



Effect of Various Forms of Feed on Growth Performance of Japanese Quail

N. RAJPUT, M. NAEEM, S. ALI*, A. M. SHAH**, H. RIZWANA, A. R. SHAH*** A. R. JEHEJO

Faculty of Animal Husbandry and Veterinary Science, Sindh Agriculture University, Tandojam

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Abstract: 300, day-old quail chicks were purchased from commercial hatchery and kept at Poultry Experiment Station Tandojam. Duration of Experiment was 6-week. Quails were divided into two groups viz. A and B, each group was consisting of 150 quails. Group A, was offered pallet feed while group B mash feed, twice daily and water was made available over 24 hours per day. Both groups were housed in similar management. The results showed that the average feed intake of Japanese quails in-group A and B (403.6 and 455.0gm/b) was significantly different ($p < 0.001$). Average water intake of Japanese quail in-group A and B (877.2 and 925.9 ml/b) was also significantly different ($p < 0.05$). Average live body weight of Japanese quail of group B was relatively higher than group A (158.2 and 133.8 gm /b) respectively. Average Feed Conversion ratio of group B (2.9) was relatively high than group A (3.0). Average weight of liver, heart and gizzard of group B was slightly higher (3.2, 1.4 and 3.5 gm/b) than group A (3.0, 1.3 and 3.3 gm/b), respectively. It was concluded that the weight gain and F.C.R of Japanese quail fed on mash feed was better than fed on pellet feed.

Keywords: Japanese Quail, Feed, Pallet, Mash, F.C.R, Weight gain

1. **INTRODUCTION**

Quails are newly introduced species in poultry industry of Pakistan. Which belong to the family Phasianidea order Galliformes class Aves phylum Chordata kingdom Animalia, species of genus coturnix are native to all continents except America. Quails are commonly seen in Asia, Africa and Europe. Female quails are characterized by light tan feathers with black stippling on the throat and upper breast, while male have rusty brown throat and breast feathers. Quail matures at in about 6 weeks of age is usually in full egg production by 50 days of age. With proper care, Hens lay about 200-300 eggs in their first year production. Life expectancy is only 24 to 30 months. The live body weight of mature female quail ranges from 120 to 160gms, whereas mature male weight ranges from 110 to 140gms. Quail eggs are mottled brown in color and are often covered with a light blue chalky material. The average egg weight is about 10 grams. Incubation period of quail egg is 17 to 18 days; young chick weight is 6 to 7 gm when hatched and are brownish with yellow stripes. Quail lays 75 percent of their eggs b/w 3 to 5 p.m. and 25 percent at night time quail require 14 to 18 hours of light per day to maintain maximum egg production and fertility. (Randall, 2001). Farmers are facing many difficulties in rearing quails due to non-availability of commercial rations, because the requirements of these birds for nutrients are higher as compared to other birds. The information available concerning the nutritive requirements of the quail is

somewhat limited as very little work has been done in Pakistan on quail. Feed contribute about seventy percent cost of total production, now a days farmers are adopting home mix feed (mash) due to its lower cost. Keeping in view the importance of feed an experiment was carried out to investigate the effect of various forms of feeds on growth of Japanese quail.

2. **MATERIALS AND METHODS**

300, day-old quail chicks were purchased from commercial hatchery and kept at Poultry Experiment Station Department of Poultry Husbandry, Faculty of Animal Husbandry and Veterinary Sciences, Tandojam. Quails were initially weighed and divided into two groups viz. A and B, each group was consisting of 150 quails. Duration of Experiment was 6-week. At the completion of 6 week randomly selected 10 quails were weighed and slaughtered for study the visceral organs weight. To make the house comfortable, wooden dust was used as a litter. Two electric bulbs (60 watts) were used at the height of 7 feet over 16 hours per day. At first day, grinded corn was fed to the chicks on the muslin cloth for 24 hours and later chick starter ration (contained 25 percent protein and 1 percent calcium) was provided manually twice daily in the morning and evening daily. Group A was offered chick pellet feed whereas group B was offered chick mash feed. Clean and fresh underground water was made available to birds over 24 hours. - 98 °F temperature was maintained for first week and 93 °F and 88 °F temperature at 2nd

*Department of Meat Science and Technology, University of Veterinary and Animal Science, Lahore, Pakistan.

