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Impact of beekeeping training on knowledge level of farmers in Bidar district of Karnataka

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Abstract

Apiculture is the one of the main component among the IFS components, it plays a vital role in IFS to boost the income levels of farmers with its main product honey and byproducts (Bee wax, propolis, pollen and royal jelly) with less installation and maintenance costs. This study was conducted in ICAR – KVK Bidar to assess the impact of beekeeping training. It was observed majority of the respondents were found male (77.50%) and young age (< 30 years) of respondents were found high (45.83%), to adopt beekeeping as a component (71.16%) was found the major reason of participation of the respondents in training programme. The training programmes proved very effective and resulted in remarkable increase in knowledge of trainees in all aspects of beekeeping. Different species of honey bees (71.50%) was found highest among the gain in knowledge followed by working of honeybees (70.75%) and insect pest management (70.25%).

Keywords: Beekeeping, apiculture, byproducts, impact, knowledge gain

Introduction

“If the bees disappeared from the surface of the globe the man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man”.

- Albert Einstein

Apis of family Apidae is the main genus of honey bee accounting for bulk of honey production, and the genus *Trigona*, also from the same family, is a minor producer of honey. In Karnataka Uttara Kannada has three species of *Apis* viz. *A. dorsata dorsata*, *A. cerana indica*, and *A. florea* and one species *Trigona* (*T. irridipennis*) P.B Badariprasad *et al.*, (2018)^[1]. Beekeeping offers an immense potential for providing employment to rural masses in India, the unemployed youth in particular. It produces honey, beeswax, pollen, propolis from the flowers which otherwise dry up in nature and go waste. It does not bring any pressure on agricultural land rather it increases the yield of various cross pollinated crops. Singh (2000)^[7] and Monga and Manocha (2011)^[4] reported that the honey bees increased the agricultural productivity to the tune of 30 - 80 per cent annually through cross pollination. The distinctive feature of beekeeping is the small capital investment required as compared to other industries. Furthermore, beekeeping does not need raw material in usual sense as nature provides the same in the form of nectar and pollen (Sharma and Dhaliwal, 2014)^[6].

During the last few years, adoption of beekeeping as an enterprise increased substantially due to increased awareness among the people about the benefits of beekeeping. Although, a large number of people are performing this activity as a main or allied occupation, but most of them have started without going through any training programme. Due to lower or incomplete knowledge about beekeeping, they are unable to give their best in earning the maximum from this occupation. To start any activity, complete knowledge about its all aspects is utmost important. In this regard, training is major catalytic force for augmenting human productively in all spheres of development (Singh & Singh, 2019)^[3].

Methodology

This research was conducted in ICAR – Krishi Vigyan Kendra, Bidar, Karnataka (India). During the year 2018-19, ICAR – KVK Bidar organized three training programmes (2-6 days each) in co-ordination with Department of Horticulture, Bidar and Navanirman Rural Development Institute, Bidar in 2018 on beekeeping for farmers. Totally 303 interested farmers both (male and females) participated in this beekeeping training programme.

To assess the impact of training on knowledge gain of the trainees, pre and post - training evaluation were conducted.

Locale of the study

The study was conducted in Bidar district of North-Eastern Karnataka during the year 2018-19. Bidar district is the northern most part of the Karnataka state in India. Geographically, it resembles the "Crown of the State", occupying its northeastern end. Bidar district is constituted by five talukas, Aurad, Basavakalyan, Bhalki, Bidar and Humnabad with Bidar being the headquarters of the district and three new talukas Hulsoor, Chitgoppa, Kamalnagar has been added newly.

Selection of respondents

Totally 120 trained respondents were selected for the study out of 303 members participated in beekeeping training programme, simple random sampling method was used for selecting the respondents. A detailed interview schedule was prepared for the study and the data collection was done through personal interview.

Statistical analysis

The collected data were coded, tabulated and analyzed in accordance with the objectives of the study using appropriate statistical tests. The statistical tools like frequency and percentage were applied for analysis of the collected information to draw the meaningful and logical conclusions.

Results & Discussion

Table 1: Personal characteristics of respondents (n =120)

Sl. No.	Characteristics	Category	Respondents	
			f	%
I. Personal variables				
1	Age	Young (<30 years)	55	45.83
		Middle(between 31-49 years)	39	32.50
		Old (50 years and above)	26	21.66
2	Education	Illiterate	18	15.00
		Up to primary	28	23.33
		Middle School	19	15.83
		High school	27	22.50
		Pre-university	16	13.33
		Graduation	7	5.83
		Post-graduation	5	4.16
3	Sex	Male	93	77.50
		Female	27	22.50

F = Frequency, % = Percentage

Table 1 indicates the personal characteristics like age, education, farming experience and sex. In this table it is clearly revealed that most of the trained respondents belongs to young age (45.83%) followed by middle age (32.50%) and old aged group (21.66%). In terms of Education, primary school level education of respondents was found highest (23.33%) followed by high school education (22.50%) and middle school level of education (15.00%), post graduates (4.16%) were found least among respondents. In terms of sex male respondents (77.50%) were found highest followed by female respondents (22.50%).

