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CARCASS CHARACTERISTICS OF GRAMAPRIYA BIRDS UNDER FARM AND VILLAGE MANAGEMENT CONDITION

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ABSTRACT

In India, rural Backyard Poultry though still contributing nearly 30 per cent to the national egg production, is the most neglected one. Gramapriya (a layer type chicken for backyard) female line has been developed from Dahlem Red breed of chicken and is a multi-coloured egg purpose chicken variety developed for free range and rural backyard rearing. The present study was conducted one hundred fifty (150) day-old chicks of Gramapriya birds at Ranchi Veterinary College, Ranchi. After two months of brooding these chicks were randomly divided into three groups i.e. deep litter, semi-intensive and backyard system of management. Average body weight gain, feed consumption and feed conversion ratio was observed to be highest in Deep litter system of management followed by semi-intensive and backyard system. Better growth of giblet and non edible parts was observed under backyard system as compared to deep litter and semi-intensive system of management. Organoleptic parameters and overall acceptability were also found to be higher in backyard system than that of deep litter and semi intensive system of management.

Key words : *Carcass, grampriya, management and poultry*

Poultry farming in India was mostly backyard venture but it has been now transferred to as a full fledged sophisticated poultry industry and became an integral part of agricultural providing gainful employment, thereby raising socioeconomic status of large number of people. Rural backyard poultry though still contributing nearly 30 per cent to the national egg production, is the most neglected one. Rural poultry farming utilize surplus coarse grains, kitchen waste and greenery and all other food materials available on scavenging. It also serves as efficient waste disposal system by converting left over grains like kitchen wastes, tender leaves, insects, worms, maggots, fish, marine wastes etc. These aspects directly or indirectly contribute to production economy. Gramapriya can easily pick up its food from the backyard once it does learn to scavenge. Gramapriya (a layer type chicken for backyard) female line has been developed from Dahlem Red breed of chicken and is a multi-coloured egg purpose chicken variety developed for free range and rural backyard rearing. The present study is aimed to assess the effects of different management systems on performance and carcasss characteristic under agro-climatic condition of Chotanagpur, Jharkhand.

MATERIALS AND METHODS

One hundred fifty (150) day-old chicks of Gramapriya birds were selected at poultry farm of Ranchi Veterinary College, Ranchi. The brooding of the chicks was done for two months on standard managemental conditions. After two months of brooding, these chicks were randomly divided into three groups i.e. deep litter, semi-intensive and backyard system of management. In each system 50 birds were kept. Under semi-intensive system, birds were provided with housing with nests. A wire net camp attached to the house where these chicks can walk freely. The birds which were supplied to the farmers for their evaluation under backyard system were housed only at night. Under backyard system, birds were provided with some amount of supplementary feed in the form of kitchen waste, broken rice or wheat in the morning and allowed to walk to a distance in search of feed and these birds used to come back at dusk. Chicks were fed standard balanced feed (1).

RESULTS AND DISCUSSION

Growth performance

Weekly body weight was significantly higher in deep litter and semi intensive system than that of backyard system of management up to 19th weeks of age. The body weight of birds under deep litter system was found to be higher though not significant in comparison to semi intensive system. The mean body weight of birds

Table-1: Performance of Grampriya birds under different system of management

Periods	Treatment groups			
	T_1 (Deep Litter)	T_2 (Semi-Intensive)	T_3 (Backyard)	F value
Body weight gain				
8^{th} week	459.10 ± 5.16 (49)	464.04 ± 4.86 (48)	466.65 ± 5.28 (49)	0.57NS
16^{th} week	1310.54 ± 6.36a (48)	1301.69 ± 7.49a (45)	1263.21 ± 6.51b (48)	14.01**
20^{th} week	1730.46 ± 14.20 (48)	1720.04 ± 16.68 (45)	1687.00 ± 10.60 (48)	2.70NS
	Average feed consumption			t test
9-16 week	513.26 (49)	274.86 (45)	-	17.92**
9-20 week	581.20 (48)	311.93 (45)	-	17.92**
Feed conversion ratio				
9-16 weeks	4.83	2.62	-	
9-20 weeks	5.48	2.97	-	

under backyard system of management was significantly lower in comparison to deep litter and semi intensive system of management during most of the experimental periods (Table-1). The present findings are in close conformity with findings of other workers (2). The difference in results might be attributed to difference in breed-strain of birds, feed supplement, management system and other environmental factors.

The feed consumption in birds of semi-intensive system was observed to be lower due to less feed supplied because they also took their food by grazing and scavenging. The present findings did not agree with the other who reported non- significant effect of type of management system on feed consumption in broiler chicks (3). The average feed conversion ratio during 9-16 and 9-20 weeks of age was 4.83 and 5.48 respectively under deep litter system of management and was 2.62 and 2.97, respectively under semi intensive system of management. Overall, better feed conversion ratio was observed in semi intensive system than deep litter system of management (Table-1). The present findings are in close agreement with the finding (4), who reported significantly difference in feed conversion ratio under different management system. The difference in results might

Table-2: Average carcass yields of Gramapriya bird raised under different management systems.

