



Knowledge Index on Scientific Poultry Farming among Online Trainees

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ABSTRACT

Indian poultry sector is a profitable industry with enormous growth potential. Poultry farming is regarded as a crucial self-employment tool since it provides a wide range of opportunities for generating income among socio-economically weaker section. During and after COVID -19 pandemic, many extension services provided through technology enabled webinars to the farmers. The Department of Veterinary and Animal Husbandry Extension Education, College of Veterinary and Animal Sciences, Pookode organized webinars for poultry farmers in July 2021. The present study was aimed to measure the farmer's knowledge about scientific poultry farming practices. The data were collected from 70 farmers by using semi-structured interview schedule through google form. The overall knowledge index was 66.86 per cent. Most of the farmers possessed medium level of knowledge about scientific poultry farming practices (60.0%). Further, 80.57 per cent of the farmers were having knowledge about breed and breeding management in poultry farming.

Key Words: Farmers, Knowledge Index, Poultry, Webinar.

INTRODUCTION

India is the third-largest egg producer in the world after China and the USA and the fourth-largest chicken producer in the world after China, Brazil and the USA (FAO). The value of the Indian poultry industry is approximately Rs. 80,000 crores and is broadly divided into two sub-sectors: one is a highly organized commercial sector that accounts for about 80 per cent of the total market share and the other is an un-organized sector with about 20 per cent of the total market share (Ministry of Agriculture & Farmers Welfare, Government of India, 2015–16). Backyard poultry offers high-quality protein in the form of meat and eggs, which reducing malnutrition among rural poorer. Reducing poverty, improving nutrition, and increasing revenue among rural poor families are the main goals of the development of backyard poultry systems. (Budharam *et al*, 2021). In 2021, the nation's per capita egg availability was reported to be 90 units/annum, while in Kerala,

it was 63 units/annum (Economic Survey, 2021-2022). A healthy adult human needs at least 180 eggs and 10 kg of chicken annually, which means the Indian poultry sector is loaded with immense business potential and is now growing at a rate of 8-10 per cent per annum. During the years 2021–2022, the nation exported 320,240.46 MT of poultry products to the world for a total of Rs. 529.81 Crores/71.04 USD Millions with major export destinations to Oman and Maldives (APEDA, 2022).

As a consequence of COVID-19, farmers can also receive extension consulting services through a technologically advanced webinar. Department of Veterinary and Animal husbandry Extension Education, College of Veterinary and Animal Sciences, Pookode and Directorate of Entrepreneurship, Kerala Veterinary and Animal Sciences University jointly organized many

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Table 1. Distribution of respondents according to their knowledge level. n=70.

Sr. No.	Knowledge category	Frequency	Per cent
1.	Low knowledge level (<13.17 score)	17	24.29
2.	Medium knowledge level (score between 13.17 to 20.25)	42	60.00
3.	High knowledge level (>20.25 score)	11	15.71

Mean=16.71, Standard deviation= 3.54

webinars for different categories of farmers during and after pandemic. With this background, the study was conceived with the objective to measure the knowledge level of poultry farmers in Kerala on scientific poultry farming practices.

Medium knowledge level = Scores between (Mean knowledge score – Standard deviation to (Mean knowledge score + Standard Deviation))

High knowledge level = Scores above (Mean knowledge score + Standard Deviation)

MATERIALS AND MEHODS

For the present study semi-structured interview schedule was prepared in consultation with the subject matter specialist and published literature. Investigator-made knowledge test was developed to measure the knowledge about scientific poultry farming practices and was formulated based on the package of practices recommendations in 2016 published by Kerala Veterinary and Animal Sciences University. The data were collected through google forms. The responses were given scores. One score was given for each correct answer and a zero score for the wrong answer. The collected data were tabulated and analysed by using appropriate statistical analysis. The knowledge index of each respondent was calculated by using the following formula:

Knowledge Index (KI) =	Total knowledge score obtained	x 100
	Maximum obtainable score	

The mean and standard deviation of the scores of all the respondents were computed for classifying the knowledge level of the farmers. The farmers were categorized into three levels of knowledge *i.e.* low, medium and high. The following considerations were made for categorization.

