

An economic analysis of acid lime production in Vijayapura district of Karnataka

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Abstract

Objectives: Acid lime is one of the remunerative crops, which is grown on commercial scale in Vijayapura district of Karnataka. Even though there is a gradual increase in both area and production of Acid lime in this district over the years, but still the growers are facing several problems leading to non-economic viability of crop hence, there is good scope for making comprehensive study help the farmers and policy makers to have firsthand prior knowledge on scientific cultivation.

Methods: The nature and sources of data were collected by adopting representative random sampling procedure through personnel interview. For the purpose of evaluating the objectives of the study, based on the nature and extent of data, the analytical techniques like tabular analysis, financial feasibility of investment standard tests viz. a) Net present worth, b) Benefit: cost ratio, c) Payback period and d) Internal rate of return were estimated by using the discounted cash flow techniques and the data were processing to draw meaningful results and conclusions.

Findings: The results shown that per ha establishment cost of lime was estimated at ₹366463.82 and ₹418158.40 in Indi and Sindagi taluks, respectively. The maintenance cost during gestation and bearing periods were worked out to be ₹181617.46 and ₹65068.73 in Indi taluk; ₹211798.87 and ₹102024.33 in Sindagi taluk, respectively. Financial analysis revealed that at 12 per cent discount rate, the NPV were ₹14,27,910 and ₹10,49,247; B:C Ratios were 2.83 and 2.09; PBP were 5.17 and 5.21 years and IRR were 28 per cent and 23 per cent in Indi and Sindagi taluks, respectively.

Application: As indicated by the financial measurements, the investment in Kagzi lime orchard was found to be financially feasible and as there is higher initial investment in Kagzi lime orchards, the farmers who wish to establish the orchards may be provided with the financial assistance by the institutional agencies.

Keywords: Acid lime, financial feasibility, Cost, Vijayapura.

1. Introduction

Citrus industry in India provides jobs and livelihood to millions of people. As per the estimate, citrus fruits are marketed to the tune of ₹10,000 crores every year and in Maharashtra alone it is estimated that citrus fruits are traded worth of ₹1500 crores every year in which Nagpur mandarin has major share (www.ccringp.org.in). Acid lime (*Citrus aurantifolia* Swingle) is another commercially important citrus crop grown across different states of the country. It is cultivated mainly in Maharashtra, Gujarat, Seemandhra, Telangana, Uttarkhand, Bihar, Assam, Karnataka and Madhya Pradesh.

Karnataka ranks 4th in production of acid lime with 2,83,470 tonnes and 8th in area (12,150 ha) and ranks first in productivity with 23.33 t/ha with a trade of worth 4,92,027 lakhs at current price [1]. Among different fruit crops, Acid lime is one of the remunerative dry land horticulture crops that is grown on commercial scale in Vijayapura district in an area of 6815 ha with a production of 1,62,475 tonnes [2]. But most of the times, it is observed that farmers get very low prices and consumers pay higher prices, implying higher profit margin by the market intermediaries.

Under these circumstances economic analysis of Acid lime cultivation and marketing would help to know what should be the minimum price to sustain and continue in the production. The economic performance of a crop is assessed on the basis of cost of production and net returns obtained per unit area. The empirical data on physical inputs used and net returns obtained by farmers per unit area would be useful to the farmers and policy makers to augment the productivity and production of this crop enterprise. So far very few studies have been conducted on the economics of production and marketing of Acid lime. In view of this, there is good scope for making comprehensive study in this regard, which would help the farmers and policy makers to have firsthand prior knowledge on scientific lime cultivation and ideal marketing aspects.

In order to be more objective, it was felt that to make the production of Acid lime as a profitable enterprise one should study cost and returns structure in Acid lime. Hence in order to address the above points, the survey was carried out in Indi and Sindagi taluks of Vijayapura district which comes under Northern Dry Zone of Karnataka with an aim to work out the cost and return structure in Acid lime in the study area.

2. Methodology

The primary data pertaining to the year 2015-16 were collected by using well-structured and pre-tested schedule through survey of sample respondents. The data relating to general information about the respondents, family size, age, education, occupation, sources of income, land holding were obtained from them. The method of personal interview was used to elicit the data from the respondents regarding various inputs used, yields and returns of the orchard.

