

Original Research Article

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## Impact of Training Programme on Coconut Growers in Hassan District, India

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### ABSTRACT

#### Keywords

Vocational training programme, Integrated crop management, Coconut tree climbing machine, Knowledge, Adoption.

#### Article Info

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The study was conducted in Hassan District where Vocational training programmes on Integrated Crop Management (ICM) in Coconut and use of coconut tree climbing machine were conducted by Krishi Vigyan Kendra (KVK), Kandali, Hassan. These programmes were evaluated to assess their impact on the knowledge and extent of adoption of improved cultivation practices of coconut by the trainees. The data was collected from randomly selected 129 farmers who participated in the training programme conducted at Krishi Vigyan Kendra, Hassan. Semi structured interview schedule was used for data collection, using personal interview. The study find out that the trainees possessed medium to high level of knowledge on improved cultivation practices after participating in the programme. The cumulative knowledge gain of the farmers on different improved cultivation practices of coconut for enhancing production of coconut was found to be significant. Therefore, the adoption of improved cultivation practices of coconut was also medium to high. Thus, the trainings conducted at KVK, had motivated the trainees for adopting the improved cultivation practices in order to get more production and income.

### Introduction

Coconut palm is considered as most useful tree in the world, grown in more than 93 countries of the tropical region. All the parts-of the palm are useful to making in one way or other. On account of this, the palm has been regarded as Kalpavriksh. India occupies a predominant position in respect of production of coconut in the world. Coconut is grown in 1.94 million ha.in 19 states and three Union Territories of the country producing 15,730 million nuts with an average productivity of 8303 nuts per ha or 44.27 nuts/palm/year (Annonymus, 2015).

The four southern states accounts for more than 90 per cent of the total production in the

country. (More than 30 per cent of the coconut comes from Tamil Nadu followed by Kerala. Karnataka stands at third place in production i.e., one fourth of India's coconut produce come from the Karnataka. Coconut is one of the major plantation crop grown in the Hassan district, with an area of 61,000ha.

The prevalent growing belts in Hassan district are Arasikere, Channarayapatna and Holenarasipura taluks which comes under rainfed situation. Due to scarcity of labours, farmers are facing difficulty in harvesting of nuts. In addition, due to uneven distribution of rainfall, incidence of pest and diseases culminates into lower yields. On an average

farmers are getting yield of 50-60nuts/palm/year.

Considering these facts Coconut Development Board (CDB), Bangalore and Karnataka State Rural Livelihood Promotion Society (KSRLPS), Rural Development and Panchayat Raj (RDPR), Bangalore in collaboration with Krishi Vigyan Kendra (KVK), Kandali, Hassan conducted sponsored vocational training programme on “Plant Protection and Coconut Climbing”[Friends of the Coconut Tree (FoCT)] during 2012-13 to 2015-16 to encourage farmers to adopt integrated crop management practices and socio economic upliftment of the farmers through productivity improvement, cost reduction, efficient collective marketing and processing and product diversification and also to create self-employment among rural youth by introducing coconut climbing machine. The hands on training on integrated crop management and coconut climbing by using coconut tree climbing machine was given to the rural youths of the Hassan district, in 11 batches comprising of 20 members in each batch. The present study was undertaken to find out the impact of training programme on knowledge level and extent of the adoption of improved cultivation practices of coconut by the trainees.

### **Materials and Methods**

The impact of training programme is operationalized as the extent to which farmers use their newly gained knowledge and adopt the improved cultivation practices of coconut in their farm. Questionnaire survey was carried out for the impact assessment of the trainings with a minimum time gap of one year. The data were collected from randomly selected 129 rural youths who were undergone “Plant Protection and Coconut Climbing” training programme at KVK, Hassan.

Questionnaire was designed to elicit the information regarding the post training effects on the rural youths who participated in the training programme. Social and personal information are collected and knowledge test was made based on the package of practices of coconut cultivation which were fitted against four point continuum i.e., fully understood, understood, partially understood and not understood with scores from 3 to 0.

Based on the scores obtained the respondents were grouped into 3 categories viz., low, medium and high groups by taking mean and standard deviation. Extent of adoption of the improved cultivation practices/techniques were recorded on a three point continuum scale viz., full adoption, partial adoption and non-adoption with scores of 2, 1 and 0 respectively. Percent knowledge gain and percent extent of adoption of improved cultivation practices/techniques was calculated by using following formula.

