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Sunilkumar

PG Scholar, Department of LPM,
Veterinary College Bidar,
Karnataka, India

Vivek M Patil

Department of LPM, Veterinary
College Bengaluru, Karnataka,
India

Prashant Waghmare

Department of LFC, Veterinary
College Bidar, Karnataka, India

Vidyasagar

Department of LPM, Veterinary
College Bidar, Karnataka, India

Kartik Alure

PG Scholar, Department of VGO,
Veterinary College Bidar,
Karnataka, India

Rajwardhan

Veterinary Officer, Department of
AHVS, Government of Karnataka,
Bidar

Corresponding Author:

Sunilkumar

PG Scholar, Department of LPM,
Veterinary College Bidar,
Karnataka, India

Evaluation of the constraints to backyard poultry farming in Karnataka

Sunilkumar, Vivek M Patil, Prashant Waghmare, Vidyasagar, Kartik Alure and Rajwardhan

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Abstract

The study was undertaken to identify the constraints perceived by backyard poultry farmers in Bidar district of North Karnataka, India. The constraints were recorded by means of personal interview using a structured schedule and a multistage stratified sampling procedure. A total of 150 respondents from Bidar district formed the study group. Data from the schedules was compiled and analysed using the Garrett's ranking technique for major constraints and the Likert's Scale technique for minor constraints to identify the most important constraints which influence the rearing of backyard poultry. Problems in health care were found to be the most important constraint faced by backyard poultry farmers with a mean Garrett score of 56.52. The other major constraint categories, in decreasing order were found to be production problems (51.34), marketing problems (50.33), general problems (49.05) and feeding problems (45.17). Among the minor constraint groups, low hatchability, low body weight gain, lack of feed availability, poor quality of feed, high disease incidence, distant veterinary facilities, low demand in summer, lack of desi bird consumption, attack by predators and theft were perceived to be the most important.

Keywords: Backyard poultry, constraints, Bidar, Karnataka

Introduction

Poultry farming is one of the fastest growing sub-sectors of Indian agriculture today. In view of the growing concern about meeting the per capita requirement of protein for rural citizens of India, poultry meat and eggs have proven to be the best and cheapest solution to address this issue (Rath *et al*, 2015) ^[13]. The rural backyard poultry systems play a pivotal role in achieving nutritional security of the country in rural areas. India, backyard poultry enterprise has supported the poor, landless farmers and other members of the backward classes to enhance their livelihoods, increase their assets and climb out of poverty (Islam *et al*, 2021) ^[6]. Poultry husbandry has occupied a pivotal position both in providing employment as well as in contributing a substantial proportion to the national GDP.

According to the 20th Livestock Census, India had a total poultry population of 851.81 million (including backyard poultry population of 317.07 million), which was a 45.80% rise over previous livestock census. The total egg production from commercial poultry is 84.91 billion while that from backyard poultry is 18.41 billion, contributing 82.2 and 17.8 per cent of the total egg production, respectively (BAHS, 2019) ^[2]. Meat and eggs from such birds are inexpensive and a rich source of protein and energy for poor households. Improvements in their production can meet the nutritional demand in the household and in the community by increasing their social standing and financial autonomy (DAHD, 2018) ^[4]. In India, about 15.00% of the total poultry output is derived from backyard poultry production.

The poultry population in Karnataka is 59.5 million and has increased by 25.94% over the previous census. Keeping in view the importance of backyard poultry farming in Bidar district, and the paucity of literature on the rearing practices, this study was undertaken to examine the various aspects of backyard poultry farming in Bidar district. Proper assessment and evaluation of constraints faced by the backyard poultry farmers would enable suitable interventions in the form of skill development or provision of superior birds, equipment or financial support. These would greatly assist the financial and nutritional security of backyard poultry farmers, and contribute to the rural economy.