Details on the annual cost of cultivation during bearing period, yield level and returns, method of sale and cost of marketing *etc.* were collected and it was ensured that the data made available by the respondents were relevant, comprehensive and reasonably correct and precise. For the purpose of evaluating the objectives of the study, based on the nature and extent of data, the analytical tools like tabular analysis and financial feasibility analysis were employed for processing the data to draw meaningful results and conclusions.

1. Tabular analysis

The Tabular analysis was done to study the general characteristics of sample respondents, to know average number of farmers cultivating Acid lime. These were documented using sums, averages and percentages.

2. Financial feasibility analysis

To evaluate the financial feasibility of investment in Acid lime orchard, the standard tests *viz.* a) Net present value, b) Benefit: cost ratio, c) Payback period and d) Internal rate of return were estimated by using the discounted cash flow techniques.

A review of the previous studies conducted in the evaluation of financial feasibilities of investments in plantation crops showed that all the studies have assumed constant returns and costs for the entire life of the project after the gestation period.

It was learnt during the time of data collection that the yield in Acid lime plants stabilize after tenth year and accordingly, returns have been considered to be constant after tenth year. On the other hand, maintenance costs for the entire life of the project after the gestation period were assumed to be constant. Hence financial analysis was carried out by incorporating these differences in the yield levels.

3. Net Present Value (NPV)

The present value represents the discounted value of the net cash inflows to the project. In the present study, a discount rate of 12 per cent was used to discount the net cash inflows representing the opportunity cost of capital. It can be represented by $NPV = \sum_{n=1}^N \frac{Y_n}{(1+r)^n} - I$ Where, Y_n = the net cash inflows in the year n ; r = discount rate; I = Initial investment. The decision rule associated with the Net Present Value is, the project will be accepted if its value is positive and reject if its value is negative (if the net present value is zero, it is a matter of indifference).

4. Benefit: Cost Ratio (B:C Ratio)

The Benefit Cost Ratio was worked out by using following formula.

$$B: C \text{ Ratio} = \frac{\sum \text{Discounted cash inflow}}{\sum \text{Discounted cash outflow}}$$

It measures the present value of returns per rupee of invested and it is a relative measure. The decision rule is that, accept the project, when B: C Ratio is greater than one, reject it when B:C Ratio is less than one and if B:C Ratio is zero, it is a matter of indifference.

5. Internal Rate of Return (IRR)

The rate at which the Net Present Value of the project is equal to zero is Internal Rate of Return (IRR) of the project. The net cash inflows were discounted to determine the present worth following the interpolation technique. The method of calculation of IRR is as under: $IRR = (\text{lower discount rate}) + (\text{difference between two discount rates}) \div (\text{present worth of net cash flow at lower discount rate} / \text{absolute difference between the present worth's of})$ Internal Rate of Return is a relative measure. To accept the project, the calculated IRR should be greater than the ongoing opportunity cost of capital.

6. Payback Period (PBP)

Payback period represents the length of time required for the stream of cash proceeds produced by the investment to be equal to the original cash outlay *i.e.* the time required for the project to pay for itself. In the present study, payback period was calculated dividing the initial investment by average net cash inflow. According to the payback criterion, the shorter the payback period, the more desirable is the project.

$$\text{Payback period} = \frac{\text{Initial investment}}{\text{Average annual net cash inflow}}$$

3. Results and discussion

The results of the analysis of cost of establishment in two taluks of Vijayapura district are presented in Table 1. The per hectare total cost of establishment were ₹366463.82 for the orchards in Indi taluk and ₹418158.40 for the orchards in Sindagi taluk.

Table 1. Investment pattern in Acid lime orchard in Vijayapura district (₹/ ha)

S.N.	Particulars	Indi taluk		Sindagi taluk	
		Cost	Percent	Cost	Per cent
A	Investment costs				
1	Rental value of land	15793.95	4.31	17212.03	4.12
2	Bore well	90488.23	24.69	100051.45	23.93
3	Pump set	34090.90	9.30	39930.55	9.55
4	Drip	32859.85	8.97	37345.68	8.93
5	Sprayer	1636.38	0.45	1393.53	0.33
6	Plant material	5318.18	1.45	5495.83	1.31
7	Digging of fit & planting	3643.95	0.99	3819.45	0.91
8	Staking	1015.15	0.28	1111.10	0.27
	Total	184846.59	50.44	206359.62	49.35
B.	Maintenance cost up to bearing period				
	Ist year	46393.92	12.66	52929.43	12.66
	IIInd year	43021.19	11.74	52103.47	12.46
	IIIrd year	45589.64	12.44	52813.79	12.63
	IVth year	46612.72	12.72	53952.17	12.90
	Subtotal (I+II+III+IV)	181617.23	49.56	211798.78	50.65
	Total Establishment Cost (A+B)	366463.82	100.00	418158.40	100.00

