preserved.

CONCLUSION

Cultural practices like cleaning and removing dry branches followed by 100 percent and pruning followed by 52.5 percent farmers. All the financial feasibility tests NPV, PBR, BCR and IRR in the jamun plantation were positive indicating that the jamun plantation is economically feasible. The net present value for jamun at 12 percent discount rates was Rs.118162.6, the benefit-cost ratio was 1.8, the internal rate of return was 27.44 and the payback period was 11 years. High labour charges, no harvesting implement and transportation problems were the constraints faced by the jamun grower.

REFERENCES

- [1]. Khanizadeh S, Charles M T, Yu C Tao S and Fan L (2010) Effect of cultural practices on fruit quality and polyphenols content. In XXVIII *International Horticultural Congress on Science and Horticulture for People (IHC2010)*: International Symposium on 926 (pp. 401-406).
- [2]. Rymbai, D, Singh R, Feroze S M and Bardoli R (2012). Benefit-Cost ratio of Pineapple orchard in Meghalaya. *Indian Journal of Hill Farming* 25(1):9-12.
- [3]. Singh R P, Sharma Y P, Awasthi R P (1990) Influence of different cultural practices on pre-mature fruit cracking of pomegranate. *Progressive Horticulture*, 22(1-4), 92-96.
- [4]. Singh S P (1995) Favourite Agroforestry trees. Agrotech publishing academy, Udaipur :273-280
- [5]. Talathi J M, Naik V G and Mrs. Naik K V (2002) Economics of Rabi vegetables cultivation and marketing in Palghar district, *Journal of Agricultural Marketing* 2(8): PP 30-33.
- [6]. Tarange V T, Virkar Savita and Gore S T (2012) Costs, returns and profitability of Pomegranate in Buldana district. *Trends in Biosciences* 10(2), 2012 pp: 952-955.
- [7]. Wadkar S S, Thorat V A, Naik V G, Salavi B R, and Dalvi M B (2020) Production and disposal of jamun in Sindhudurg district *Agri.Econ.Res.Rev.*7:9.