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Assessment of level knowledge among broiler poultry farmers regarding scientific broiler poultry farming practices in Ajmer district of Rajasthan

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Abstract

The present study was conducted to assess the knowledge level among 120 broiler poultry farmers about scientific broiler poultry farming practices in Ajmer District of Rajasthan. The data were collected through structured interview schedule from 30 randomly selected broiler poultry farmers from each tehsil i.e. Ajmer, Beawar, Nasirabad and Peesangan of Ajmer district. Results of the study revealed that majority of the broiler poultry farmers comes under medium knowledge category i.e. housing management practices (63.33%), breed selection and identification of quality chicks (49.17%), brooder management practices (75.83%), feeding management (68.33%), bio-security and disease control (73.33%), marketing (66.67%), financial practices (55.84%). Results from overall knowledge level revealed that majority of the broiler poultry farmers (63.33%) had medium level of overall knowledge followed by high (20%) and low (16.67%) about scientific broiler farming practices.

Keywords: Broiler poultry farmers, scientific broiler poultry farming practices, knowledge level

1. Introduction

India is emerging as one of the fastest growing economies in the world and agriculture is mainstay for livelihood in Indian economy despite rapid advance in service and industry sector. The contribution of agriculture and allied sector to our Nation's GDP in the year 2020-21 was 19.9% with an annual growth of 3.4% and the high growth has placed India at 3rd position in egg production after China and USA (Economic Survey, 2020-21) and 6th position in chicken meat after USA, China, Brazil, Mexico and Russian Federation (FAO, 2020) [5]. Poultry industry contributes about 0.7% of the national GDP and approximately 10% of the livestock GDP and provides employment to over five million people in the country (Jhirwal *et al.*, 2018) [6]. According to 20th Livestock census-All India Report (2019) [2], there are 851.81 million poultry birds in India while Rajasthan has 1.4 million poultry birds. Rajasthan ranks 14th in egg production and contributes 10 per cent of meat production in India. There is total 20,000 poultry rearers in the state of Rajasthan. The production of eggs has increased from 710 million in 2005-06 to 1,363 million in 2016-17 and meat production was estimated at 68 thousand tonnes in 2005-06 and it has increased up to 180 thousand tonnes in 2016-17 in Rajasthan. Ajmer district ranks first in both egg and broiler poultry production in the state. There is total 27 lakh poultry birds in Ajmer district (20th Livestock Census, Rajasthan (2019) [1].

In India, 72.22% of people live in rural areas. Poultry is

raised by almost 89% of rural livestock owners as a significant additional source of income. The majority of commercial farms in India are located in urban and semi-urban areas. Since rural and tribal communities have limited access to the majority of the eggs and meat produced, the villages must be self-sufficient in their poultry production in order to meet their demands (Khandait *et al.*, 2011) [7]. In this regard, broiler industry might be a promising industry to alleviate the unemployment problem as well as to take the challenge of 21st century and meet the scarcity of animal protein within shortest possible time in India. Assessment of knowledge level helps to determine the priority of changes in skill, attitude and behaviour and helps in identified the training needs that will provide the greatest impact on achieving organizational or individual goals.

2. Materials and Methods

The study was conducted purposively in Ajmer district of Rajasthan as it occupies 1st rank in poultry population in the state and large number of the farmers in this district are doing poultry farming as primary occupation. Also, the establishment of different integrating firms which have well developed network of contract farming system in broiler poultry farming. Ajmer district has 9 tehsils, out these tehsils, four tehsils i.e. Ajmer, Beawar, Nasirabad and Peesangan were selected purposively for the study as these tehsils have high density of broiler poultry farming. An exhaustive list of broiler poultry farmers having at least 500

commercial broiler birds per batch for more than two years was prepared with the help of State Poultry Training Institute, Ajmer (Rajasthan), Veterinary Officers, integrating firms, commercial poultry feed agencies, village level functionaries etc. From the prepared list of each selected tehsil, 30 broiler poultry farmers were selected randomly. Thus, a total of 120 respondents were selected and interviewed for assessment of their level of knowledge.

3. Results and Discussion

Results regarding knowledge level of broiler poultry farmers about housing management practices (Table 1) revealed that majority of the respondents had knowledge about the location of farm (94.17%), orientation of farm house (89.17%), indication of optimum moisture level of litter material (81.67%), identification of excessive dustiness of litter material (76.67%), identification of excessive dampness of litter material (75.83%), over stocking of the birds is harmful (73.33%), equipment's used for providing heat to chicks (73.33%), thickness of the bedding material (70.83%), change in floor space during warm weather (70.00%), height of broiler house at sides (67.50%), proper width of poultry house in order to avoid ventilation problem (66.67%), height of the floor from ground level (65.83%), average floor space requirement for broiler birds (65.00%), height of the window/wire mesh from the ground (65.00%)

and height of broiler house at the centre (60.00%).