Methodology

The present study was conducted in Bidar district situated in Karnataka State. Geographically, it resembles the crown of the state occupying its north-eastern corner, and lies between 17°35' and 18°25' North latitude and 76°42' and 77°39' East longitude. Bidar district has an area of 5448 square kilometres and is bounded by Maharashtra on the north-west, Telangana on the east, and Gulbarga of Karnataka on the south. Bidar district has poultry population of about 7,34, 095, of which Humnabad taluka contains highest poultry population of 6,04,406 followed by Aurad 53,667, Basavakalyan 18,866, Bidar 28,025 and Bhalki 14,778 (AHVS, 2019) [1]. The district experiences semi-arid climate with extreme summer; the dust storms and severe heat waves are common in the district between April and May. Coldest months are December and January. The temperature varies between 20 °C and 42 °C. The summer season in Bidar starts in the first week of March and lasts until mid-June. This is followed by southwest monsoon which continues till late September and from September to end of January is winter.

Sampling design: A multistage stratified random sampling was adopted to select the talukas, villages and respondents for the present study. In the first stage of selection, Bidar, Aurad and Humnabad talukas were selected for the study based on the larger population of desi poultry birds and consultations with officials of the Animal Husbandry department regarding the availability of the backyard poultry rearing in larger proportion in Bidar district. In the second stage of selection, thirty villages were selected for the detailed survey, ten villages from each selected taluka, based on the strength of backyard poultry, the villages were identified after consultation with officials of the Department of Animal Husbandry and Veterinary Services, Government of Karnataka, giving due consideration to factors like availability of backyard poultry rearing and road connectivity. In the third stage of selection, five respondents were selected from each village at random for documentation of existing backyard poultry rearing and marketing practices and identification of constraints faced by the backyard poultry farmers for the present study. A total of 150 backyard poultry keepers were covered under this study.

Data collection and analysis: Relevant variables to study the constraints to backyard poultry production were selected based on the pilot survey conducted in a non-sampling area and discussion with experts. This formed the basis for developing the schedule of enquiry. The schedule of enquiry was pre-tested and appropriate modifications in the construction and sequence of questions were made. The structured and pre-tested interview schedules were filled on the spot by personal observations and face-to-face interview with backyard poultry farmers. Constraints for the present study were operationalized as problems perceived by the poultry farmers in managing the backyard poultry birds and ranked according to the individual frequency obtained. Data from the schedules was compiled and analyzed using the Garrett's ranking technique (Garrett and Woodworth, 1971) [5] and the Likert's scale technique (Likert, 1932) to identify the most important constraints which influence the rearing and marketing of backyard poultry.

Results and Discussion

Garret's ranking of major constraints: The mean Garrett's scores and ranks of the major categories of constraints faced by

backyard poultry farmers in the study area are presented in Table 1. Problems in health care were found to be the most important constraint faced by backyard poultry farmers with a mean Garrett score of 56.52. The other major constraint categories, in decreasing order were found to be production problems, marketing problems, general problems and feeding problems with respective Garrett's score of 51.34, 50.33, 49.04 and 45.17.

Likert's Scale technique for minor constraints: The Likert's scale analysis of constraints in backyard poultry farming, with distribution of responses and modal values, are presented in Table 2. In the category of production-related constraints to backyard poultry farming, the respondents identified low hatchability, low body weight gain, low egg production in summer and poor germplasm in decreasing order of importance. Modal values indicated that low egg production in summer was a major constraint whereas low hatchability and low body weight gain were moderate constraints.

In the category of feeding problems, 63.33% of the respondents felt that lack of feed availability was a major constraint. High cost of feed was ranked second and a moderate constraint with a modal value of 34.00%. Poor quality of feed was ranked third, with most of the respondents not considering it as a constraint.

Among the health care constraints, high disease incidence, lack of vaccination, distant veterinary facilities and lack of deworming were ranked in decreasing order of importance. The majority (71.33%) of the respondents identified high disease incidence as a major constraint; whereas 48.00% of respondents identified lack of vaccination as a moderate constraint, and lack of deworming (55.33%) and distant veterinary facilities (56.67%) were not considered as constraints.

Most (54.00%) of the respondents identified low demand in summer as a major constraint and it was ranked number one. Dependence on middleman (36.00%) was a moderate constraint. The minor constraints (and frequency of response in %) were low sale price of egg (42.67) and lack of desi bird consumption (38.00%). Low sale price of meat was not considered as a constraint by the backyard poultry farmers.