Low knowledge level = Score below (Mean knowledge score – Standard Deviation)

RESULTS AND DISCUSSION

The data (Table 1) revealed that the majority (60%) of the poultry farmers belonged to medium level knowledge category, followed by the low level knowledge category (24.29%) whereas, only 15.71 per cent of the respondents were having a high level of knowledge about the scientific poultry farming practices. According to Jat and Yadav (2012), the majority of respondents had a medium level of knowledge, which is in agreement with the results. The high and medium levels of knowledge among the farmers may be because of the high levels of literacy, extension orientation, and social participation. According to Bashir *et al*(2022) training can also prove to improve the knowledge level of trainees in their core competent area as well.

The knowledge of the farmers was assessed under five domains of poultry farming such as selection and management, breeding management, feeding practices, health care and vaccination and housing management. A perusal of data (Table 2) showed that the majority (80.57%) of the farmers were having high knowledge index regarding breeding management practices, followed by knowledge about health care and vaccination (77.71%). The knowledge regarding selection and management and feeding practices were 75.71 and 58.33 per cent respectively. Knowledge level on housing management was lower (45.42%) compared to other farming practices. This contradicts the

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Table 2. Practice-wise comparison between knowledge levels of poultry farmers.

Sr. No.	Particular	Knowledge Index(%)
1	Selection and management	75.71
2	Breed and Breeding management	80.57
3	Feeding practices	58.33
4	Health care and vaccination	77.71
5	Housing management	45.42

Table 3. Knowledge level of poultry farmers about Selection and management practices of poultry farming.

Sr. No.	Component of knowledge	The percentage of respondents giving the correct answer	The percentage of respondents giving the wrong answer
1	Days required for hatching chicken egg in hatcheries	88.57%, 21 days	30 days, 18 days (11.43%)
2	Criteria for selection of hatching egg	81.43%, All the above	No crack in eggshell, Egg size, Egg should be clean (18.57%)
3	Number of turning of egg required in the incubator	47.14%, 4-6	10, 2, 0 (52.86%)
4	Method to monitor the egg fertility	85.71%, Candling	Cleaning, Turning (14.29%)

findings of Sihag *et al* (2021) who reported that the majority of the poultry farmers knew the housing management of poultry.

The data in table 3 explained that comparatively the farmers had good knowledge about the days for hatching the chicken egg in hatcheries (88.57%). Followed by knowledge about candling, the method to monitor egg fertility (85.71%), criteria for the selection of hatching eggs (81.43%), the number of turning eggs required in the incubator (47.14%).

It was observed that the respondents had good knowledge about the different breeds of poultry like Thallesheri (88.57%), Gramasree (87.14%) and Kadaknadh (81.43%). Also, the farmers were well aware of the ratio of males and females in poultry houses (85.71%). There was a misunderstanding among the farmers about the reason behind the rapid growth of broiler birds, only 60 per cent of the farmers knew that genetic factor is responsible for the rapid growth of the broiler birds.

It can be inferred (Table 5) that the majority of the farmers (81.43%) knew about the importance of feeding maize for meeting the energy requirement of poultry, 74.29 per cent had knowledge about the daily feed requirement of the adult birds, nearly 72.86 per cent knew that the soybean used as the protein source in poultry feed and 51.43 per cent knew about the importance of calcium feeding of laying hen and 35.71 per cent and 34.29 per cent had knowledge about factor determining the feed requirement of an adult bird and feeding of chick starter respectively. These findings were in accordance with the findings obtained by Babu (2013) and Bunkar (2016).

It was noted 6 that the farmers had good knowledge about health care practices like Newcastle disease vaccination in poultry (87.14%), poultry diseases like coccidiosis (78.57%), whereas only 45.71 per cent of the farmers knew about the age of poultry for R2B vaccination of poultry and

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Table 4. Knowledge level of poultry farmers about Breed and breeding management of poultry farming.

