

## ADOPTION OF RECOMMENDED FEEDING PRACTICES IN BACKYARD POULTRY FARMING

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**Abstract:** Rearing indigenous poultry in the backyard is a part and parcel of human culture in our country since ages. Hence, the study was conceptualized with an objective to study the knowledge and adoption level of indigenous poultry farmers on feeding practices. The study was conducted at Palakkarai, Chinna Veerasangili and Periya Veerasangili villages of Perundurai block in Erode district, Tamil Nadu considering its backyard poultry population. A total of 120 respondents were selected by applying proportionate random sampling technique. Data were collected individually through a structured and pre-tested interview schedule from respondents. The analysis of data revealed that only 10.00 of the respondents possessed high level of knowledge on recommended backyard poultry feeding practices while a majority 88.33 per cent and a meager 1.67 per cent possessed medium and low level of knowledge respectively. The study also revealed that cent per cent respondents adopted supplement feeding to their birds. An overwhelming majority of 92.5 per cent and 90.0 per cent respondents adopted using feeder and/or waterer and providing clean water to their birds respectively. Contrastingly, only 17.50 per cent provided mineral supplement to their birds. Pearson correlation analysis revealed that the knowledge had direct relationship with adoption level of the respondents since the 'r' value of 0.283\*\* is significant at one per cent level. This study can foster the policy makers to improve their prudent strategies and massive efforts to make backyard poultry farmers to adopt all the recommended feeding practices using suitable extension methods.

**Keywords:** Backyard poultry farming, feeding practices, knowledge and adoption.

### Introduction

Backyard poultry (BYP) farming, a traditional system of poultry keeping is a component of livestock rearing practiced among the rural folk, is a part and parcel of human culture in our country since ages. Backyard poultry rearing is considered to be eco-friendly [1], because scavenging birds convert the left-over household food materials such as kitchen waste and farmyard waste into unadulterated, biologically high value protein rich products. Backyard poultry makes up about 80% of poultry stocks in low-income food-deficit countries and

provides high-quality food that improves the nutritional status and health of household members [2].

Although scavenging system is preferred in backyard poultry farming, it exposes chickens to harsh conditions such as inadequate feeding, diseases, predation, extreme weather changes and uncontrolled breeding [3] and [4]. Such unfavourable conditions lead to high mortality rates that result from diseases and predation (mainly in chicks) as revealed by the study findings. Research on Backyard poultry proved that its contribution in poverty reduction, food security, gender equity, women's empowerment, wellbeing of the rural population and environmental sustainability in developing countries abetting the stern efforts in achieving the Millennium Development Goals [5]. Despite the importance of backyard poultry, there are threats to the future of backyard poultry from the rapidly changing scenario of the poultry sector and with the decreasing scavengeable feed resource base in villages and the absence, or very limited availability, of natural feed resources, supplementary feeding has become essential [6]. In this background, the study has been conceptualized with the objective to study the knowledge and adoption level of backyard poultry farmers on recommended feeding practices.

### **Materials and methods**

The study was conducted in Perundrai block of Erode district, in Tamil Nadu with a sample size of 120 respondents selected from three villages by applying proportionate random sampling technique based on backyard poultry population. To assess the level of knowledge of backyard poultry farmers on feeding practices, 20 knowledge test was conducted with questions developed in consultation with Subject Matter Specialists (SMSs). Each respondent was given a score of "one" for right answer and "zero" for the wrong answer. Their knowledge level is classified into low, medium and high by making use of equal steps or constant interval data classification. The extent of adoption of practices concerning the backyard poultry feeding practices was assessed by interviewing the farmers. The adoption of each practice was given a score of 'one', while non-adoption was assigned 'zero'. The sum of scores of individual practices was considered as the adoption score of an individual respondent. Also practice-wise adoption was categorized as adopters and non-adopters for better understanding of individual practices. The Pearson correlation analysis was employed to show the relationship between the knowledge level and adoption of backyard poultry feeding practices.

