



Assessment of Knowledge Gain by Participants through Vocational Trainings on Fish Farming

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ABSTRACT

The present study was conducted on one hundred and forty six participants with an aim to determine the effectiveness of fish farming vocational training programs on knowledge gain by rural youth, farmers and farm women. The data revealed that just after completion of training, the majority of participants were having high level of knowledge (84.93%) regarding fish farming followed by 15.07% respondents having medium level of knowledge. The results clearly indicated that vocational training on fish farming was effective in enhancing the knowledge of trainees. Therefore, it can be interpreted that more number of such training programs may be organized which will be beneficial to both rural and urban participants in particular and farming community in general.

Key Words: Fish farming, Gain, Knowledge, Participants, Program, Training.

INTRODUCTION

Fisheries and aquaculture are considered as rising sector in Indian economy as it is the second largest producer of fish in the world next to China. India is rich in fish biodiversity comprising more than ten per cent of global fish biodiversity. Furthermore, India accounts for 10.14 per cent of the annual average growth rate with the production of around 12.59 MT during the period of 2017 to 2018 (Anon, 2019). Thus, fish farming and aquaculture is recognized as the essential sector to generate employment and income in the country. Moreover, it also enhances the growth of number of subsidiary industries and is an essential source of nutritious food.

In Punjab, aquaculture production is mainly contributed by carps. In the last seven decades, inland fish production of Punjab state has grown from 0.98 lakh tones in 2011-12 to 1.37 lakh tones in 2017-18 (Anon, 2019). Krishi Vigyan Kendras plays an integral role in encouraging people to adopt and practice fish farming which help in bridging the gap between production and productivity through

various vocational training programs. The trainings were provided in both rural and urban areas in various districts of Punjab and people of any age and gender irrespective of their educational status can participate in these trainings.

The Krishi Vigyan Kendras imparts need-based and skill oriented trainings which help the trainees to increase the knowledge about new agriculture technologies and changes their perception towards recommended improved farm technologies which can increase self-employment opportunities among rural farmers (Shankara *et al*, 2014). The training programmes are designed to communicate the latest technological knowledge to the farmers through work experience to make the enterprises commercially viable (Lal and Tondon, 2011). According to Singh *et al* (2015), the vocational training programmes take into account all methods which result into knowledge gain and skill development in rural youth in the areas of their interest. Similarly, the studies conducted by Singh and Tanwar (2020); Singh and Tanwar (2018); Laxmi *et al* (2015); Islam and Nath (2015); Pordhiya *et al* (2017) and Baraiya

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and Baraiya (2016) shows significant increase in knowledge gain after attending the vocational training programmes.

MATERIALS AND METHODS

The study was conducted on one hundred and forty six trainees in six batches, who participated in the training programs to analyze the knowledge gained by the participants on fish farming practices. The trainees were classified based on their socio-demographic profile. The profile of trainees ranged from urban to rural, illiterates to graduates, laborers, business and farmers with age less than 30 yr and more. The reason to attend the training was assessed by using closed ended questionnaires. Further, total ten questions were designed to collect the knowledge of participants prior and later to the vocational trainings regarding selection of fish, pond preparation, stocking density as well as stocking ratio, water quality management, feeding strategies, Integrated fish farming and marketing etc. For each correct answer, one mark was given and zero mark for incorrect answer. Therefore, maximum score an individual can obtain in the test was ten. However, to allow the participation of all trainees in the study, interview method was also used. The gain in knowledge was analyzed by calculating the difference between the knowledge on fish farming practices by the trainees before and after attending the vocational trainings. The standard formula by Ansari and Chandargi (2000) was used to calculate the knowledge gain frequency and percentage.

The knowledge scores of trainees were further assessed by dividing them into three classes as high (more than 60%), medium (31-60%) and low (0-30%) level of knowledge.

RESULTS AND DISCUSSION

It was evident that maximum numbers of trainees were from age up to 30 yr followed by 31-40 yr and above 40 yr with percentage of 42.47 per cent, 39.04 per cent and 18.49 per cent, respectively. These

findings were in agreement with findings of Barua, 2010; Battu *et al*, 2015; Kaur, 2016; Pordhiya *et al*, 2017; Singh and Singh, 2016. Trainees belonged to both genders. However, participation of females was only 2.05 per cent as compared to males. Similar findings were recorded by Pordhiya *et al* (2017). It was evident that maximum numbers of trainees were from other castes followed by Scheduled caste and Backward Caste with percentage of 88.36, 9.59 and 2.05, in order. These findings were in line with the findings of Kaur (2016).

