



Evaluation of locally available feeds on performance of Vanaraja birds under Kargil condition

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ABSTRACT

The present study was undertaken to evaluate the locally available feeds in Kargil on the performance of Vanaraja birds. Vanaraja birds (180) were reared from fifth weeks to 75th weeks of age with 2 feeding regimen (groups 1, 2) having 90 birds in each group (6 male, 84 female). Both the groups were fed either compound feed with maize and fishmeal or locally available feeds (wheat, barley and detoxified oilcake) for the whole experimental period. Weight gain at the end of the experiment was 2955.2 and 2903.5 g, respectively, in the 2 groups. Age at first egg laying was at 23–24 weeks in both the groups. Egg production, egg weight, shell weight, shell thickness and mortality were statistically similar in both the groups. Dressing percentage was around 71 in both the groups whereas the blood loss and feather loss was around 4.0 and 7.0%, respectively. Weight of various cuts, viz. leg, back, neck, breast and skin (% of dressed weight) was around 34, 14, 8, 23 and 19%, respectively, in both the groups. Weight of liver, gizzard, intestine, spleen and bursa was also statistically similar in both the groups. It was concluded from the present experiment that locally available feeds may be used for desired growth and egg laying performance without affecting the slaughter traits in Vanaraja birds under Kargil condition.

Key words: Birds, Dressing percentage, Performance, Ladakh, Vanaraja

Kargil, Jammu and Kashmir (India) denotes the thick snow for more than 5 months in a year and extreme low temperature (–40°C at peak winter), low oxygen tension in the atmosphere, low precipitation (200 mm) in terms of snow and intense solar radiation (APR 2007). Meat scarcity during winter is because of unavailability of broilers, mutton and chevon in the market at the same time broilers cannot survive in winter and broiler farm are not developed in the province. Local desi birds cannot fulfil the demand of people. Growth performance of Vanaraja birds under backyard farming in Kargil was better compared to desi and Kashmir Commercial Layer birds (Mondal and Kakati 2010); they can attain 1.05 kg at 12th week with lower metabolizable energy than broilers (Ram Rao *et al.* 2005), and people prefer these birds for dual purpose and low mortality even in winter. Mondal *et al.* (2007) and Mondal and Kakati (2008) observed similar performance in poultry. The objective of the study was to evaluate the locally available feeds on performance of Vanaraja birds replacing maize and fish meal with locally

available feeds i.e., wheat, barley and detoxified apricot oilcake under Kargil condition.

MATERIALS AND METHODS

Vanaraja birds (180), 5-week-old, were reared at poultry farm, RARSS up to 75th weeks age in groups 1 and 2, having 90 birds in each group (6 male, 84 female). Both the groups were fed either compound feed with maize and fishmeal or locally available feeds for whole experimental period (feeds ingredients used and chemical composition are presented in Table 1). They were fed 18.0% crude protein and 2800 kcal metabolizable energy/ kg feed. Chemical composition of the ingredients was estimated as per AOAC (1990). Apricot oilcake was boiled for 1–2 h till granules became soft paste. The routine management programme and health coverage were practiced during the whole experimental period. Body weight of the birds was recorded every 15th day consecutively for 2 days. Egg production calculated on hen day basis, egg and shell weight (0.01 g accuracy) were recorded. Shell thickness was recorded with a vernier calipers scale. Mortality was recorded on daily basis. Birds, 3 male and 3 female, from each group were randomly selected to observe the slaughter traits. Birds were slaughtered by *halal* method and blood loss, feather loss, weight of various organs, cuts were recorded (electronic balance) precisely for calculation.

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Table 1. Ingredients (%) and chemical composition of ration in various groups

	Group 1	Group 2
<i>Ingredients</i>		
Maize	60	0
Wheat bran	2	2
Pice polish	7	-
Fishmeal	8	-
Groundnut cake	20	20
Wheat	-	45
Barley	-	10
Apricot oilcake	-	20
Mineral mixture	3	3
<i>Chemical composition</i>		
ME (kcal/kg)	2813	2778
Crude protein (%)	18.7	18.2
Ether extract (%)	3.85	3.92
Crude fibre (%)	3.42	3.61

Completely randomized design was used to analyze the data described by Snedecor and Cochran (1994).