## Results and discussion

The results from Table 1 revealed that only 10.00 of the respondents possessed high level of knowledge on recommended backyard poultry feeding practices while a majority 88.33 per cent and a meager 1.67 per cent possessed medium and low level of knowledge respectively. This could be due to the reason that the practice of backyard poultry farming since age which is considered a part and parcel of villages. In addition, commercial poultry farms were located in and around the study area and probably those farmers knowledge would have diffused to backyard poultry farmers. Notably, none of the farmers know the exact daily requirement of feed for their birds per day. Poor knowledge of backyard poultry farmers in feeding, breeding and management practices lead to poor performance of birds [7].

**Table 1: Distribution of backyard poultry farmers according to knowledge level on backyard poultry feeding practices**

S.No.	Backyard poultry feeding Practice	Small ( $\leq 12$ birds)	Medium (13-21 birds)	Large ( $\geq 22$ birds)	Overall (3-30)
1.	Low	2 (3.64)	0	0	2 (1.67)
2.	Medium	53 (96.36)	42 (87.50)	11 (64.71)	106 (88.33)
3.	High	0	6 (12.50)	6 (35.29)	12 (10.00)
	Total	55	48	17	120

## Feeding

All the backyard poultry farmers reared their birds in backyard / free-range system. Under this system, they released the birds early in the morning from and left the birds for scavenging in the surroundings. Birds fulfill their feed requirement by scavenging the kitchen waste, insects, earthworms, grasshoppers, ants, green grasses, leafy vegetables, grains, crop residues, seeds *etc.* near the house and in village alleys, gardens, fields *etc.* In addition to scavenging, all the poultry owners provided a handful of broken rice, bajra, sorghum, maize *etc.* to their birds. These findings are similar to the findings of [7] and [8]. The practice of supplementary feeding to the birds with locally produced feed helps to bridge the fluctuating feed supply gap [8].

Poor feeding of backyard poultry results in low productivity. Extra effort in backyard poultry farming in the area of housing, feeding, animal health care and genetic selection will able to improve flock and clutch sizes, egg and body weights and hatchability, body weight gain and chick survival rates. Some indigenous chickens have actually proved to be having higher

laying capabilities than commercial ones [4]. The finding by Gondwe and Wollny also reported that better feeding management could contribute to 30 per cent of chicken growth potential confirming the positive effect of better feeding on clutch size and hatchability rates reported by the current study [9].

**Table 2: Adoption of backyard poultry feeding practices by backyard poultry farmers**

S. No.	Backyard poultry feeding Practice	Small flock (≤ 12 birds)	Medium flock (13-21 birds)	Large flock (≥ 22 birds)	Overall (3-30 birds)
<b>I.</b>	<b>Feeding system</b>	<b>55</b> <b>(100.00)</b>	<b>48</b> <b>(100.00)</b>	<b>17</b> <b>(100.00)</b>	<b>120</b> <b>(100.00)</b>
1.	Scavenging + Feed supplement	55 (100.00)	48 (100.00)	17 (100.00)	120 (100.00)
2.	Scavenging alone	0	0	0	0
<b>II.</b>	<b>Feed supplement (Left over grain and kitchen waste etc.)</b>	<b>55</b> <b>(100.00)</b>	<b>48</b> <b>(100.00)</b>	<b>17</b> <b>(100.00)</b>	<b>120</b> <b>(100.00)</b>
1.	Once a day	4 (7.27)	5 (10.42)	2 (11.76)	11 (9.17)
2.	Twice a day	51 (92.73)	43 (89.58)	15 (88.24)	109 (90.83)
3.	Not adopted	0	0	0	0
<b>III.</b>	<b>Mineral supplement</b>	<b>2</b> <b>(3.64)</b>	<b>7</b> <b>(14.58)</b>	<b>12</b> <b>(70.59)</b>	<b>21</b> <b>(17.50)</b>
1.	Once a day	0	1 (2.08)	3 (17.65)	4 (3.33)
2.	Weekly	0	2 (4.17)	3 (17.65)	5 (4.17)
3.	Fortnightly/monthly	0	0	0	0
4.	Rarely	2 (3.64)	4 (8.33)	6 (35.29)	12 (10.00)
5.	Not adopted	53 (96.36)	41 (85.42)	5 (29.41)	99 (82.50)
<b>IV</b>	<b>Providing water</b>	<b>48</b> <b>(81.27)</b>	<b>43</b> <b>(89.58)</b>	<b>17</b> <b>(100.00)</b>	<b>108</b> <b>(90.00)</b>
1.	Once a day (Twice a day in summer)	8 (14.55)	12 (25.00)	5 (29.41)	25 (20.83)
2.	Twice a day (Thrice a day in summer)	40 (72.73)	31 (64.58)	12 (70.59)	83 (69.17)
3.	Not adopted	7 (12.73)	5 (10.42)	0	12 (10.00)
<b>V.</b>	<b>Using trough for feed and/or water</b>	<b>48</b> <b>(87.27)</b>	<b>46</b> <b>(95.83)</b>	<b>17</b> <b>(100.00)</b>	<b>101</b> <b>(92.50)</b>
1.	Using feed trough	0	0	0	0