Assessing the participants in relation to their educational qualification revealed that 41.10 per cent of trainees studied up to senior secondary followed by matriculation (31.51%), graduation (11.64%), middle school (10.27%), primary level (4.11%) and illiterate (1.37%). The present findings were in accordance with those of Sharma *et al*, 2012; Pordhiya *et al*, 2017; Singh and Tanwar, 2020. Furthermore, data revealed that majority of participants were farmers (84.25%) followed by laborers (8.22%), businessmen (5.48%) and housewives (2.05 %) which is in concordance with Kaur (2016) and Singh and Singh (2016) showed keen interest in fish farming.

The participants belonged to various districts of Punjab with majority from Barnala (78.77%), followed by Bathinda (14.38%), Sangrur (4.80%) and others. Most of the respondents reside in rural area with 91.10% while 8.90% in urban areas. Similar type of findings were also revealed by Barua (2010), Singh and Singh (2016), Singh and Tanwar (2020). It was vivid that approximately 90 per cent of participants had their own land whereas 10% were landless. Similar types of findings were also revealed by Kaur (2016); Kumar *et al* (2018) and Singh and Singh (2016). Farmers having land holding of more than 2 ha were more in numbers (32.19 %) followed by 1 to 2 ha (30.82 %), less than 1 hectare (26.03 %) and landless farmers (10.96 %). The study conducted by Pordhiya *et al* (2017) was having similar type of results.

Assessment of Knowledge Gain

Table 1. Socio- demographic profile of participants (n=146).

Sr. No.	Particular	Frequency	Percent
1.	Age		
	Up to 30 years	62	42.47
	31-40 years	57	39.04
	Above 40 years	27	18.49
2.	Caste		
	Scheduled caste	14	9.59
	Backward Caste	3	2.05
	Others	129	88.36
3.	Education		
	Illiterate	02	1.37
	Primary	06	4.11
	Middle level	15	10.27
	Matriculate	46	31.51
	Senior Secondary	60	41.10
	Graduate	17	11.64
4.	Occupation		
	Laborer	12	8.22
	Farming	123	84.25
	Business	08	5.48
	Housewife	03	2.05
5.	Landholding		
	Landless	16	10.96
	Small (<1 ha)	38	26.03
	Medium (1-2 ha)	45	30.82
	Large (>2 ha)	47	32.19
6.	Gender		
	Male	143	97.95
	Female	03	2.05
7.	Residence		
	Rural	133	91.10
	Urban	13	8.90
8.	District		
	Barnala	115	78.77
	Sangrur	07	4.80
	Bathinda	21	14.38
	Others	03	2.05

Table 2. Reasons to participate in fish farming training programme.

Sr. No.	Reasons	Frequency	Percentage	Rank
1.	To adopt fish farming as an occupation	109	74.66	I
2.	To learn about fish farming techniques	17	11.64	II
3.	To get certificate of fish farming training	09	6.16	III
4.	To know about health benefits of fish	08	5.49	IV
5.	To establish linkage with Krishi Vigyan Kendra to get other trainings	03	2.05	V

Reasons of participation

Motivational factors of trainees can be classified based on their goal to attend the vocational trainings as incremental value (short term goal) or terminal value (long term goal). The reasons such as to adopt fish farming as an occupation, to learn more about fish farming techniques and to learn about health benefits of consuming fish were considered as terminal value or long-term goals. It was vivid from Table 2 that 74.66 per cent respondents joined training course to adopt fish farming as an occupation, 11.64 per cent wanted to learn about fish farming techniques and 6.16 per cent joined the training course just to get the certificate of training. Lesser participants showed their interest to attain knowledge about the health benefits of fish and establish linkage with Krishi Vigyan Kendra. Similar type of results was also reported by Kaur (2016) and Kumar *et al* (2018) in their study on mushroom cultivation. It was evident that majority of respondents joined the training course to adopt fish farming as a venture.

