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A STUDY ON HOUSING AND FEEDING MANAGEMENT IN BACKYARD POULTRY REARING IN THRISSUR DISTRICT

Geetha N.[1*] Revathy A.V.[2], Manju Sasidharan[3], Anu George[4] and Balusami C.[5]

[1]Associate Professor, [2]M.Sc., Scholar, [3]Assistant Professor and [5]Professor,
Department of Livestock Production Management
[4]Assistant Professor, Department of Veterinary and Animal Husbandry Extension
College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala

*Corresponding author: ngeetha@kvasu.ac.in

ABSTRACT

The study was conducted in two identified taluks in Thrissur district, to assess the management practices of backyard poultry production systems. In housing poultry, intensive and semi-intensive system was followed by majority of respondents, in Chalakudy and Mukundapuram taluks with flock size of less than five birds. The poultry owners raised indigenous breeds of poultry birds including Kadaknath, Naked neck, Aseel, Tellicherry and cross breeds such as Gramasree and Gramalekshmi. The majority of respondents in Mukundapuram (64 per cent) and Chalakudy taluks (36 per cent) reared flock size of less than five birds respectively. Medium flock size of 6-10 birds were maintained in both taluks (28 per cent). Mukundapuram (36 per cent) progressed in rearing large flock size (>10 birds) but Chalakudy (8 per cent) maintained only less number of flock size. Bird shelters with wooden floors were 52 and 64 per cent, poultry houses with wire mesh floors were 44 and 32 per cent, whereas chicken coops with a concrete floor were only four per cent in the Chalakudy and Mukundapuram taluks, respectively. In feeding, majority of respondents provided homemade feed, left over feed, bran, broken grains along with scavenging with a few commercial feedings. The farmers chose the feed ingredients based on past performance, local accessibility and price and fed in the morning and evening without any supplements in feed.

Keywords: Backyard poultry, management practices, housing, feeding and healthcare

INTRODUCTION

The poultry production systems in India boost agricultural productivity through meat and eggs. In the 'family poultry production system' the small flock of chicken serves as a safe means to

acquire assets and to get rid of poverty. In 2019, there were 851.81 million chickens in the country, a 16.8 per cent rise over the previous census. In 2019, there were 317.07 million backyard chickens across the country, rising 45.8 per cent from the previous census (GOI, 2019). In terms of livestock, the poultry industry is the most adaptable and quickly expanding in the globe. Backyard chicken farming is regarded as a method to be utilise kitchen waste and agricultural wastes for the production of animal proteins. Backyard poultry production often involves indigenous birds with poor performance, with only 70-80 eggs per bird per year for egg production and minimal meat production. However, improved breeds can boost backyard poultry production, resulting in better meat and egg production. The poultry industry in India was primarily organised, accounting for 67 per cent of total output, while unorganised sectors contribute 33 per cent. The Eastern and Southern regions contribute 34.26 per cent and 32.74 per cent, respectively. Thus, the present study was conducted in the backyard poultry production system in two identified taluks in Thrissur district, to study the management practices of backyard poultry production system.

MATERIALS AND METHODS

The study was conducted in two taluks namely Mukundapuram and Chalakudy of Thrissur district. Thrissur is situated in south western India (10.52°N 76.21°E) in the central part of Kerala. The management practices in backyard poultry farming were determined in the study. The multistage random sampling technique was used to select the respondents. In the first stage, two taluks namely Mukundapuram and Chalakudy were selected in Thrissur district. Secondly, one panchayat from each taluk was selected. In the final stage, 25 households were selected from each panchayat. Thus, a total of 50 households formed the sample. Data was collected using a structured questionnaire. At the farmers site, flock size, breeds reared, constructional details *viz.,* floor, roof, bedding materials, feeding practices *viz.,* feeding system, feed type and frequency of feeding in adults and chicks, watering management practices like water sources and frequency of watering were collected.

RESULT AND DISCUSSION

Housing management

The distribution of respondents based on poultry housing management practices are displayed in Table 1. The majority of respondents, 84 per cent in Chalakudy and 76 per cent in Mukundapuram taluks, followed semi-intensive system of raising poultry.

Table 1. Distribution of respondents based on poultry housing system (per cent)

Variables		Categories	Taluks	
			Chalakudy (n=25)	**Mukundapuram** (n=25)
Systems of rearing		Free range	4	0
		Intensive	12	24
		Semi intensive	84	76
Flock size		Small (≤5)	36	64
		Medium (6-10)	28	28
		Large (>10)	36	8
Breeds reared		Indigenous breeds	56	52
		Cross breeds	12	20
		Both	32	28
Construction material used	1. Floor	Wood	52	64
		Wire mesh	44	32
		Concrete	4	4
	2. Roof	Concrete	4	0
		Asbestos	0	0
		Tiles	28	40
		Sheet	68	60
	3. Bedding material	Wood shavings	4	4
		Rice bran	0	0
		Sand	0	0
		Others	0	0
		Nil	96	96
Housing facilities		Share the same house with people	4	0
		Provision of night shelter only	0	0
		Separate house entirely constructed for poultry	96	100
		Separate house with other animals	0	0

practiced intensive rearing. Only four per cent poultry owners practiced the free-range system in Chalakudy and none by Mukundapuram taluk. The findings of the present study disagreed with Fagrach *et al*. (2023) as they observed that the materials used to construct night shelters were typically found on the site. Ozdemir (2020) opined that the poultry enjoyed the freedom to roam throughout the day within free-range coops in urban areas.