Sr. No.	Component of knowledge	The percentage of respondents giving correct answer	The percentage of respondents giving the wrong answer
1	Ratio of males and females in poultry houses	1:10 (85.71%)	1:01, 2:1, 10:1 (14.29%)
2	Reason behind the rapid growth of broiler chicken	Genetics (60%)	GH, All the above (40%)
3	Indigenous breed of poultry	Thalleshari (88.57%)	Thalleshari, Gramapriya, Gramalakshmi (11.43%)
4	Poultry breed with black-coloured skin and body	Kadaknadh (81.43%)	Gramapriya, Aseel, Thalleshari (18.57%)
5	Backyard poultry breed developed by the KVASU	Gramasree (87.14%)	Astrolop, Wight Leghorn, All the above (12.86%)

Table 5. Knowledge level of poultry farmers about feeding practices of poultry farming

Sr. No.	Component of knowledge	The percentage of respondents giving correct answer	The percentage of respondents giving the wrong answer
1	Factor determining the feed requirement in poultry	Body wt (35.71%)	Age, Health, Feather growth (64.29%)
2	Main ingredients in the feed of laying hen	Calcium (51.43%)	Protein, Energy, Vitamin (48.57%)
3	Chick starter can be fed up to what age	8 wk (34.29%)	4weeks, 6 weeks, 10 weeks (65.71%)
4	The highest amount of energy in poultry feed is provided by	Maize (81.43%)	Wheat, Rice, Finger millet (18.57%)
5	Main ingredient that provides protein in broiler feed	Soybean (72.86%)	Wheat, Maize, Bran (27.14%)
6	Feed requirement of poultry in cage system	120g (74.29%)	30g, 50g, 70g (25.71%)

majority (84.29%) of the farmers had knowledge about the zoonotic potential of Avian Influenza and deficiency of calcium in poultry. These findings were in accordance with the findings obtained by Bunkar *et al* (2021).

The data (Table 7) showed that 58.57 per cent of the farmers had knowledge about the optimum temperature for poultry farming and the equipment used for measuring the relative humidity. It was found that only 25.71 per cent of the farmers had knowledge about the maximum length of the

poultry house. 50 per cent of the farmers were having knowledge about the measures to reduce the heat stress in poultry, but 34.29 per cent of the farmers knew about the effect of heat stress in poultry. These findings are in accordance with the findings obtained by Babu (2013) and Kumar *et al* (2017).

CONCLUSION

It can be concluded that the majority of the poultry farmers belonged to the medium level of

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Table 6. Knowledge level of poultry farmers about health care and vaccination of poultry.

Sr. No.	Component of knowledge	The percentage of respondents giving correct answer	The percentage of respondents giving wrong answer
1	Leg weakness and thin eggshell in poultry is caused by	Calcium (84.29%)	Iron, Potassium, Manganese (15.71%)
2	Age of poultry for R2B vaccination in poultry	8 wk (45.71%)	6 wks, 1st day (54.29%)
3	Zoonotic diseases in poultry	Avian Influenza (84.29%)	Marecks disease, Coccidiosis, IBD(15.71%)
4	Blood in faeces is a symptom of	Coccidiosis (78.57%)	Gout, Fowl pox, Avian Influenza (21.43%)
5	Lasota vaccine used for the prophylaxis of	ND (87.14%)	CRD, IBD, AI (12.86%)

Table 7. Knowledge level of poultry farmers about housing management practices of poultry.

Sr. No.	Component of knowledge	The percentage of respondents giving correct answer	The percentage of respondents giving the wrong answer
1	The optimum temperature for rearing poultry	22°C-30°C (58.57%)	10°C-20°C, 10°C-30°C, 35°C-50°C (41.43%)
2	Equipment is used to measure the relative humidity	Wet and dry bulb thermometer (58.57%)	Clinical thermometer, Laboratory thermometer, Minimum and maximum thermometer (41.43%)
3	Heat stress in poultry will cause	Thin eggshell (34.29%)	Increased feed intake, Increased egg production, Reduced water intake (65.71%)
4	The maximum length of poultry shed	Not more than 9 m (25.71%)	As per the availability of land, 30 m, 100 m (74.29%)
	Measures taken to reduce heat stress in poultry	All the above (50%)	Reduce the bird density, Provide more water, Give feed in morning and afternoon (50%)

knowledge, followed by the low level of knowledge and less than one-fourth of the farmers were having a high level of knowledge. The study also revealed that the maximum knowledge was found with respect to breed and breeding management followed by health care and vaccination, selection and management and feeding practices. The poultry farmers possessed poor knowledge about housing management of poultry i.e. maximum length of poultry house and effect of heat stress in poultry.

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