The results shown in Table 2,3 indicated that the average establishment cost incurred per ha in Indi taluk was ₹1,81,617.23 during the first four years; whereas, in Sindagi it was ₹211798.78 which is little higher compared to the investment in Indi taluk. The cost of labour, materials and fixed accounted for 27.23, 28.54 and 39.49 per cent of the total establishment cost in Indi taluk; whereas, it is 27.81, 30.31 and 36.93 percent of the total establishment cost in Sindagi taluk.

The major item of labour cost was on loosening of soil which formed 9.03 per cent and 9.41 per cent of total establishment cost in Indi and Sindagi taluks, respectively; followed by weeding, inter-cultivation and application of farm-yard manure and fertilizer, pruning contributed 5.66, 4.58, 2.97, 2.38 and 1.32 per cent, respectively in Indi taluk and 5.36, 4.59, 3.16, 2.49 and 1.45%, respectively in Sindagi taluk of the total establishment cost. This was mainly due to the fact that the loosening of soil was done twice in a month in the Acid lime orchards during the year of establishment.

Table 2. Maintenance cost of Acid lime during gestation (up to bearing) period in Indi taluk (₹/ ha)

S. No.	Particulars	I Year	II Year	III Year	IV Year	Total	Percent
I.	Variable cost						
A	Labour cost						
1	Inter-cultivation	2688.63	1583.33	1826.08	2214.65	8312.69	4.58
2	Loosening of soil around trunk	4272.05	3772.05	3889.65	4462.13	16395.88	9.03
3	Application of FYM	1306.83	1223.48	1094.70	1773.48	5398.49	2.97
4	Application of fertilizers	965.90	1028.03	880.68	1444.45	4319.06	2.38
5	Application of PPC	564.40	543.95	602.70	656.58	2367.63	1.30
6	Weeding	2389.40	2791.68	2871.20	2219.7	10271.98	5.66
7	Gap filling/ Pruning	597.73	575.75	511.38	711.38	2396.24	1.32
	Total labour cost (A)	12784.94	11518.27	11676.39	13482.37	49461.97	27.23
B	Material cost						
1	FYM (t)	5133.33	3893.95	4659.10	4339.03	18025.41	9.92
2	Fertilizers (kg)	4242.43	4038.63	3863.63	2916.68	15061.37	8.29
3	Plant protection chemicals	1393.53	1114.73	2647.30	2354.80	7510.36	4.14
4	Replacement and maintenance of irrigation structure	2886.38	2609.85	2528.03	3204.55	11228.81	6.18
	Total material cost (B)	13655.70	11657.2	13698.1	12815.1	51825.95	28.54
	Subtotal (A+B)	26440.61	23175.43	25374.45	26297.43	101287.90	55.77
	Interest on working capital @ 8.5%	2247.45	1969.90	2156.83	2235.28	8609.45	4.74
	Total variable cost	28688.06	25145.33	27531.28	28532.71	109897.40	60.51
II	Fixed cost						
1	Land revenue	46.98	46.98	46.98	46.98	118506.80	0.10
2	Rental value of owned land	15794.00	15794.00	15794.00	15794.00	228404.20	34.79
3	Depreciation of machinery and implements	255.30	409.85	575.75	595.45	346911.00	1.01
4	Interest on fixed capital @ 10%	1609.63	1625.08	1641.68	1643.63	575315.20	3.59
	Total fixed cost	17705.86	17875.86	18058.36	18080.01	71720.09	39.49
	Total cost (I+II)	46393.92	43021.19	45589.64	46612.72	181617.46	100.00

The material cost amounted to ₹101287.75 and ₹64204.45, respectively in Indi and Sindagi taluks. Out of this, the most important component was cost of farm-yard manures (9.92 % and 10.91 %), second one was cost of fertilizers (8.29 % and 7.90 %); the other important costs were cost of irrigation and cost of PPC Contributed to total establishment cost. Further, the major items in case of fixed cost was by rental value of land, it alone accounted for 34.79% and 32.51% in Indi and Sindagi, respectively. The results of the present study were not in line with study made on another citrus crop (kinnow) and this might be because of change in the climatic conditions of the study area and the type of soil in the study area was very hardy and variation in the prices which prevailed during the study period [3].