Data presented in Table 2 regarding Knowledge level of broiler poultry farmers about breed selection and identification of quality chicks indicates that majority of the respondents had knowledge about the meat purpose breeds (94.17%), ideal weight of the day-old chick (89.17%), body confirmation is important tool for judging the quality of chick (73.33%) and signs of quality chick (65.00%).

A cursory look of Table 3 i.e. Knowledge level of broiler poultry farmers about brooder management practices reveals that majority of the respondents had knowledge about the indication of crowding of chicks under the heat source (86.67%), care to be taken while watering the birds for first day (86.67%), reason for using corrugated sheet or newspaper on litter material during first week of chick rearing (85.00%), reason for using brooder guards (84.17%), duration of heating of brooder house during winter before releasing of chicks (81.67%), prior heating of brooder before placing chicks is necessary (75.00%), minimum keeping period of brooder guards (64.17%) and indication of staying away of chicks from heat source (62.50%). Whereas, majority of the respondents had no knowledge about duration of lighting/heating of brooders in first week and practices followed to prevent the chicks from consuming litter material.

Table 1: Knowledge level of broiler poultry farmers about housing management practices

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1.	The farm house should be located on a fairly raised and properly drained place (True/ False)	113	94.17
2.	What should be orientation of farm house in tropical climate	107	89.17
3.	What is the average floor space requirement for broiler birds?	78	65.00
4.	The over stocking of the birds is harmful	88	73.33
5.	Floor space needs to be increased /decreased during warm weather	84	70.00
6.	Floor of the broiler house from the ground level should be raised to what height?	79	65.83
7.	What should be the thickness of the bedding material?	85	70.83
8.	In order to avoid ventilation problem in poultry house, the width of house should not be more than	80	66.67
9.	Window / wire mesh in the shed should be at feet from ground (4.0)	78	65.00
10.	What should be the height of broiler house at the centre	72	60.00
11.	What should be the height of broiler house at sides	81	67.50
12.	Name two equipment's used for providing heat to chicks	88	73.33
13.	Take a handful of litter in hand and squeeze it, if it forms cake, then it is indicating excess dampness	91	75.83
14.	Take a handful of litter in hand and squeeze it, if it crumbles into fine dust, then it is indicating excess dustiness	92	76.67
15.	Litters remain loose indicates optimum moisture level	98	81.67

Table 2: Knowledge level of broiler poultry farmers about breed selection and identification of quality chicks

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1.	Name two breeds, which are used for meat purpose	113	94.17
2.	What is the ideal weight of the day-old chick?	107	89.17
3.	What are the signs of quality chick?	78	65.00
4.	Body confirmation is important tool to judge the quality of chick	88	73.33

Table 3: Knowledge level of broiler poultry farmers about brooder management practices

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1.	Why do we use brooder guards?	101	84.17
2.	Chicks crowded under the heat source indicate less heat / more heat in the broiler poultry shed	104	86.67
3.	Chicks are staying away from heat source indicate less heat / more heat in the broiler poultry shed	75	62.50
4.	How many hours lighting /heating should be there for brooders in first week?	31	25.83
5.	What should be done to prevent the chicks from consuming litter material?	29	24.17
6.	Why corrugated sheet or newspaper is used on litter material during first week of chick rearing?	102	85.00
7.	What care needs to be taken while watering the birds for first day? Addition of glucose /jaggery, adding antibiotic, vitamins and minerals	104	86.67
8.	How many hours before releasing of chicks, brooder house should be heated during winter? (6/12/24hours)	98	81.67
9.	Brooder guards should be kept for minimum period	77	64.17
10.	Prior heating of brooder before placing chicks is necessary (true/false)	90	75.00

Knowledge level of broiler poultry farmers about feeding management practices (Table 4) that majority of the respondents had knowledge about the age of birds for shifting from broiler starter ration to broiler finisher ration (90.83%), types of feeds available for broilers (87.50%), indication of fungus infected feed (85.83%), birds consume more/less at high temperature (82.50%), height of feeder / waterer (81.67%), feed additive used as growth promoter (78.33%), number of times birds should be watered and fed daily (76.67%), quality of good feed (75.00%), storing of feed at dry place (73.33%) and requirement of feeders of 30 cm diameter for 100 birds (70.83%).