RESULTS AND DISCUSSION

Initial and final body weight of the birds in both the groups were similar (Table 2), accordingly the body weight gain was also statistically similar. Highest body weight was observed at 44th week (4.61 kg in male, 4.11 kg in female, not shown in table) and then gradually decreased; the final body weight was around 3.50 kg. Age at which the birds started laying was 23–24 week of age, under intensive system of management in both the groups. Zuyie *et al.* (2009) observed similar observation under backyard farming in high altitudes of Nagaland. Mondal and Kakati (2010) observed

the similar growth and laying performance in Vanaraja birds under backyard farming. Egg production (55–57%), egg weight (~50 g), shell weight (6.25 g), shell thickness were also similar in both the groups. These observations are in concurrence with studies of Zuyie *et al.* (2009), Mondal and Kakati (2010) in extensive system of management. The average value for age (23–24 weeks) at first egg was similar in both the groups which was similar to the earlier report of Bhattacharya *et al.* (2005), Kumar *et al.* (2005) and Kumareshan *et al.* (2005) but the age was earlier than the findings of Zuyie *et al.* (2009) which might be due to different environmental factors like feed, climate etc. Mortality of the birds was 5%, which indicated the higher adaptability in higher altitudes though higher than the observation of Buragohain *et al.* (2006) in high altitudes of Arunachal Pradesh, though the authors concluded that Vanaraja birds are highly adaptable to high altitude areas. Egg production characters are also in concurrence with the studies of Krishna and Mahender (2006). Mondal and Kakati (2008) reported that replacement of compound feed with wheat, barley, detoxified apricot oilcake and pea (locally available) in Key Stone Golden birds under Kargil condition was safe without affecting the growth, laying performance and for better economic return.

Dressing percentage was around 71 (Table 3) in both the groups. Blood loss, feather losses were around 4 and 7%, respectively, in both the groups. Weight (% of dressed weight) of various cuts, viz. leg, breast, neck, back and skin was also statistically similar in both the groups. Weight of various organs (% of dressed weight), viz. liver, gizzard, intestine, spleen and bursa was statistically similar in the groups. Results are in close agreement with the studies (Chatterjee *et al.* 2005), who compared growth and carcass quality of Vanaraja with *Grampriya* birds in Andaman, whereas Ahmad *et al.* (2006) evaluated performance of Vanaraja birds in high altitudes of Arunachal Pradesh. Recently, Mondal and Kakati (2010) evaluated performance of Vanaraja, Kashmir Commercial Layer (KCL) and *desi* birds under backyard farming in Kargil and concluded that KCL was better in egg production but people prefer Vanaraja for its rapid weight

Table 3. Slaughter traits of Vanaraja bird

Attributes	Group 1	Group 2
Live weight, g	3458.9±28.5	3508.4±48.5
Dressed weight, g	2513.4±8.6	2508.1±4.20
Dressing%	72.64±0.25	71.15±0.22
Blood loss, %	3.62±0.23	3.68±0.02
Feather loss, %	6.62±0.15	6.65±0.01
<i>Weight (%) of various cuts*</i>		
Leg	34.25±0.23	34.82±0.11
Breast	23.01±0.51	22.9 4±0.20
Back	14.27±0.11	15.11±0.15
Neck	8.55±0.19	8.12±0.13
Skin	19.21±0.24	18.94±1.01
<i>Weight of various organs (%)</i>		
Liver	3.10±0.11	3.15±0.01
Gizzard	2.31±0.12	2.33±0.01
Intestine	3.72±0.11	3.82±0.01
Spleen	0.27±0.01	0.28±0.02
Bursa	0.44±0.03	0.42±0.02

*% of dressed weight.