1. Maintenance cost during gestation period of Acid lime orchards

It was observed from the Tables 2, 3 that maintenance cost during gestation period in both Indi and Sindagi taluks had increased over the years (upto fourth year). This was due to more care taken to maintain Acid lime orchard during the initial period of establishment i.e. gap filling, loosening of soil around the trunk, pruning, weeding, application of PPC and application of FYM. Farm-yard manure application constituted the highest amount in the total labour cost per ha followed by loosening of soil around the trunk and application of fertilizer. Indi taluk growers used more quantity of manures and fertilizers than Sindagi taluks growers with the

motive of getting higher yields from the limited land holding as Acid lime crop is highly responsive to manures than the fertilizers. The plant protection chemical usage accounted for the least among the variable cost in both the taluks because of the fewer insects and disease infestation in the early stage. Further, it was also observed that the variable costs incurred per ha by the Indi lime growers during gestation period were more than the Sindagi farmers. This was mainly due to higher expenditure incurred on manures, fertilizers, loosening of soil around trunk, weeding and even higher fixed costs. These results were not in line with study on economics of lime and sweet orange in Andhra Pradesh [4].

Table 3. Maintenance cost of Acid lime during gestation (upto bearing) period in Sindagi taluk (₹/ ha)

S.N	Particulars	I Year	II Year	III Year	IV Year	Total	Percent
I.	Variable cost						
A	Labour cost						
1	Inter-cultivation	3502.32	1692.12	1916.75	2617.95	9729.14	4.59
2	Loosening of soil around trunk	5029.62	4225.95	5462.45	5222.15	19940.17	9.41
3	Application of FYM	1550.92	1547.22	1354.17	2237.97	6690.28	3.16
4	Application of fertilizers	941.35	1944.45	953.70	1444.45	5283.95	2.49
5	Application of PPC	564.82	796.30	703.70	774.70	2839.52	1.34
6	Weeding	2765.75	3071.75	2962.97	2562.50	11362.97	5.36
7	Gap filling / Pruning	703.79	625.47	831.02	900.47	3060.75	1.45
	Total labour cost (A)	15058.57	13903.26	14184.76	15760.19	58906.78	27.81
B	Material cost						
1	FYM (t)	5907.87	5976.85	5937.5	5279.07	23101.29	10.91
2	Fertilizers (kg)	5000.00	4796.30	4018.52	2916.67	16731.49	7.90
3	Plant protection chemicals	1393.52	1901.22	2864.57	2966.05	9125.36	4.31
4	Replacement, maintenance of irrigation	3648.15	3481.47	3565.75	4550.92	15246.29	7.20
	Total material cost (B)	15949.54	16155.84	16386.34	15712.71	64204.43	30.31
	Subtotal (A+B)	31008.11	30059.1	30571.1	31472.9	123111.21	58.13
	Interest on working capital @ 8.5%	2635.67	2555.02	2598.55	2675.2	10464.45	4.94
	Total variable cost	33643.78	32614.12	33169.65	34148.1	133575.66	63.07
II	Fixed cost						
1	Land revenue	64.82	64.82	64.82	64.82	259.28	0.12
2	Rental value of owned land	17212.00	17212.00	17212.00	17212.00	68848.12	32.51
3	Depreciation of machinery implements	255.55	440.75	581.47	726.85	2004.62	0.95
4	Interest on fixed capital @ 10%	1753.25	1771.75	1785.82	1800.37	7111.19	3.36
	Total fixed cost	19285.65	19489.35	19644.14	19804.07	78223.21	36.93
	Total cost (I+II)	52929.43	52103.47	52813.79	53952.17	211798.87	100.00

2. Total establishment cost structure in Acid lime orchard

The investment details of Acid lime cultivation are studied with a view to evaluate the feasibility of Acid lime production. It was revealed from the Table 1 that total discounted establishment cost per ha was lower in Indi taluk (₹366463.82) than Sindagi taluk (₹418158.40) and on an average it was ₹51694.58 per ha. It can be observed that the per ha initial investment made by Sindagi taluk growers was higher than Indi taluk and this was mainly due to higher expenditure incurred on levelling of land, higher initial investment on irrigation structure, pitting and also higher cost on planting materials and this can be attributed due to presence of undulated land and also higher depth of bore well dug. The findings of the present study were in line with study on economics of production and marketing of Citrus [5, 6].