It is evident from Table 5 i.e. Knowledge level of broiler

poultry farmers about bio-security and disease control practices that majority of the respondents had knowledge about frequent entry of outsiders in poultry farm act as major source of disease carrier (83.33%), vaccination time of Newcastle disease (81.67%), vaccination time of Gumboro disease (80.00%), various safe methods of disposal of dead birds (79.17%), transmission of disease to broiler poultry birds by rodents, lice, mite etc. (78.33%) and necessity of minimum inter flock period of 1-2 weeks (77.50%). Whereas, majority of the respondents had no knowledge about reason for use of footbath in poultry farm, various methods of vaccination of broiler birds and symptoms of Coccidiosis and Newcastle disease.

Table 4: Knowledge level of broiler poultry farmers about feeding management practices

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1.	How many types of feeds are available for broilers?	105	87.50
2.	At what age birds should be shifted from broiler starter ration to broiler finisher ration?	109	90.83
3.	Birds consume more at high temperature (true/false)	99	82.50
4.	How many times birds should be watered and fed daily	92	76.67
5.	How many feeders of 30 cm diameter can be used for 100 birds?	85	70.83
6.	Name any feed additive which promotes growth?	94	78.33
7.	What should be the height of feeder /waterer?	98	81.67
8.	Feed should be stored at dry place	88	73.33
9.	What is the quality of good feed? (Excessive dustiness/pellet or small granule/hard round mass)	90	75.00
10.	What is the indication of fungus infected feed?	103	85.83

Table 5: Knowledge level of broiler poultry farmers about bio-security and disease control practices

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Percent (%)
1.	Minimum inter flock period of 1-2 weeks is necessary in broiler farming, why?	93	77.50
2.	Why footbath is used in poultry farm?	22	18.33
3.	What are the various safe methods of disposal of dead birds? (burying/throwing away/incineration)	95	79.17
4.	Rodents, lice, mite etc. can transmit disease to broiler poultry birds. (true/false)	94	78.33
5.	What are the important symptoms of Coccidiosis?	22	18.33
6.	What are the important symptoms of Newcastle/ Ranikhet disease?	17	14.17
7.	When should one vaccinate birds for Newcastle/ Ranikhet disease vaccine?	98	81.67
8.	When should one vaccinate birds for Gumboro disease?	96	80.00
9.	Frequent entry of outsiders in poultry farm act as major source of disease carrier	100	83.33
10.	What are the various methods of vaccination of broiler birds?	25	20.00

A cursory look of Table 6 i.e. knowledge level of broiler poultry farmers about marketing practices reveals that majority of the respondents had knowledge about the

marketable age of chicken broiler birds for maximum profit (90.83%), different channels of marketing of broiler birds (88.33%) and seasons of higher price of broiler birds

(84.17%). However, majority of the respondents had no knowledge about maximum mortality rate in ideal condition

of poultry farm keeping in mind the demand fluctuation of broiler birds for getting high price.

Table 6: Knowledge level of broiler poultry farmers about marketing practices

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1.	What is the marketable age of chicken broiler birds for maximum profit? (36-42 days)	109	90.83
2.	What are different channels of marketing of broiler birds?	106	88.33
3.	What should be the maximum mortality rate in ideal condition of poultry farm (2% /5%/ 10%)	25	20.83
4.	Do you keep in mind the demand fluctuation of broiler birds for getting high price?	28	23.33
5.	Are you aware with the seasons where is the price of broiler birds become high?	101	84.17

Data presented in Table 7 regarding Knowledge level of broiler poultry farmers about financial practices revealed that majority of the respondents had knowledge about the different sources which provide loan for broiler poultry production (80.00%), cheapest source of finance (75.00%),

loan taking is easier from landlord than bank (72.50%) and central government schemes which provides loan for starting poultry farming (70.83%). Whereas, majority of the respondents had no knowledge about schemes of State Department of Animal Husbandry for poultry development.