The majority of respondents in Mukundapuram (64 per cent) and Chalakudy taluks (36 per cent) reared flock size of less than five birds respectively. Medium flock size of 6-10 birds were maintained in both taluks (28 per cent). Mukundapuram (36 per cent) progressed in rearing large flock size (>10 birds) but Chalakudy (8 per cent) maintained only less flock size. However, these findings were different from those of Rath *et al.* (2015) and Chaturvedani *et al*. (2017) as they reported that the flock size maintained by backyard poultry farmers ranged from 11 to 16 birds in Chhattisgarh. Majority of the poultry owners raised indigenous breeds of poultry birds in Chalakudy (56 per cent) and Mukundapuram (52 per cent) which included Kadaknath, Naked neck, Aseel, Tellicherry. Crossbreeds such as Gramasree and Gramalekshmi were raised in both taluks. Both indigenous and cross bred birds were maintained at Chalakudy (32 per cent) and Mukundapuram taluk (28 per cent). The findings were similar with Singh *et al.* (2021) as they observed that backyard rearing of Vanaraja hens resulted in notably increased egg output, body weight and adaptability.

They also noted that they were accompanied by desi chicken routinely reared in hilly regions. However, these findings were different from those of Pathak and Nath (2013) who revealed that in India, desi type chicken of Vanaraja and Gramapriya birds were being confined in coops. From Table 1, it is evident that bird shelters with wooden floors were 52 and 64 per cent, poultry houses with wire mesh floors were 44 and 32 per cent, whereas chicken coops with a concrete floor were only 4 per cent in the Chalakudy and Mukundapuram taluks, respectively. The most common roofing material utilised in the construction of coops was Galvanised Iron sheet with 68 per cent in Chalakudy and 60 per cent in Mukundapuram taluks, followed by tiled roof 40 per cent (Mukundapuram) and 28 per cent (Chalakudy). Other roofing materials, such as concrete, were used by four per cent of respondents in Chalakudy. Asbestos roofing material was not used in both taluks. Based on the survey, no bedding material was provided to poultry by a large proportion of respondents in both taluks

(96 per cent) whereas, only four per cent of poultry owners provided wood shavings as litter material for birds in both taluks. Other litter material such as rice bran and sand were not used in the two taluks. This finding disagreed with the views of Pathak and Nath (2013) who reported that other litter materials were being used inside the poultry houses.

The majority of respondents, in Chalakudy (96 per cent) and in Mukundapuram (100 per cent) taluks, constructed a separate house for poultry. About four per cent of respondents in Chalakudy shared their same house with their birds. Providing night shelters or housing the birds with other animals was not practiced by the respondents in each taluk. This finding was contrary to those observed by Pathak and Nath (2013) and Fagrach *et al*. (2023) who reported that night shelters for the birds were constructed with locally available economic material which allowed the entry of wild birds and rats. The present situation exposes the birds to greater risk of predators and harsh weather.

Feeds and Feeding practices

The distribution of respondents based on the poultry feeds and feeding practices is given in Table 2. Majority of respondents provided homemade feed along with provision for scavenging in the ranges of 84 per cent and 76 per cent in Chalakudy and Mukundapuram taluks, whereas feed was purchased and fed by 32 per cent in Chalakudy and 28 per cent in Mukundapuram taluks. Only homemade feed was used by 20 per cent in Mukundapuram and 12 per cent of respondents in Chalakudy taluk. Neither scavenging nor scavenging with supplements was practiced in both taluks. Similar results were reported by Adbhai *et al*. (2019) and Kefale and Mitiku (2023) who revealed that the highest proportion of respondents provided supplementary feed like maize (20 per cent), rice (60 per cent) and sorghum (20 per cent) in addition to scavenging and the rest were scavenging only. These results were in contrast to those reported by George and Beena (2018) which provided insights into the prevalent feeding practices among poultry farmers. Their findings revealed a dichotomy in feeding approaches, with the majority of farmers opting for concentrate feed available in the market. This choice reflected a practical and convenient means of meeting the nutritional requirements of birds.