Among the general problems, the moderate constraints (and frequency of response in%) were theft (46.00), lack of training (43.33), attack by predators (42.00), lack of scientific knowledge (40.00%), and difficulty in obtaining finance (38.67). The minor constraint was complaint by the neighbours (30.00%). Further majority (62.00%) of the respondents felt that lack of time was not a constraint. The findings were in agreement with those of Mandal (2006) [10], Khandait *et al.* (2011) [7], Nath *et al.* (2012) [11], Pym and Alders (2012) [12] and Sailo and Rahman (2017) [15].

Table 1: Mean Garrett's scores and ranks of the major categories of constraints in backyard poultry practices in different talukas of Bidar district

Constraints	Humnabad		Bidar		Aurad		Overall	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Production	76.50	4	84.57	4	95.63	1	51.34	2
Feeding	75.60	5	67.90	5	82.33	3	45.17	5
Health care	96.53	1	93.77	1	92.30	2	56.52	1
Marketing	82.07	3	88.20	2	81.37	4	50.33	3
General	89.30	2	85.57	3	70.37	5	49.04	4

Table 2: Distribution of responses, modal values and ranks of the constraints in backyard poultry practices in different talukas of Bidar district (as per Likert's Scale technique)

Constraints	Responses (%)				Rank
	Major	Moderate	Minor	Nil	
Production					
Poor germplasm	17.33	12.67	25.33	44.67	4
Lower hatchability	34.67	49.33	16.00	0.00	1
Lower body weight gain	34.67	48.67	16.67	0.00	2
Low egg production	30.67	28.00	21.33	20.00	3
Feeding					
High cost of fed	18.67	34.00	19.33	28.00	2
Poor quality feed	14.00	26.67	2.00	57.33	3
Lack of feed availability	63.33	8.00	5.33	23.33	1
Health care					
High disease incidence	71.33	16.67	12.00	0.00	1
Lack of vaccination	43.33	48.00	0.00	8.67	2
Lack of deworming	2.67	31.33	10.67	55.33	4
Distant veterinary facilities	25.33	6.67	11.33	56.67	3
Marketing					
Lack of desi bird consumption	18.67	32.67	15.33	33.33	2
Low demand in summer	54.00	20.67	0.67	24.67	1
Low sale price of egg	4.67	21.33	42.67	31.33	5
Low sale price of meat	4.67	26.67	38.00	30.67	4
Dependence on middlemen	12.67	36.00	22.67	28.67	3
General					
Lack of scientific knowledge	26.00	40.00	12.67	21.33	3
Lack of time	0.00	17.33	20.00	62.67	7
Attack by predators	28.00	42.00	30.00	0.00	1
Theft	26.00	46.00	23.33	4.67	2
Destruction of garden crops	18.67	43.33	5.33	32.67	4
Complaints by neighbours	20.00	23.33	30.00	26.67	6
Difficulty in obtaining finance	22.00	38.67	4.00	35.33	5

Note: Modal values are in bold font

Conclusion

The results clearly indicate that the top-most constraint in backyard poultry farming in the present study was health care of the birds; this was due to distant veterinary facilities, high mortality of chicks, lack of knowledge about deworming and vaccination practices, lack of awareness about disease control, and worries about zoonotic diseases like bird flu and Ranikhet disease. The second major constraint was found to be production performance majority of the backyard poultry farmers faced problem like non-availability of high yielding breed of poultry chicks and lack of awareness about brooding technique. The third major constraint was marketing of birds and eggs; there was good demand for eggs and meat round the year in the village itself. This could be attributed to good flavour possessed by these birds by feeding in scavenging area compared to commercial broilers and commercial layers. Chicken egg and meat can be classified under organic egg and meat. However, there is no systematic marketing facility on cooperative lines or networked type of marketing through which the poultry producers can market their produce to urban markets where demand for organic egg and meat is very high. The other minor constraints were general management practices and feeding practices - protecting chicks from theft and predators, lack of scientific knowledge and difficulty in obtaining finance were serious issues. Lack of knowledge about feeding, seasonal availability of feed and high cost of feed were additional constraints, though not of serious importance.

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