Table 2: Extension participation of the respondents (n =120)

Sl. No.	Categories	Participated		Extent of participation					
				Regular		Occasional		Never	
		f	%	f	%	f	%	f	%
1	Training	120	100.00	111	92.50	09	7.5	00	0.0
2	Demonstrations	111	92.50	94	78.33	17	14.16	09	7.5
3	Field days	99	82.50	84	70.00	15	12.50	21	17.50
4	Exposure visits	79	65.83	61	50.83	18	15.00	41	34.16
5	Technical meetings	75	62.50	59	49.16	16	13.33	45	37.50
6	Agril. Exhibitions	106	88.33	69	57.50	37	30.83	14	11.66
7	Krishimelas	114	95.00	92	76.66	22	18.33	06	5.00
8	Education tours	70	58.33	26	21.66	44	36.66	50	41.66
9	Farmers interaction session	89	74.16	71	59.16	18	15.00	31	25.83

F = Frequency, % = Percentage

In table no 2 the extension participation of the respondents has been revealed which clearly indicates that cent percent of the respondents are participating in training programmes (100.00%) in which majorly regularly participating (92.50%) respondents were found, followed by respondents participation in krishimelas (95.00%) in which again the regular participation (76.66%) was found high and

participation of respondents in demonstration (92.50%) in which majorly regular participating (78.33%) respondents were found. The least participation was found in educational tours (58.33%) and never participated response was found majorly in educational tours (41.66%) followed by technical meetings (37.50%) & exposure visits (34.16%).

Table 3: Reasons of participation in training programme on beekeeping (n =120)

Sl. No	Reasons	f	%
1	To adopt beekeeping as a component	86	71.16
2	Just to know about beekeeping	07	5.83
3	To get certificate of training course	05	4.16
4	Establish linkage with KVK/ Agricultural University	05	4.16
5	To teach fellow beekeepers	01	0.83
6	To improve the knowledge	16	13.33

F = Frequency, % = Percentage

Table 3 reveals the factors which motivated the farmers to join the beekeeping training among them to adopt beekeeping as an component (71.16%) and to improve the knowledge on beekeeping (13.33%) were found high, followed by just to know about beekeeping (5.83%), to establish linkage with KVK / SAU (4.16%), to get certificate of training course (4.16%) and to teach the fellow beekeepers (0.83%) was found the least.

Table 4: Assessment of training programme (n =120)

Sl.no	Variables	Category	f	%
1	Utility of training	Very useful	89	74.16
		Useful	25	20.83
		Somewhat useful	06	5.00
2	Coverage of subject matter	Widely	97	80.83
		Moderately	19	15.83
		Slightly	04	3.33
3	Excellence of training	Excellent	101	84.16
		Very good	16	13.33
		Good	03	2.5

F = Frequency, % = Percentage

Table 5: Knowledge gain after acquiring training with respect to various aspects of beekeeping (n =120)

Sl. No	Particulars	Pre-evaluation (%)	Post-evaluation (%)	Gain in knowledge (%)
1	General information about beekeeping	29.50	95.25	65.75
2	Different species of honey bee	21.25	92.75	71.50
3	Bee flora	20.50	86.25	65.75
4	Family organization of honey bees	28.50	98.25	69.75
5	Working of honeybees	25.50	96.25	70.75
6	Seasonal management of honeybees	28.50	95.00	66.50
7	Insect pest management	19.75	90.00	70.25
8	Disease management	19.25	85.00	65.75
9	Honey extraction and processing	35.25	96.75	61.50
10	Economic aspect of beekeeping	36.75	95.00	58.25
11	Economic use of honey byproducts like (bee wax, propolis, pollen, royal jelly)	21.75	88.25	66.50

% = Percentage

Table 5 reveals that these training programmes proved very effective in increasing the knowledge of trainees. The study revealed that in pre-evaluation test the knowledge test of different respondents was 19.75 per cent in case of insect pest management was low and 36.75 per cent regarding economic aspects of beekeeping.

However, in post training evaluation there was a significant increase in the knowledge of respondents regarding various aspects of beekeeping, 98.25 per cent in case of family organization of honey bees was found highest followed by honey extraction and processing 96.75 per cent and 96.25 per cent in case of working of honey bees.

It was observed that prior to attend the training, the trainees had some knowledge about beekeeping but it was not up to the satisfactory level. However, knowledge score gained by the participants after going through the training programmes was more satisfactory in all aspects of beekeeping, Different species of honey bees 71.50 per cent was found highest among the gain in knowledge followed by working of honeybees 70.75 per cent and insect pest management 70.25 per cent. This notable increase in knowledge might be due to the educational background of participants, keen interest taken by them and well organization of the training programmes with sufficient information.

Conclusion

Apiculture is the one of the main component among the IFS

Table 4 revealed that majority of respondents (74.16%) reported the training very useful while some categorized it as useful (20.83%) and somewhat useful (5.00%). It indicates that before going to start bee keeping as a vocation, one should attend the training to learn about various aspects of the bee keeping for making it a more profitable business. In terms of subject matter coverage majority of respondents (80.83%) reported the subject was covered widely followed by (15.83%) of respondents was reported subject coverage as moderate and (3.33%) of respondents reported the subject was covered slightly, this may be because of language grasping problems of respondents from border locations. In terms of excellence of training conducted majority of the respondents (84.16%) agreed the training conducted was in excellent way followed by (13.33%) of respondents responded that training was very good and (2.50%) of respondents felt the training was just good.

components, it plays a vital role in IFS to boost the income levels of farmers with its main product honey and byproducts (Bee wax, propolis, pollen and royal jelly) with less installation and maintenance costs. With this study on impact assessment and increase in knowledge levels of trained farmers the results give a mere satisfaction of transferring the technology and capacity building of farmers, the gain in knowledge after post training evaluation the gain in knowledge is stupendous compared to the pre training evaluation results.

This study results are encouragement to the extension personnel and scientists to conduct more number of such beekeeping capacity building programmes to create awareness and educate scientifically the importance of beekeeping as a component in their farms. This type of allied income generating components installation is the need of the hour to boost the income levels with sustainability in agriculture.

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