Table 7: Knowledge level of broiler poultry farmers about financial practices

S. No.	Particulars	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1.	What are the different sources which provide loan for broiler poultry production?	96	80.00
2.	Which one is the cheapest source of finance?	90	75.00
3.	Name any central government scheme which provides loan for starting poultry farming	85	70.83
4.	Loan taking is easier from landlord than bank	87	72.50
5.	What is the scheme of SDAH on poultry development?	15	12.50

Results regarding Overall Knowledge level of broiler poultry farmers in different areas of broiler poultry farming presented in Table 8 reveals that majority of the respondents (63.33%) had medium level of knowledge regarding housing management practices, whereas 20.00 per cent and 16.67 percent had high and poor levels of expertise, respectively. This finding is in contradiction with that of Paonam and Ram (2015) ^[9] and Bharti and Sager (2021) ^[3] who observed that majority of the respondents had high knowledge regarding housing management practices. In breed selection and identification of quality chicks, a large number of the respondents (49.17%) had medium level of knowledge followed by high (27.50%) and low (23.33%). Majority of the respondents (75.83%) had medium level of knowledge regarding brooder management practices, whereas 13.33 per cent and 10.84 per cent had low and high level of knowledge, respectively. In feeding management practices, majority of the respondents (68.33%) had medium level of knowledge followed by low (18.34%) and high (13.33%). These findings are in contradiction with that of Paonam and Ram (2015) ^[9] who observed that majority of the respondents had high knowledge regarding brooding and feeding practices. Majority of the respondents (73.33%) had medium level of knowledge regarding bio-security and disease control practices, whereas 20.83 per cent and 5.84 per cent had low and high level of knowledge, respectively. In marketing practices, majority of the respondents (66.67%) had medium level of knowledge followed by low (27.50%) and high (5.83%). This finding is in contradiction with that of Olumide-Oyanyi and Ajayi (2019) ^[8] who reported that youth farmers had low mean knowledge level in marketing of birds. Majority of the respondents (55.84%) had medium level of knowledge regarding financial practices, whereas 33.33 per and 10.83 per cent had low and high level of knowledge, respectively.

Table 8: Overall Knowledge level of broiler poultry farmers in different areas of broiler poultry farming

S. No.	Knowledge level	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
Housing management practices			
1	Low (<8.58)	24	20.00%
2	Medium (8.58 to 13.32)	76	63.33%
3	High (>13.32)	20	16.67%
Breed selection and identification of quality chicks			
1	Low (<2.01)	28	23.33%
2	Medium (2.01 to 3.79)	59	49.17%
3	High (>3.79)	33	27.50%
Brooder management practices			
1	Low (<5.34)	16	13.33%
2	Medium (5.34 to 8.16)	91	75.83%
3	High (>8.16)	13	10.84%
Feeding management practices			
1	Low (<6.53)	22	18.34%
2	Medium (6.53 to 9.51)	82	68.33%
3	High (>9.51)	16	13.33%
Bio-security and disease control practices			
1	Low (<4.16)	25	20.83%
2	Medium (4.16 to 6.86)	88	73.33%
3	High (>6.86)	7	5.84%
Marketing practices			
1	Low (<2.16)	33	27.50%
2	Medium (2.16 to 3.98)	80	66.67%
3	High (>3.98)	7	5.83%
Financial practices			
1	Low (<2.04)	40	33.33%
2	Medium (2.04 to 4.16)	67	55.84%
3	High (>4.16)	13	10.83%

Results regarding Overall knowledge level of broiler poultry farmers presented in Table 9 revealed that majority of the

broiler poultry farmers (63.33%) had medium level of overall knowledge about scientific broiler farming practices, followed by 20.00 per cent and 16.67 per cent with high and low level of knowledge, respectively. The above finding is in consonance with the findings of Paonam and Ram (2015) ^[9], Rathod *et al.* (2017) ^[10], Jhirwal *et al.* (2018) ^[6] and Slathia *et al.* (2013) ^[11].

Table 9: Overall knowledge level of broiler poultry farmers

S. No.	Overall knowledge level	Broiler Poultry Farmers (n =120)	
		Frequency (f)	Per cent (%)
1	Low (<35.53)	20	16.67
2	Medium (35.53 to 45.13)	76	63.33
3	High (>45.13)	24	20.00

4. Conclusion

The plausible conclusion of the study is that the majority of the broiler poultry farmers (63.33%) had medium level of overall knowledge about scientific broiler farming practices, followed by high (20.00%) and low (16.67%) knowledge. Majority of the broiler poultry farmers had medium level of knowledge about housing management practices (63.33%), breed selection and identification of quality chicks (49.17%), brooder management practices (75.83%), feeding management practices (68.33%), bio-security and disease control practices (73.33%), marketing practices (66.67%) and finance practices (55.84%). It is recommended that we should provide them knowledge by imparting training to enhance their knowledge, skill and attitude towards various aspect of scientific broiler farming to make broiler farming more profitable and viable one.

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