Table 2. Weight gain and performance of Vanaraja birds in various groups

Attributes	Group 1	Group 2
Initial body weight, g	402.2±1.2	408.5±1.8
Final body weight, g	3475.2±3.4	3498.7±0.5
Weight gain, g	2955.2±15.2	2903.5±12.1
Age at 1 st egg laying, wks	23.1±0.12	24.1±0.11
Egg production, %	57.2±0.50	55.7±0.51
Egg weight, g	51.3±0.22	50.2±0.23
Shell weight, g	6.24±0.02	6.32±0.01
Shell thickness, mm	0.42±0.002	0.43±0.003
Mortality, %	5.0±0.04	5.0±0.03

gain and moderate egg production over *desi* and KCL birds. The authors also concluded that the rearing of these birds under backyard farming is also more profitable than other bird.

It was concluded from the present investigation that rearing of Vanaraja with locally available feeds replacing maize and fishmeal desired growth, egg laying performance may be achieved without affecting the slaughter traits under Kargil condition.

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REFERENCES

- Ahmad F A, Ghosh M K, Pathak P K and Bhattacharya M. 2006. Carcass quality of Vanaraja birds. *Indian Veterinary Journal* **83**: 1315–16.
- AOAC. 1990. *Official Methods of Analysis*. 15th edn. Association of Official Analytical Chemists. Washington, DC.
- APR. 2007. *Annual Progress Report*. Krishi Vigyan Kendra, S.K. University of Agricultural Sciences and Technology, Kashmir, Kargil.
- Bhattacharya M, Buragohain R, Ahmed F A, Pathak P K and Ghosh M K. 2005. Laying performance of Vanaraja birds in high altitude areas of Arunachal Pradesh under backyard system of rearing. *Proceedings of XXIII Annual Conference and National Symposium of Indian Poultry Science Association*. 2–4 February, Hyderabad, India, 2: 369 (Abstract).
- Buragoain R, Ahmad F A, Ghosh M K and Bhattacharya M. 2006. Hatchability and growth performance of Vanaraja birds in high altitude areas of Arunachal Pradesh. *Indian Veterinary Journal* **83**: 762–63.
- Chatterjee R N, Rai R B, Kundu A, Senani S, Sunser J and Jayakumar S. 2005. Performance of growth and carcass traits of Vanaraja and Grampriya in Andaman. *Livestock International* **9**: 20–23.
- Krishna C H and Mahender M. 2006. A study on performance of Vanaraja birds under backyard system of management. *Indian Journal of Field Veterinarian* **1**: 6–10.
- Kumar S, Ngachan S V, Sunder G S and Devi N K. 2005. Production performance of Vanaraja birds under traditional system of rearing in Manipur. *Proceedings of XXIII Annual Conference and National Symposium of Indian Poultry Science Association*. 2–4 February, Hyderabad, India, 2:382 (Abstract).
- Kumaresan A, Pathak K A, Ahmed S K and Chhetri B. 2005. Performance of Vanaraja dual-purpose birds under Mizoram agro climatic conditions. *Proceedings of XXIII Annual Conference and National Symposium of Indian Poultry Science Association*. 2–4 February, Hyderabad, India, 2: 364 (Abstract).
- Mondal G and Kakati B K. 2008. Effect of feeding apricot oilcake on performance of Key Stone Golden birds under cold arid condition. *Indian Journal of Animal Health* **47**: 87–90.
- Mondal G and Kakati B K. 2010. Performance of Vanaraja, Kashmir Commercial Layer and local birds fed on kitchen waste under cold arid condition of Ladakh. *Indian Journal of Animal Nutrition* **27**: 90–92.
- Mondal G, Mir M S and Singh H V. 2007. Partial replacement of compound feed with locally available feeds on performance of layer birds in Ladakh. *Poultry Punch* **23**: 23–30.
- Rama Rao S V, Panda A K, Raju M V L N, Shyamsunder G, Bhanja S K and Shama R P. 2005. Performance of Vanaraja chicken on diets fed containing different concentration of metabolizable energy at constant ratio with other essential nutrients during juvenile phase. *Indian Journal of Poultry Science* **40**: 245–48.
- Snedecor G W and Cochran W G. 1994. *Statistical Methods*. 9th edn. Oxford and IBH Publishing Co., New Delhi.
- Zuyie R, Sharma V S, Bajurbaruah K M and Vidyarthi V K. 2009. Performance of Vanaraja birds under extensive system of rearing at different altitudes in Nagaland. *Indian Journal of Poultry Science* **44**: 411–13.