2.	Using water trough	48 (87.27)	43 (89.58)	12 (70.59)	103 (85.83)
3.	Using both	0	3 (6.25)	5 (29.41)	8 (6.67)
4.	Not adopted <i>i.e.</i> , on ground	7 (12.73)	2 (4.17)	0	9 (7.50)

### Watering system

An overwhelming majority (90.00 per cent) of the farmers provided clean water to their birds in addition to the available source of drinking water in the open drain and stagnant water. Over two-third (68.17 per cent) of the farmers provided clean water twice a day and one-fifth of the farmers provided once a day. However, the frequency of providing water during summer was increased by the farmers from once a day to twice a day and from twice to thrice a day during summer season. Ten per cent of the farmers did not provide water to their birds believing that the birds can drink while scavenging in the surrounding [7] and [10]. Majority (85.83 per cent) of the farmers provided water in plastic/aluminum cup, pot or old vessel. This is in line with the findings of Nath [10]. Adoption of feeding trough was very poor *i.e.*, only 6.67 per cent provided feed and water in plastic/aluminum cup, pot or old vessel whereas 93.33 per cent of the farmer did not provide feed in feeder. It could be due to the reason that farmers were feeding their birds together and providing feed in feed trough may predispose the dominant bird to eat more and hence the farmer had to keep as many number of feed trough to feed their birds which is practically difficult. Less than one-tenth (7.50 per cent) of the farmers adopted neither water trough nor feed trough.

Pearson correlation matrix was worked out to know the relationship between knowledge and adoption of backyard poultry farming practices. It is observed from Table 4.7 that knowledge had direct relationship with adoption level of the respondents since the 'r' value of 0.283 is significant at one per cent level. It may therefore be concluded that knowledge influences the adoption behaviour of the farmers and there exists a relationship between them.

**Table 3: Correlation between dependent variables – knowledge and adoption level**

	Knowledge	Adoption
Knowledge	1	0.283**
Adoption		1

\*\* - Significant at 1 per cent level.

The recommended intervention in backyard poultry farming is composite in nature comprising feeding, health, breeding, management and networking interventions. There is

evidence that isolated initiatives that aim to develop one component without considering possible limitations in the others often fail to produce sustainable results and impacts [11]. Hence, balanced improvement in the composite intervention will augment the backyard poultry farming. In Vision 2030 of Central Avian Research Institute, Izatnagar [12], a strategy is formulated to survey the unexplored alternate feed resources as an alternative or supplement to conventional poultry feed ingredients and developing precise nutrient supply regimes for backyard poultry.

### **Conclusions**

Backyard poultry is a part and parcel of rural life. The study revealed that nearly all the backyard poultry farmers possessed medium to high level of knowledge on backyard poultry feeding practices. It is, therefore suggested that field level functionaries and non-governmental organizations (NGOs) should bestow attention on backyard poultry farmers to utilize their knowledge effectively in adopting recommended feeding practices to improve backyard poultry production.

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