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Constraints faced by the farmers in rejuvenation of mango orchards in South Konkan region of Maharashtra

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Abstract

Rejuvenation of mango orchard is a good technology useful for increasing production of mango orchard. There is lot of saving on labour as well as inputs on different operations like harvesting and plant protection. Efforts are made in the paper to identify the different constraints faced by the farmers in adoption of the technology. Data of 40 rejuvenated and 40 non-rejuvenated mango orchards were collected by survey method and results are presented. It was observed that, net income obtained from rejuvenated orchard was more as compared to non-rejuvenated orchard. Labour saving was also more in rejuvenated orchards. But farmers are not following rejuvenation practices. Hence, the study was conducted to find the reason or constraints faced by farmers in rejuvenated orchard. In rejuvenated group 75 per cent farmers stated that the major constraint faced by them was lack of technical knowledge regarding rejuvenation practices followed by 70 per cent farmers who opined that lack of knowledge about spraying and time of spraying, high cost of labour and non-availability of insecticides and pesticides in time.

Keywords: Mango, constraints, rejuvenated orchard etc

Introduction

The Konkan region in the Maharashtra state is famous for mango production with an area of about 0.1 million hectare under mango cultivation. However, the production is only 1.34 Lakh MT with a productivity of about 2.07 MT/ha. Particularly, the two districts of the region viz. Ratnagiri and Sindhudurg are known as 'Mango baskets'. Alphonso mango is an important cash crop of Konkan region, but productivity of this crop is very low as compared to state and national level. Among the various technologies accepted by mango growers, rejuvenation of mango orchard is prominent one.

The rejuvenation practice in mango makes the plant manageable, easy for adoption of appropriate package of practices, improving vigour and yield. Thus rejuvenation in mango is adoption of suitable pruning, adequate nutrient and plant protection management, development of appropriate canopy and other management operations in a holistic manner. Though rejuvenation of mango trees is a good technology developed by D.B.S.K.K.V., Dapoli, farmers are not giving too much response to this technology. There efforts are made to study the constraints faced by the farmers in adoption of this rejuvenation technology.

Methodology

For the present study two districts namely Ratnagiri and Sindhudurg were selected purposively, where alphonso mango has major area under cultivation. From each district two tehsils were selected randomly and from each tehsil five villages and from each village two rejuvenated and two non-rejuvenated orchards were selected randomly. Thus data were collected from 40 rejuvenated and 40 non-rejuvenated mango growers. The data was collected by survey method through personal interviews from the selected mango growers, with the help of pre-tested comprehensive schedule specially designed for the purpose.

Result and Discussion**A) Impact of rejuvenation practice on yield and income of farmers**

Analysis of data with respect to yield and income from rejuvenated and non-rejuvenated mango orchard was done and presented in Table 1. In non-rejuvenated orchard per hectare

yield of mango obtained up to 32.62 quintals while gross income derived from the orchard was estimated to Rs. 158207. However from matured rejuvenated orchard (after 5 years of rejuvenation) per hectare yield 48.46 quintals of mango fruits were obtained, while income obtained from same garden was Rs.220008. It is also revealed from the table that the total cost of cultivation (Cost-C) was observed to be more in non-rejuvenated orchard (Rs.135896) as compared to mature rejuvenated orchard (Rs. 158829). However the per hectare yield obtained from non-rejuvenated orchard was worked out to 32.62 quintals, while from rejuvenated orchard it was found to be 52.14 quintals. The Benefit – Cost ratio was also estimated and found to be more in rejuvenated mango orchard (1.60) as compared to non-rejuvenated orchard (1.16). The net returns at cost-C was found to be Rs. 95093 in rejuvenated orchard while it was worked out to be Rs. 22311 in non-rejuvenated orchard.

It is indicated from the study that after rejuvenation, the orchards generate higher level of income from the garden, but the mango growers in the study area are reluctant to rejuvenate their orchards. Though this technology is cost effective and saved labour, the farmers are not giving much response for this practice. Therefore, emphasis is done to find out the reasons for non-adopting this technology. Selected farmers were interviewed for constraints faced by them for adopting this technology are presented here.

B) Constraints faced by the farmers in rejuvenated and non-rejuvenated mango orchards

The information regarding the constraints faced by the farmers in rejuvenation of mango orchards was collected, analyzed and is presented in Table 2.

The mango growers, who have rejuvenated the orchards faced different types of constraints, which includes lack of technical knowledge regarding rejuvenation practices, and other common problems like, fertilizers, insecticides and pesticides not available in time, non-availability, of skilled labour for rejuvenation of orchards, watch and ward problem, high cost of labour and input, high incidence of disease and intensity of pest, menace of monkey etc.

Table 2. revealed that in case of rejuvenated group 75 per cent of the farmers reported that the major constraint faced by them was lack of technical knowledge regarding rejuvenation practices followed by 70 per cent farmers who opined that lack of knowledge about spraying and time of spraying after following rejuvenation technique, high cost of labour and non-availability of insecticides and pesticides in time. Similar types of constraints were faced by the farmers in non-

rejuvenated group. Also it is observed from Table 3, that cent percent farmers who have not rejuvenated their orchard stated that they have some fear in their mind that after pruning / cutting of branches the mango tree may be die, similarly farmers are under impression that after rejuvenation up to 3-4 years orchards would produce only vegetative growth and enable to give sizable production. Another constraint faced by the farmers were lack of technical knowledge (90.00%), no awareness of the rejuvenation practice (80.00%) and non-availability of skilled labour for rejuvenation and required inputs *i.e.* plant protection material as an when required (75.00%).