3. Cost of cultivation of Acid lime during bearing period

In Indi taluk, the total annual maintenance cost of Acid lime was lower compared to Sindagi taluk with respect to per ha cost of cultivation (Table 4). The total variable cost per ha in Indi taluk (₹33132.87) was lower compared to Sindagi taluk (₹36318.16) and this was due to high labor cost in Sindagi taluk. Fixed cost in Indi taluk (₹31,935.83) was lower compared to Sindagi taluk (₹65706.18 per ha) and this can be attributed to very high rental value of land and amortized establishment cost in Sindagi taluk. However, the labour cost incurred per ha in both the taluks for loosening of soil around the trunk, application of FYM and fertilizers, and pruning

accounted to the highest share in the labor cost. This clearly indicated that Acid lime cultivation is a labour intensive operation. The pattern of labour employed in both taluks was more or less the same. This study results were similar with studies conducted on economics of production and marketing of lime in Vijayapura district [6].

Table 4. Maintenance cost of Acid lime in bearing period (5th year onwards) in Indi and Sindagi taluks of Vijayapura district

S. No	Particulars	Indi		Sindagi(₹/ha/year)	
		Total	Per cent	Total	Per cent
I.	Variable Cost				
A	Labour cost				
1	Inter-cultivation	2030.30	3.12	2353.25	2.31
2	Loosening of soil around trunk	2037.12	3.13	2382.40	2.34
3	Application of FYM	1850.75	2.84	1472.22	1.44
4	Application of fertilizers	1477.27	2.27	1527.77	1.50
5	Application of PPC	533.15	0.82	676.50	0.66
6	Weeding	2670.45	4.10	3016.45	2.96
7	Gap filling/ Pruning	603.02	0.93	724.75	0.71
8	Harvesting	2918.10	4.48	3067.12	3.01
	Total labour cost (A)	14120.16	21.69	15219.79	14.93
B	Material cost				
1	FYM (t)	5132.57	7.89	6250.00	6.13
2	Fertilizers (kg)	4727.27	7.27	5271.30	5.17
3	Plant protection chemicals	3263.25	5.02	2808.27	2.75
4	Replacement, maintenance of irrigation structure	3293.95	5.06	3923.60	3.85
	Total material cost (B)	16417.04	25.24	18253.17	17.89
	Subtotal (A+B)	30537.20	46.93	33472.96	32.83
	Interest on working capital @ 8.5%	2595.67	3.99	2845.2	2.79
	Total Variable Cost	33132.87	50.92	36318.16	35.62
II	Fixed cost				
1	Land revenue	46.975	0.07	64.825	0.06
2	Rental value of owned land	15793.95	24.27	17212.03	16.87
3	Amortized establishment	12706.83	19.53	41934.73	41.1
4	Depreciation of machinery and implements	484.85	0.75	521.3	0.51
5	Interest on fixed capital @ 10%	2903.25	4.46	5973.3	5.85
	Total fixed cost	31935.83	49.08	65706.18	64.4
	Total cost (I+II)	65068.73	100.00	102024.33	100.00

4. Annual yields and returns structure in Acid lime

It is evident from the results presented in the Table 5 that the average yield obtained in Indi taluk was more (24.95 t/ha) than in Sindagi taluk (23.25 t/ha).

It was due to better management practices taken up by the Indi taluk lime growers. However, the sale price was inversely proportional to arrivals in both the taluks. The per ha gross returns realized by Indi taluk farmers were higher than Sindagi taluk farmers.

This difference in returns could be accounted due to higher levels of yield realized by Indi taluk farmers and even in terms of production of good quality fruits due to better management practices adopted which fetched higher market price for Indi taluk farmers. Accordingly, it was also found that the average annual maintenance cost per ha incurred by Indi taluk growers was lower and therefore the lower cost coupled with higher gross returns realized by Indi taluk lime growers resulted in higher net returns than Sindagi taluk farmers. However the hypothesis is proved that the lime cultivation is profitable since the net returns in both taluks from the production of lime is higher.