The knowledge gain by the rural youths was calculated by the following formula.

$$\text{Knowledge Gain (\%)} = \frac{G_j}{G_m} \times 100$$

Where,  $G_j = \sum G_{ij}/N$

Where  $i = 1, 2, \dots, N$

$j = 1, 2, \dots, K$

$N$ =total number of respondents = 129

$K$ =total number of techniques/practices = 20

$G_m$ =Maximum knowledge gain score = 3

$G_j$ =Mean knowledge gain score of a techniques/practices

The adoption of the techniques by the farmers was calculated by

No. of farmers adopted a technique ( $A_t$ )  
Per cent of adoption = -----  
Total No. of farmers surveyed

Where,  $t=1, 2, \dots, m$

$m$  = Total number of techniques/practices = 20

## **Results and Discussion**

The profile of the trainees presented in table 1, reveals that majority of the trainees (71.32%) were young. It may be because of the reason that according to the training guidelines the participant trainee should be within the age of 35 years. Hence majority of them were young. Majority of them were educated up to secondary education (32.56%), while 80.26 percent of them were depending upon agriculture as their main occupation. Majority (41.86%) of the trainees covered in the training programme belongs to the marginal land holding group. Around 44 percent of them belong to low annual income group category followed by medium (31%) and high (24%).

The fact depicted in figure 1 reveals the overall knowledge and adoption level of the trainees towards the improved cultivation practices of the coconut who participated in the training programme.

Sixty per cent of the trainees possess medium level of knowledge about the improved cultivation practices of the coconut followed by high and low level. Whereas, forty three per cent of the trainees belongs to medium followed by high (37%) level of adoption.

This infers that the training programme conducted had positive effects on trainees to increase their knowledge level and adopt improved cultivation practices of coconut and also use of coconut climber machine for income generation. These results are in conformity with the findings of Das and

Sharma (1998) who also found that training programmes contributed significantly in improvement of respondent's knowledge about scientific practice.

The results presented in table 2 revealed that majority of the trainees fully adopted the improved cultivation practices like climate and soil type required for coconut cultivation, soil and water testing, method of soil sample collection in coconut garden, sustainable varieties of coconut, planting material and site selection, spacing and systems of planting, preparation of land and planting methods, recommended dosage of fertilizer application, use of bio-fertilizers, green manure and cover crops, mixed/Inter/Multi-species cropping system in coconut garden, crown cleaning and management aspects, post-harvest technologies in coconut, marketing channels and use of coconut climber for income generation. This may be due to the fact that the trainees who participated in the programme were deriving substantial income from coconut cultivation. This might have influenced them to fully adopt the improved cultivation practices of coconut cultivation.

Around forty two per cent of the trainees partially adopted water requirement and management techniques. This could be due to the fact that majority of the farmers in Hassan district were cultivating coconut under rainfed condition. This results them to practice water management techniques partially. Thirty nine per cent of them partially adopted the improved practices like micro-nutrients application, identification of nutrient deficiency symptoms and corrective measures. This may be due to timely non-availability of micro-nutrients and lack of knowledge on nutrient deficiency symptoms and corrective measures. Whereas, forty three per cent of them were not adopted value addition in coconut (43.4%), disease incidence control measures (41.1%) and pest incidence control measures (38.8%).

**Table.1** Profile of the trainees undergone training

n=129

Sl. No.	Variables	Category	No.	Percentage
1.	Gender	Male	117	90.69
		Female	12	9.31
2.	Age	Young (18-25 Years)	92	71.32
		Middle (25-36 Years)	37	28.68
3.	Education	Illiterate	2	1.55
		Functionally Literate	11	8.53
		Primary School	21	16.28
		Secondary	42	32.56
		Higher Secondary	35	27.13
		Degree/ Diploma	18	13.95
4.	Land Holding	Marginal Farmers (< 2.5 acres)	54	41.86
		Small farmers (2.5 to 5 acres)	43	33.33
		Medium farmers (> 5 acres)	32	24.81
5.	Family Occupation	Agriculture	104	80.62
		Agril.+ Wage Labour	21	16.28
		Wage Labour	04	3.10
6.	Annual Income	Low	57	44.19
		Medium	41	31.78
		High	31	24.03