Parameters		Treatment groups			
		T_1 (Deep Litter)	T_2 (Semi-Intensive)	T_3 (Backyard)	F value
Live weight	Male	1877.20 ± 84.63	1967.20 ± 181.56	1802.80 ± 129.15	0.36NS
	Female	1440.40 ± 61.41	1362.80 ± 34.82	1326.80 ± 64.52	1.11NS
Blood loss (%)	Male	3.25 ± 0.52	2.94 ± 0.43	2.71 ± 0.40	0.32NS
	Female	3.37 ± 0.34	3.07 ± 0.19	2.63 ± 0.16	2.34NS
Defeathered wt. (%)	Male	89.82 ± 0.62	88.99 ± 1.00	89.83 ± 0.25	0.41NS
	Female	90.61 ± 0.55a	88.02 ± 0.44b	90.90 ± 0.63a	7.62**
Breast (%)	Male	25.85 ± 0.75	26.47 ± 0.70	24.83 ± 0.58	1.47NS
	Female	22.13 ± 0.34a	20.93 ± 0.27b	20.65 ± 0.44b	4.87*
Back (%)	Male	18.73 ± 0.28	19.73 ± 0.60	18.59 ± 0.39	1.95NS
	Female	20.73 ± 0.57	20.13 ± 0.45	19.79 ± 0.45	0.93NS
Giblets (%)	Male	3.11 ± 0.10b	3.25 ± 0.08b	3.62 ± 0.11a	7.55**
	Female	4.69 ± 0.27	4.44 ± 0.07	5.11 ± 0.38	1.45NS
Non-edible parts (%)	Male	25.70 ± 0.89	25.30 ± 0.34	27.03 ±0.70	1.73NS
	Female	34.11 ± 1.47	37.40 ± 0.75	36.43 ± 0.64	2.77NS
Dressing % with giblet	Male	74.16 ± 1.02	75.00 ± 0.66	73.88 ± 0.49	0.60NS
	Female	67.20 ± 1.44	63.97 ± 0.64	66.04 ± 0.78	2.61NS
Dressing % without giblet	Male	71.05 ± 0.98	71.75 ± 0.64	70.26 ± 0.60	0.98NS
	Female	62.51 ± 1.52	59.53 ± 0.68	60.93 ± 0.61	2.13NS

Each value is the average of 3 male and 3 female observations
Mean values under the same superscript in a row did not differ significantly.

Table-3: Organoleptic test scores of Gramapriya bird raised under different management systems.

Parameters	Treatment groups			
	T_1 (Deep Litter)	T_2 (Semi-Intensive)	T_3 (Backyard)	F value
Colour/Appearance	5.67 ± 0.21	5.80 ± 0.22	6.07 ± 0.21	0.91 NS
Odour/Flavour	5.67 ± 0.21	5.53 ± 0.27	5.87 ± 0.22	0.51 NS
Texture	5.93 ± 0.21	5.73 ± 0.23	6.40 ± 0.19	2.68 NS
Tenderness	5.60 ± 0.27	5.93 ± 0.27	6.27 ± 0.25	1.61 NS
Juiciness	5.87 ± 0.26	6.00 ± 0.24	6.13 ± 0.26	0.28 NS
Taste	5.80 ± 0.17	5.80 ± 0.20	6.20 ± 0.22	1.33 NS
Overall acceptibility	5.87 ± 0.19	5.80 ± 0.22	6.13 ± 0.22	0.70 NS

Note : Score points: Excellent 7.00, Very good 6.00, Good 5.00, Fair 4.00 and poor 3.00. Each value is the average of 15 observations.

be attributed to difference in type of birds, amount of feed taken, management system and environment conditions.

Carcass characteristics

The different management system had no significant effect on live weight (g), blood loss(%), back (%), non edible parts(%), dressing percentage with giblet and dressing percentage without giblet except breast of female (%), defeathered weight of male (%) and giblet (%) in male (Table-2).

The dressing percentage with giblet of Gramapriya birds under deep litter, semi-intensive and backyard system of management were 74.16 ± 1.02, 75.00±0.66 and 73.88±0.49 % in case of male birds and 67.20 ± 1.44, 63.97 ± 0.64 and 66.04 ± 0.78 respectively in case of female birds (Table-2). Dressing percentage for Desi õ RIR (73.7%) followed by Desi (73.60%) and RIR õ (WLH õ Desi) (73.5%) which is similar to present investigation (5). However, the values of giblet and non-edible percentage were higher for birds of backyard system than those of birds of deep litter and semi-intensive system of management. Better growth of giblet and non edible parts under backyard system as compared to deep litter and semi-intensive system of management might be attributed to the free movement of birds under backyard system.

Organoleptic test

Different management system had no significant effect on any organoleptic parameters like colour, odour, texture, tenderness, juiciness, taste and overall acceptability (Table-3). The present findings are in close agreement with the earlier reports (6). Production system had no effect on tenderness (6). However, all the organoleptic parameters and overall acceptability were found to be higher in backyard system than that of deep litter and semi intensive system of management which might be due to free movement and scavenging.

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