C) Opinions of farmers regarding rejuvenation practice:

The opinions of respondent farmers were also collected regarding adoption of rejuvenation practice in mango and presented in Table 4. taken. The information regarding it is shown in Table 4.

It is observed from Table 4, that about cent per cent respondent opined that after rejuvenation of old and senile plants they get higher and quality production of mango. About 97.50 per cent respondents expressed that the harvesting of mango is difficult and time consuming practice in non-rejuvenated orchards due to long spreader branches and therefore rejuvenation technology is good technology to overcome that constraints. Nearly 87.50 per cent farmers opined that in non-rejuvenated orchards some times immature fruits were harvested, these fruits do not fetch good prices in the market. At overall level farmers have accepted this technology but proper dissemination of this technology among the farmers is needed.

Thus at overall level it was observed that the rejuvenation technology is accepted by the farmers. But still there is some fear in their mind that after pruning of branches if sprouting will not take place and their whole orchard might be damage. Therefore they were not willing to follow rejuvenation practice in their whole orchards. But now with the positive result of rejuvenation the mind set of farmers might be changing. There is a need to provide proper trainings, technical knowledge for changing their mind. Extension agencies of University as well as Agriculture Department, Government of Maharashtra state need to conduct demonstrations in different villages so that farmers will be convinced to follow this technology. In Konkan region about 1.84 lakh ha area is under mango out of which major area is under old and senile plantation. If efforts will be made to convert this low productive area under rejuvenation there will be drastic change in the total economy of the region.

Table 1: Per hectare comparative cost of cultivation of non-rejuvenated and rejuvenated mango orchard (Amt. Rs.)

Sr. no.	Particulars	Non-Rejuvenated orchards	Rejuvenated orchards		
			Group I (N=9)	Group II (N=31)	Overall (N=40)
Hired labour					
1	a) Male	15135	11394	15687	14640
	b) Female	6400	6726	4748	4080
	Total	21535	18120	20435	18720
2	Machine	985	8200	8255	8243
3	Manure	6600	4200	7350	6641
4	Fertilizers	9675	9060	11373	10853
5	Paclobutrozol/Growth regulator	5870	2070	3340	3054
6	Plant protection chemicals	11807	11407	16415	15178
	Input Cost	56472	53057	67168	62689
7	Interest on working capital	7341	6897	8732	8150
8	Depreciation on implements	800	843	895	883
9	Land revenue and other cases	50	51	52	51
	Cost –A	64663	60848	76847	71773

10	Rental value of land	26367	27014	42321	36668
11	Interest on fixed capital	900	945	985	976
12	Amortization value (A)	21500	21500	21500	21500
	Amortization value (B)	-	1112	1371	1297
	Cost –B	113431	111419	143024	132214
13	Family labour				
	a) Male	17910	8651	11952	12240
	b) Female	4555	5129	3853	3400
	Total	22465	13780	15805	15640
14	Cost-C	135896	125199	158829	147854
15	Yield in quintal	32.62	34.78	52.14	48.46
	Rate	4850	4530	4870	4540
16	Value of produce	158207	157553	253922	220008
17	Benefit cost ratio	1.16	1.26	1.60	1.49
18	Net returns at				
	a) Cost –A	93544	96705	177075	148235
	b) Cost –B	44776	46134	110898	87794
	c) Cost-C	22311	32354	95093	72154
19	Per quintal cost of cultivation	4166	3600	3046	3051

Table 2: Constraints faced by the farmers in rejuvenated mango orchards.

Sr. No.	Constraints	Rejuvenated orchards (N=40)
1.	Lack of technical knowledge regarding rejuvenation practices	30 (75.00)
2.	Lack of knowledge about spraying after adoption this technique and time of spraying	28 (70.00)
3.	High incidence of pests and diseases	22 (55.00)
4.	Psychologically not ready for rejuvenation	-
5.	Non availability of skilled labour for rejuvenation of orchards	20 (50.00)
6.	Menace of monkey	20 (50.00)
7.	High wages of labour	28 (70.00)
8.	Non availability of insecticides and pesticides in time	28 (70.00)
9.	Non availability of fertilizer in time	27 (67.00)
10.	Watch and ward problem	25 (62.00)
11.	High cost of inputs	24 (60.00)

Table 3: Reasons for non-adoption of rejuvenation technology by the farmers.

Sr. No.	Constraints	Non-Rejuvenated orchards (N=40)
1	Fear that after cutting of branches plants may not survive	40 (100.00)
2	After rejuvenation in the beginning years i.e. up to 3 years there is no yield	38 (95.00)
3	Lack of technical knowledge about rejuvenation practice	36 (90.00)
4	Unawareness of the rejuvenation practice	34 (85.00)
5	Non- availability of skilled labour, inputs like plant protection material etc.	30 (75.00)

Table 4: Opinions of farmers regarding rejuvenation practice

Sr. No.	Particulars	Frequency (No.)	Percentage
1	After rejuvenation old and senile plants give good yield	40	100.00
2	Harvesting and spraying is difficult and time consuming practice in non-rejuvenated orchards due to long spreader branches, rejuvenation technology is good solution for it	39	97.50
3	Management practices are as easy and thereby reduce post-harvest losses	35	87.50

Conclusion

The study revealed that the rejuvenation technology is accepted by the farmers but still farmers has some doubt in their mind about this technique, however due to positive result of rejuvenation technique their mind set might be changing, there fare there is a need to provide proper trainings about technical knowledge of rejuvenation technology.

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