Previous knowledge assessment

The data (Table 3) illustrated the knowledge of participants regarding the fish farming before attending the vocational trainings on fish farming. It was evident that participants had less than 45 per cent of knowledge regarding fish farming before attending the trainings. Percentage of knowledge with respect to selection of pond, marketing, pond preparation and stocking density was 44.52, 36.99, 30.14 and 23.29 per cent, respectively. However, trainees had negligible knowledge regarding water quality management (5.48%) and natural food

availability (8.90%). Moreover, level of knowledge was 12.33, 13.01, 13.69 and 15.07 per cent in an ascending order with regards to balanced feed, feeding strategies, integrated fish farming and stocking ratio, respectively.

It was evident (Table 3) that the trainees had 50, 59.59 and 73.97 per cent of knowledge with respect to selection of fish, pond preparation and balance fish feed, respectively. These findings were in agreement with Laxmi *et al* (2015) and Singh and Tanwar (2020). Besides this, the trainees had 30.14, 23.29 and 15.07 per cent of knowledge about pond preparation, stocking density and stocking ratio of fish before the training. However, after the training, knowledge was 89.73, 83.56 and 68.49 per cent, in order. These findings were closely related to Barua (2010) and Sahoo *et al* (2016).

Further, the trainees had 8.90 and 12.33 per cent of knowledge about natural food availability investigation and balance fish feed before the training. However, after the training, knowledge was 70.55 and 86.30 per cent, in order. These findings were in same line with Sahoo *et al* (2016). The trainees had 30.14, 23.29, 15.07, 8.9 and 12.33 per cent of knowledge about pond preparation, stocking density of fish, stocking ratio of fish, natural food availability investigation and balance fish feed before the training. However, after the training, knowledge was 89.73, 83.56, 68.49, 70.55 and 86.30 per cent, in order. These findings were closely related to Barua (2010) and Sahoo *et al* (2016). The trainees had 5.48 and 36.99 per cent of knowledge about water quality management and marketing before the training. However, after

Assessment of Knowledge Gain

Table 3. Gain in knowledge after acquiring training with respect to different operation (n=146).

Sr. No.	Parameter	Pre-evaluation (%)	Post-evaluation (%)	Gain in knowledge
1.	Selection of fish	44.52	94.52	50.00
2.	Pond preparation	30.14	89.73	59.59
3.	Stocking density of fish	23.29	83.56	60.27
4.	Stocking ratio of fish	15.07	68.49	53.42
5.	Natural food availability investigation	8.90	70.55	61.65
6.	Balance fish feed	12.33	86.30	73.97
7.	Feeding strategies	13.01	76.03	63.02
8.	Integrated fish farming	13.69	81.51	67.82
9.	Water quality management	5.48	72.60	67.12
10.	Marketing	36.99	96.30	59.31

the training, knowledge was 72.60 and 96.30 per cent, in order. These findings were closely related to Singh and Tanwar (2018) and Singh and Tanwar (2020).

Previous knowledge assessment

The data (Table 4) revealed that the knowledge level of participants about fish farming before attending vocational trainings. It was evident that majority of trainees had low level of knowledge (0-30%) with 78.08 per cent in consonance with Belakeri *et al* (2017) and 21.92 per cent participants had medium level knowledge (31 to 60%). However, no trainee had knowledge more than 60 per cent.

These three findings of low, medium and high level of knowledge were in line with the study of Singh and Singh (2016); Pandey *et al* (2017); Singh and Tanwar (2018); Singh and Tanwar (2020). This clearly indicates that farmers, laborers, businessmen and housewives do not have enough knowledge prior to training about fish farming practices.

The values (Table 5) show that after the training programs on fish farming, majority of the participants had high level of knowledge (84.93 %) followed by medium level of knowledge (15.07 %) and no trainee had low level of knowledge (0 %). These findings were similar to the findings of Singh and Tanwar (2018).

Table 4. Pre-training knowledge level of participants.

Knowledge Level	No. of participants	Percentage
Low level (0 to 30%)	114	78.08
Medium level (31 to 60%)	32	21.92
High level (more than 60%)	0	0

Table 5. Post-training knowledge level of participants.

Knowledge Level	No. of participants	Percentage
Low level (0 to 30%)	0	0
Medium level (31 to 60%)	22	15.07
High level (more than 60%)	124	84.93

CONCLUSION

The results clearly indicated the significant effect of training programs on knowledge gain regarding fish farming. It can be concluded that more number of such training programs on fish farming techniques may be organized in future which would encourage participants to adopt and practice fish farming as their occupation.

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