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Quantitative and qualitative characteristics of backyard poultry in Bidar district of Karnataka

[1]Sunil Kumar, [2]Vivek M Patil, [3]Prashant Waghmare, [4]Vidyasagar, [5]Kartik Alure and [6]Rajwardhan

[1]PG Scholar, Department of LPM, Veterinary College Bidar, Karnataka, India

[2]Department of LPM, Veterinary College Bengaluru, Karnataka, India

[3]Department of LFC, Veterinary College Bidar, Karnataka, India

[4]Department of LPM, Veterinary College Bidar, Karnataka, India

[5]PG Scholar, Department of VGO, Veterinary College Bidar, Karnataka, India

[6]Veterinary Officer, Department of AHVS, Government of Karnataka, Bidar, Karnataka, India

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Corresponding Author: Sunil Kumar

Abstract

The study was carried out to characterize the quantitative and qualitative characteristics of backyard adult birds in Bidar district of Karnataka state. A multistage stratified random sampling was adopted to select 150 backyard poultry farmers from 30 villages in 3 selected talukas of Bidar district. The quantitative characters and qualitative characters were recorded during research study. The overall average body weight, shank thickness, height, wing length and shank length of adult birds was found to be 2.010±0.026 kg, 11.02±0.189 mm, 55.62±0.410 cm, 25.41±0.238 cm and 10.85±0.125 cm, respectively. Majority of birds had multicolour plumage (25.3%), yellow shank colour (54.7%), of the birds showed single type comb (94.2%), and red coloured ear lobe (85.4%). This study revealed distinctive variations among the birds of different talukas in Bidar district, providing the basis for further characterization of these native birds.

Keywords: Backyard poultry, Bidar, Karnataka, qualitative and quantitative characters

Introduction

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) [7]. Poultry husbandry has occupied a pivotal position both in providing employment as well as in contributing a substantial proportion to the national GDP. Backyard poultry rearing is common among rural and landless families. In village poultry systems the production of poultry meat and eggs is extremely efficient in terms of feed and water inputs. These nutritious products can supplement household grain-based diets. Family poultry have a special place as they are under the control and managed by the women, children and the elderly. They require low investment, yield high economic returns, assist in pest control, and provide manure for fertilizer.

The desi eggs and birds have high demand in the markets as people believed that local eggs and meat are of high nutritive quality. It is apparent that desi birds or look alike of desi birds fetch more prices both for eggs as well as meat (Sailo and Rahman, 2017) [9]. Market studies show that prices per kg live weight for these birds can be 50–100% higher than that of industrially produced birds (Conroy, *et al.*, 2005) [5]. 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 qualitative and quantitative characters of backyard poultry farming in Bidar district.

Materials and Methods

The present study was conducted in Bidar district situated in Karnataka State which lies between 17°35′ and 18°25′ North latitude and 76°42′ and 77°39′ East longitude. It 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) [2]. 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: The quantitative characters like body weight, height, wing length, shank length and shank thickness and qualitative characters like plumage colour, shank colour, comb type, and earlobe colour were examined and recorded during research study. Data from the schedules was compiled and analyzed using the data analysis tools in Microsoft Excel 2019 software.

Results and Discussion

Quantitative characteristics of backyard poultry

The quantitative characteristics of backyard poultry, including body weight, shank thickness, height of bird, wing length and shank length, are given in Table 1. The overall average body weight, shank thickness, height, wing length and shank length of adult birds was found to be 2.010±0.026 kg, 11.02±0.189 mm, 55.62±0.410 cm, 25.41±0.238 cm and 10.85±0.125 cm, respectively. These were similar to the findings of Kalitha *et al.* (2011) [8] and Chaterjee and Yadav (2008) [4].

Qualitative characteristics of backyard poultry

The qualitative characteristics of backyard poultry are given in Table 2.

Plumage colour: Majority (25.3%) of the birds had multicolour plumage colour in the study area followed by red, brown, red brown, white and black plumage with 18.0, 16.0, 14.7, 13.3 and 12.7 percent, respectively. The findings were in agreement with the findings of Singh and Singh (2004) [10], Tantia *et al.* (2005b) [12], Vijh *et al.* (2005b) [13], Gopinath (2013) [6] and Sudhir (2021) [11] who reported that majority of birds showed multicolour, followed by grey, white and black.

Shank colour: More than half (54.7%) of the bird in the study area had yellow shank colour, followed by white (28.7%) and black (16.7%). The results were in agreement with the findings of Tantia *et al.* (2005b) [12], Addisu *et al.* (2013) [1] and Sudhir (2021) [11].

Comb type: Most (94.2%) of the birds showed single type comb in the study area while the rest showed pea type combs. Similar findings were reported by Vijh *et al.* (2005b) [13], Tantia *et al.* (2005a) [12], Gopinath (2013) [6] and Sudhir (2021) [11].

Ear lobe colour

Most (85.4%) of the birds had red coloured ear lobe and the remaining (14.7%) had white coloured ear lobes. Similar findings were reported by the Vijh *et al.* (2005b) [13], Tantia *et al.* (2005a) [12],

Table 1: Quantitative characteristics of backyard poultry in different talukas of Bidar district

Attribute	Humnabad	Bidar	Aurad	Overall
Body weight (kg)	1.980±0.045	1.980±0.044	2.050±0.045	2.010±0.026
Shank thickness (mm)	10.62±0.369	10.61±0.362	11.83±0.203	11.02±0.189
Height (cm)	54.88±0.75	54.90±0.735	57.06±0.606	55.62±0.410
Wing length (cm)	24.78±0.422	24.80±0.414	26.64±0.351	25.41±0.238
Shank length (cm)	10.81±0.226	10.75±0.228	11.00±0.197	10.85±0.125

Table 2: Qualitative characteristics of backyard poultry in different talukas of Bidar district (%)

Attribute	N	Humnabad	Bidar	Aurad	Overall
Plumage colour					
Brown	24	22	18	8	16.0
Red	27	22	18	14	18.0
Black	19	12	8	18	12.7
Red brown	22	14	16	14	14.7
White	20	12	16	12	13.3
Multicolour	38	18	24	34	25.3
Shank colour					
White	43	28	26	32	28.7
Yellow	82	54	64	46	54.7
Black	25	18	10	22	16.7
Comb type					

Single	130	98	96	95	94.2
Pea	20	6	8	6	5.8
Ear lobe colour					
White	22	16	16	12	14.7
Red	124	84	84	88	85.4

Conclusion

The results indicated that the adult backyard poultry in the study area had body weight, shank thickness, height, wing length and shank length of 2.010 kg, 11.02mm, 55.62 cm, 25.41 cm and 10.85 cm, respectively. The plumage colour was influenced by sex in poultry (Sexual dimorphism). Most of the indigenous backyard birds in the study area had multicolour plumage, followed by red, brown, red brown, white and black. Considering the hardy nature and productive performance of these birds, there is vast potential for development of improved backyard strains. Indigenous chicken need further investigation for molecular characterization and genetic similarity/ divergence with other Indian breeds and efforts must be taken to completely characterize and conserve these birds.

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