**Table.2** Extent of adoption of techniques/practices discussed during the training programme by the trainees

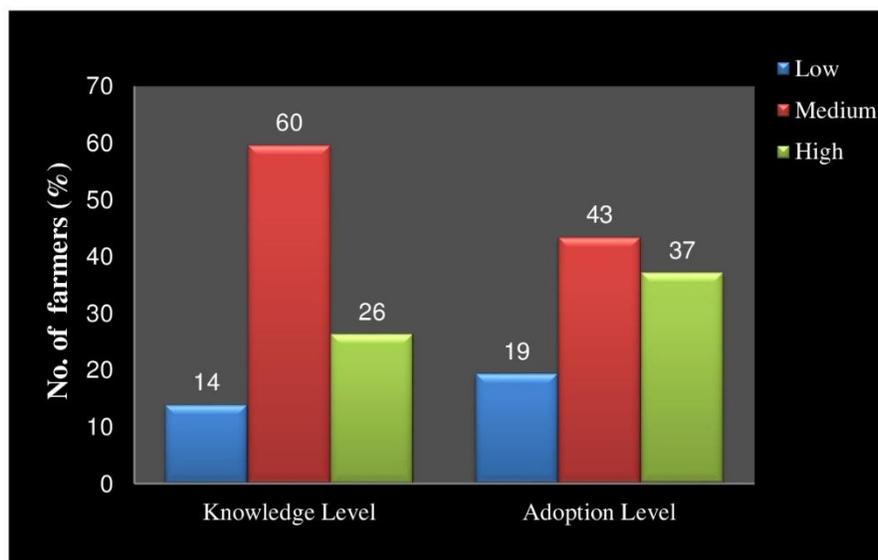
(n=129)

I. No.	Techniques/Practices discussed during the training programme	Full Adoption		Partial Adoption		Non Adoption	
		No.	%	No.	%	No.	%
1	Climate and soil type required for coconut cultivation	53	<b>41.1</b>	50	38.8	26	20.2
2	Soil and water testing, method of soil sample collection in coconut garden	50	<b>38.8</b>	45	34.9	34	26.4
3	Varieties of coconut and their sustainability	55	<b>42.6</b>	39	30.2	35	27.1
4	Planting material and site selection	56	<b>43.4</b>	44	34.1	29	22.5
5	Spacing and systems of planting	58	<b>45.0</b>	50	38.8	21	16.3
6	Preparation of land and planting methods	52	<b>40.3</b>	51	39.5	26	20.2
7	Recommended dosage of fertilizer application	59	<b>45.7</b>	41	31.8	29	22.5
8	Importance and use of recommended dose of micro-nutrients	48	37.2	51	<b>39.5</b>	30	23.3
9	Availability and use of bio-fertilizers	58	<b>45.0</b>	48	37.2	23	17.8
10	Use of green manure and cover crops	56	<b>43.4</b>	47	36.4	26	20.2
11	Water requirement and management techniques	52	40.3	54	<b>41.9</b>	23	17.8
12	Mixed/Inter/Multi-species cropping system in coconut garden	71	<b>55.0</b>	32	24.8	26	20.2
13	Nutrient deficiency symptoms and corrective measures	42	32.6	51	<b>39.5</b>	36	27.9
14	Identification of disease incidence and their management	42	32.6	34	26.4	53	<b>41.1</b>
15	Identification of pests incidence and their management	48	39.0	30	23.2	51	<b>40.0</b>
16	Crown cleaning and management aspects	72	<b>55.8</b>	29	22.5	28	21.7
17	Post-harvest technologies in coconut	60	<b>46.5</b>	36	27.9	33	25.6
18	Value addition in coconut	26	20.2	47	36.4	56	<b>43.4</b>
19	Availability of marketing channels for coconut	61	<b>47.3</b>	39	30.2	29	22.5
20	Use of coconut climber for income generation	98	<b>76.0</b>	31	24.0	0	0.0

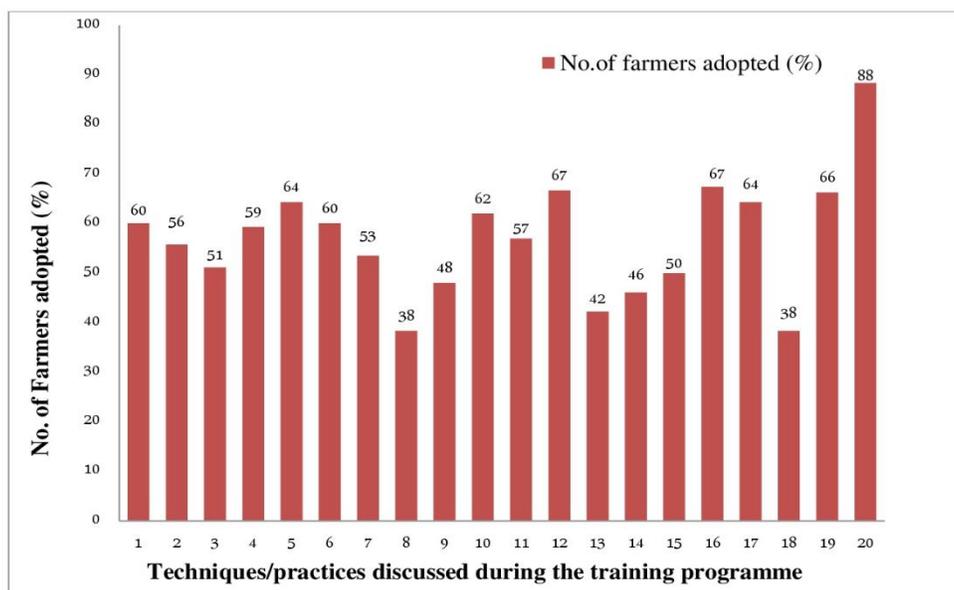
**Table.3** Knowledge gain and per cent adoption of improved cultivation practices by the trainees discussed during the training programme