**Department of Livestock Production, SBBUVAS Sakrand.

***Faculty of Agriculture Engineering, Sindh Agriculture University, Tandojam,

and 3rd weeks and later 82 °F temperature was maintained as house temperature with 50-70 percent humidity. Both groups were housed in similar management. Data were tabulated and analyzed by using statistical computer package in general linear model Minitab (M.T.B., USA 1994).

Following parameters were studied

Feed intake
Water intake
Live body weight.
Feed Conversion Ratio
Giblets weight

3. RESULTS AND DISCUSSION

FEED INTAKE

Total feed intake revealed that group B took comparatively more amount of feed (455.0 gm) than group A, (403.6 gm) per quail respectively (**Table-1**). The analysis shows significant differences ($P < 0.001$) between groups in taking feed.

WATER INTAKE

The birds of group B consumed relatively more water (925.9 ml/b) than group A (877.2 ml/b). (**Table-2**) The analysis shows that the difference between the group was significant ($p > 0.05$).

LIVE BODY WEIGHT

The live body weight exhibited that weight gain in group A, and B was 133.8 and 158.2 g/bird, respectively. Significantly greater weight gain (158.2 g/bird) was recorded in-group B (**Table-3**). Statistically, the differences between the live body weight of different groups was significant ($p < 0.05$).

FEED CONVERSION RATIO

Feed conversion ratio shows that F.C.R was better (2.9) in-group B, as compared to group A, (3.0), respectively (**Table-4**). The observation of F.C.R shows that the differences between the groups were non-significant.

GIBLETS WEIGHT

LIVER, HEART AND GIZZARD

The average weight of liver, heart and gizzard of group B quails was relatively higher (3.2, 1.4 and 3.5) than group A, (3.0, 1.3 and 3.3) gm/ quail, respectively (**Table-5**). The analysis showed non-significant difference in the weight of giblets.

4. DISCUSSION

Present observation clearly indicates that, various form of feed has significant effect on feed consumption. The findings of the present experiment for feed intake are in agreement with those of Boon (1999) who conclude that young quail adjust their feeding behavior

in response to their instantaneous energy needs. While Ocak (2005) observed that feeding of crumble feed have significant benefit over mash feed. Trend of water intake of the quails of different groups was similar to that of feed intake. The maximum water (925.9 ml/b) was consumed by the quails of group B, which also consumed more amount of feed as compared to those quails in-group A. The observation of the present investigation is opposite to Ocak and Erenner (2005) they suggested that restricted feeding can achieve better feed conversion ratio without reducing weight and a significant benefit of feeding the crumble diet over the mash diet was obtained. The weight of giblets was may be slightly affected by various forms of feed, While Raji (1999) found that feed restriction were significantly reduced the giblets and live body weight.

5. CONCLUSION

It was found that the feed and water intake of Japanese quail fed on mash feed was higher than fed on pellet commercial feed. It was concluded from the present study that the results of weight gain and F.C.R of Japanese quail fed on mash feed was better than fed on pellet feed.

Table: 1 Total feed intake gm of Japanese quail/ group

GROUPS		
A	B	Prob.
403.6	455.0	0.001

Table: 2 Total water intake ml of Japanese quail/group

GROUPS		
A	B	Prob.
877.2	925.9	0.04

Table: 3 Average live body weight gm of Japanese quail/ group

GROUPS		
A	B	Prob.
133.8	158.2	0.036

Table: 4 Average feed conversion ratio of Japanese quail

GROUPS		
A	B	Prob.
3.0	2.9	0.041

Table: 5 Average weight of giblets gm of Japanese quails/ group

PARTICULARS	GROUPS		Prob.
	A	B	
LIVER	3.0	3.2	0.464
HEART	1.3	1.4	0.293
GIZZARDS	3.3	3.5	0.109

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