Left over feed was the main source of feeding for birds in Mukundapuram (92 per cent) and Chalakudy taluk (88 per cent). In both taluks, 44 per cent of poultry owners offered bran and a handful

of broken grains such as wheat, bajra and maize etc. The farmers chose the feed ingredients based on past performance, local accessibility and price. Commercial feeding was followed by 16 per cent of poultry owners in Mukundapuram and eight per cent in Chalakudy taluk.

The finding was similar to Choudhary and Kumar (2021) who emphasized the significance of self-produced feed in poultry nutrition. Their research revealed that a substantial proportion of poultry rearers (86.11 per cent) relied on self-produced

Table 2. Distribution of respondents based on poultry feeds and feeding practices (per cent)

Variables		Categories	Taluks	
			Chalakudy (n=25)	**Mukundapuram** (n=25)
Feeding system		Scavenging only	0	0
		Scavenging with supplement	0	0
		Purchased feed	32	28
		Homemade feed	12	20
		Homemade feed with scavenging	84	76
Feed type		Commercial	8	16
		Left-over food	88	92
		Grains / Bran	44	44
		Others	0	0
Frequency of feeding		Morning and evening	100	100
		Morning and afternoon	0	0
		Morning, afternoon and evening	0	0
		Only scavenging	0	0
Providing supplementary feed		Yes	0	0
		No	100	100
Frequency of feeding (frequency/ day)	Chicks	1 time	0	0
		2 time	24	24
		3 time	0	0
	Adults	1 time	0	0
		2 time	100	100
		3 time	0	0

feed. This approach allowed for a degree of control over the nutritional content and quality of the feed, aligning with the goal of providing balanced nourishment. But this study contradicted to Fagrach *et al.* (2023) and Kefale and Mitiku (2023) who revealed that scavenging (13 per cent), scavenging with additional feeding (23 per cent) and purchasing from the market (26 per cent) were the most prevalent feed sources in the studied areas.

All poultry owners practiced an intensive or semi-intensive approach for rearing their birds. Under this system, in both taluks the birds were fed in the morning and evening without any supplements in feed. The majority of respondents hand fed their chicks and adults twice a day, in the morning and evening. This finding was in consonance with that of Choudhary and Kumar (2021) emphasised the frequency of feeding, with 67.78 per cent of respondents opting for twice-daily feedings. However, a difference of opinion was reported from Fagrach *et al.* (2023) who found that 96 per cent of flock owners provided supplements to birds.

Watering management

The survey details from 50 households of two taluks on watering management of the backyard poultry are presented in Table 3.

The study on the major source of water used for their chicken revealed that the majority of the households used well water for drinking to birds in both taluks. The households provided drinking water in

Table 3. Distribution of respondents according to watering practices of poultry rearing (per cent)

Variables	Categories	Taluks	
		Chalakudy (n=25)	**Mukundapuram** (n=25)
Water provided	Yes	100	100
	No	0	0
If provided the source of water	Well water	100	100
	River	0	0
	Tap water	0	0
	Pond water	0	0
Frequency of watering	Free access	80	68
	Morning only	0	0
	Morning and evening only	20	32

containers. Water was provided *ad libitum* by 80 per cent of respondents in Chalakudy and 68 per cent in Mukundapuram taluk. Water was fed both in morning and evening in Chalakudy (20 per cent) and Mukundapuram taluk (32 per cent). This finding was in agreement with that of Khandait *et al.* (2011), Tadesse *et al.* (2013) and Fagrach *et al.* (2023) as they reported that wells and public networks were the most prevalent sources of drinking water for flock owners, accounting for 94.7 per cent of flock owners. Containers made of recyclable materials were used by 97.1 per cent, whereas commercial drinkers were used by 2.9 per cent. They also reported that poor water quality was due to contaminated drinkers 58.6 per cent of farmers interviewed were not cleaning feeders and drinkers. Contrary to this observation, approximately 48.13 per cent of respondents used tap water, 33.75 per cent used river water and 18.13 per cent used the combined river and tap water for their poultry (Weyuma *et al.,* 2015).

CONCLUSION

In housing poultry, intensive and semi-intensive system was followed by majority of respondents, in Chalakudy and Mukundapuram taluks with flock size of less than five birds. The poultry owners raised indigenous breeds including Kadaknath, Naked neck, Aseel, Tellicherry. cross breeds such as Gramasree and Gramalekshmi. Bird shelters with wooden floors, wire mesh floors, and concrete floors were used. The most common roofing material utilised in the construction of coops was GI sheet, followed by tiled roof. No bedding material was provided to poultry by a large proportion of respondents in both taluks, but the majority of respondents constructed a separate house for poultry. In feeding, the majority of respondents provided homemade feed, leftover food, bran, broken grains along with scavenging with a few commercial feedings. The farmers chose the feed ingredients based on past performance, local accessibility and price. They fed the birds in the morning and evening without any supplemental feed. Water from wells used for drinking in birds. Most of the poultry owners hatched the poultry eggs naturally at home, purchased chicks from nearby houses and from government schemes.

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