Sl.No.	Techniques/practices discussed during the training programme	Knowledge gain (%)	No. of farmers adopted (%)
1	Climate and soil type required for coconut cultivation	68	60
2	Soil and water testing, method of soil sample collection in coconut garden	75	56
3	Varieties of coconut and their sustainability	60	58
4	Planting material and site selection	72	60
5	Spacing and systems of planting	68	64
6	Preparation of land and planting methods	70	60
7	Recommended dosage of fertilizer application	66	62
8	Importance and use of recommended dose of micro-nutrients	58	57
9	Availability and use of bio-fertilizers	70	64
10	Use of green manure and cover crops	84	62
11	Water requirement and management techniques	66	61
12	Mixed/Inter/Multi-species cropping system in coconut garden	76	67
13	Nutrient deficiency symptoms and corrective measures	54	52
14	Identification of disease incidence and their management	56	46
15	Identification of pests incidence and their management	62	49
16	Crown cleaning and management aspects	79	67
17	Post-harvest technologies in coconut	74	60
18	Value addition in coconut	61	38
19	Availability of marketing channels for coconut	78	62
20	Use of coconut climber for income generation	92	88
<b>OVERALL</b>		<b>70</b>	<b>59</b>

**Fig. 1: Distribution of trainees (%) based on their overall knowledge and adoption level towards improved cultivation practices of coconut**



**Fig:2. Per cent of adoption of improved cultivation practices of coconut by the trainees.**



Data presented in Table 3 reveals the knowledge gain of the trainees after participation in the training programme. Overall knowledge gain was 70 per cent. Knowledge gain on improved cultivation practices of coconut by the trainees is as follows; Ninety two per cent of them gained knowledge on use of coconut climber for income generation followed by use of green manure for soil fertility management and cover crops for soil moisture conservation (84%), where as 79 percent of them gained knowledge on crown cleaning and management aspects (79%), followed by availability of marketing channels for coconut (78%), Mixed/Inter/Multi-species cropping system in coconut garden (76%), Soil and water testing, method of soil sample collection in coconut garden (75%), Post-harvest technologies in coconut (74%), planting material and site selection (72%), preparation of land and planting methods (70%) and availability and use of bio-fertilizers (70%). The results showed that the trainings had helped farmers in increasing their knowledge level on improved cultivation practices of coconut and also benefits and use of coconut climber for gaining more income.

Figure 2 depicts per cent adoption of improved cultivation practices of coconut by the trainees. Higher adoption (67%) was observed for the techniques/practices like crown cleaning and management aspects and mixed/Inter/Multi-species cropping system in coconut garden followed by spacing and systems of planting (64%), use of green manure and cover crops (62%), preparation of land and planting methods (60%), planting material and site selection (59%), soil and water testing, method of soil sample collection in coconut garden (56%), recommended dosage of fertilizer application (53%) and use of sustainable varieties of coconut (51%).

From the findings it can be observed that the trainings had motivated the trainees for adoption of scientific techniques in their field for gaining more production and income. These results are in conformity with the findings of Ahire *et al.*, (2007) in which they reported that knowledge, source of information, mass media exposure; role of extension in dissemination of improved technologies influenced the adoption of improved technologies.

The trainees who participated in the training programme hold positive approach towards the adoption of improved scientific techniques in agriculture for gaining more production and income. The training conducted were location specific addressing location specific problem, thus the farmers gained not only the knowledge about the techniques for enhancing production of coconut but also developed their skill with changed positive attitude which are reflected in adoption of the technologies by substantial number of trainees. On farm vocational trainings are found to have more direct impact, therefore the Krishi Vigyan Kendras and State line departments need to emphasize more on location specific trainings to the farmers for their betterment.

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