Table 5. Yield and returns structure of Acid lime in the study area

Particulars Period	Indi		Sindagi	
	Yield (t/ha)	Total returns	Yield (t/ha)	Total returns
5th	12.75	155868.75	15.25	186431.25
6th	18.68	354062.75	15.25	264130.00
7th	24.68	554171.00	19.20	332544.00
8th	28.23	602169.53	19.20	332544.00
9th	31.00	661372.60	24.20	516297.33
10th	31.00	629687.50	24.20	491562.50
11th	32.33	656601.58	28.23	573320.33
12th	32.33	656601.58	31.08	631210.95
13th	32.33	656601.58	31.08	631210.95
14th	32.33	656601.58	31.08	631210.95
15th	32.33	656601.58	31.08	631210.95
16th	32.33	656601.58	31.08	631210.95
17th	31.00	641373.08	28.93	617103.75
18th	28.23	602169.53	28.93	617103.75
19th	26.00	554700.00	28.93	617103.75
20th	23.75	506697.13	26.55	566434.05
21th	23.65	504563.65	26.55	566434.05
22th	23.65	504563.65	18.65	397890.58
23th	23.65	504563.65	21.55	459760.95
24th	23.65	504563.65	21.55	459760.95
25th	21.55	459760.95	18.93	403757.60
26th	21.55	459760.95	18.93	403757.60
27th	21.55	459760.95	18.93	403757.60
28th	20.25	432025.95	18.93	403757.60
29th	16.75	357354.80	13.93	297084.53
30th	16.25	346687.50	13.93	297084.53
Average	24.95	518316.50	23.25	477775.38

5. Financial feasibility of investment in acid lime cultivation

The analysis of financial feasibility of long-term investments in Acid lime is essential to evaluate whether the high investments made in the initial period of the project would yield sufficient returns to cover the cost and recover the investment in a reasonable period of time. In this regard, the use of discounted cash flow techniques was found to be more appropriate. Financial feasibility of investment in Acid lime in Indi and Sindagi taluks were analyzed using the project evaluation techniques such as Net Present Value, Benefit-Cost Ratio, Payback Period and Internal Rate of Return (Table 6).

Table 6. Financial feasibility of investment in Acid lime orchard

S. No	Particulars	Indi taluk	Sindagi taluk
1	Payback Period (Years)	5.17	5.21
2	NPV (/ ha)	14,27,910	10,49,247
3	B : C Ratio	2.83	2.09
4	IRR (%)	28.00	23.00

6. Payback Period (PBP)

The payback Period in establishing Acid lime was less in Indi taluk (5.17 years) as compared to Sindagi taluk (5.21 years) and this was because of better practices adopted in the initial stages of crop growth. The period of recovery of investment would be within 8 years in consideration management of the long economic period of 30 years during which the farmer earned sufficient income from the Acid lime orchard.

7. Net Present Value (NPV)

In Indi taluk, the NPV was higher (₹14,27,910) than that of Sindagi taluk (₹10,49,247). The higher magnitude of net present value in Indi taluk may be attributed to realization of continuous high returns during the economic life.

8. Internal Rate of Return (IRR)

The IRR worked out for Indi taluk was higher (28.00 %) compared to Sindagi (23.00 %). The IRR values were found to be higher than the opportunity cost of capital in both the taluks *i.e.*, the lending rate (12 per cent at present rate of interest) of commercial banks for long term loans, indicating a higher average earning power of money invested in Acid lime cultivation. This financial analysis results were similar with studies conducted on economics of production and marketing of lime in Vijayapura district [7].

9. Benefit Cost Ratio (B: C Ratio)

The benefit-cost ratio at 12% discount rate was found to be 2.83 and 2.09 in Indi and Sindagi taluks, respectively. As these values were above unity and the investment in both the taluks for Acid lime cultivation could be considered to be a profitable venture. Moreover, among both the taluks, the benefit cost ratio of Indi taluk was higher than the Sindagi taluk which showed that investment on Acid lime cultivation in Indi taluk was relatively more attractive than Sindagi taluk. The foregoing results revealed that B: C Ratio was greater than unity, NPV was positive and IRR was higher than the prevailing interest rate (12 %) of banks. The investment on Acid lime would be recovered before 8 years with 12% rate of interest in both the taluks. Thus, the results of this study justified farmer's investment in Acid lime cultivation. The financial feasibility results of the present study were in line with study on kinnow cultivation, in Ferozpur district of Punjab for overall orchard groups [5].

10. Conclusion

As indicated by the financial measurements, the investment in Acid lime orchard was found to be financially feasible and as there is higher initial investment in Acid lime orchards for farmers who wish to establish the orchards, financial assistance may be provided by the institutional agencies. The share of Acid lime growers in the consumer rupee was very low as it was evident by the study due to the irregularities in marketing. Hence, Acid lime may be included in the list of notified agricultural commodities and to be brought under the preview of Karnataka Agricultural produce Marketing Committee (Regulation) Act 1966.

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