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RESEARCH **N**OTE

Carcass characteristics of male and female Japanese quails at 6 weeks of age

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The objective of this study was to evaluate the carcass characteristics of male and female Japanese quails at 6 weeks of age. A total of 100 one-day old Japanese quail chicks were procured and placed in two separate pens each containing 50 chicks. Sex determination was carried out in day-old chicks by cloacal method. All the birds were provided with a balanced diet containing 2900 kcal of ME/kg of ration and 24 per cent CP with *ad lib* provision of water during the entire experimental period. At the end of the experiment, five birds from each group were sacrificed by cervical dislocation and different parameters like eviscerated yield, neck yield, wing yield, back yield, breast yield, giblet yield, thigh yield and drumstick yield were studied. A significantly higher ($P<0.05$) percentage of eviscerated yield, giblet yield and breast yield was observed in case of the female Japanese quails as compared to males; however, no significant difference was noticed in terms of neck yield, wings yield, back yield, thigh yield and drumsticks yield among both male and female Japanese quails.

Key words : Male, Female Japanese quail, Carcass characters

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Quail is popularly known as Bater. Japanese quail (*Coturnix coturnix japonica*) belongs to class Aves, order Galliformes and family Phasianidae. They are sexually dimorphic birds, exhibiting both monogamous and polygamous relationships. Efficient growth rate results in rapid and early maturity at the age of six weeks (Wilson *et al.*, 1961) leading to its suitability for commercial rearing under intensive management (Egbeyale *et al.*, 2013). Females are heavier than males. The female is characterized by long and pointed feathers with black speckles on the throat and upper breast. The males have rusty brown throat and breast feathers. Sexually active males also have a cloacal gland, a bulbous structure located at the upper edge of the vent which discharges a white foamy material. This unique gland can be used to assess the reproductive fitness of the males. Quail farming has been accepted by farmers as a potential alternative to chicken farming because of its small size, delicacy, cardiac friendly, nutritious meat and egg production potentiality, short incubation period, less floor

space requirement, rapid growth, short generation interval, less susceptibility to disease and low feed intake (Amrutkar *et al.,* 2013). Quail meat is low in fat and cholesterol content and is an ideal food for infants, children, adults, old people and those attempting to control their weights.

A total of 100, one-day old broiler Japanese quail chicks of either sex were procured. The sex of day-old quail chicks was determined by cloacal (vent) examination. The male and female chicks were placed in two separate pens. There were 2 pens, each having a floor area of 40 sq. feet (8 feet x 5 feet) with 50 chicks in each pen. The individual body weight of quail chicks was recorded by electronic balance. Rice husk was used as litter material. The experiment was carried out from last week of March, 2016 to mid of April, 2016 during early to mid summer season. The chicks were fed with isocaloric and isonitrogenous ration throughout the entire experimental period. During the period of study, all the birds were provided with a balanced diet containing 2900 kcal of ME/kg of ration and 24 per cent CP with *ad lib* provision of water. The quail chicks were brooded by using incandescent electric bulbs. The chicks were administered Livotas (liver extract)@1.25 ml/lit of water and Sulcoprim (antibiotic) @ 1g/lit of drinking water. Mixing of Nutriva (probiotic) @ 1g/100 birds and Nutriplex-M @ 2.5ml/100 birds with drinking water was done for better growth of the quail chicks. Routine managemental practices were adopted for both groups as per standard practices.

At the age of 6 weeks, the females were characterized by light tan feathers with black speckling on the throat and upper breast. Males were identified by rusty brown throat and breast feathers. The presence of cloacal gland, a bulbous structure on the upper edge of the vent that secretes a white, foamy material in sexually active male quail is the characteristic feature of the males. The adult body weights of both groups of birds were recorded. The female quails have been recorded comparatively higher body weight than males.

At the end of the experiment, five birds from each group were selected in a random basis and were kept off fed 6 hours prior to slaughter with provision of water before slaughtering. Body weights of each bird were taken prior to slaughter also known as the preslaughter weight. After taking the pre-slaughter body weight, the birds were sacrificed by cervical dislocation and then allowed to bleed for five two ten minutes upto complete cessation of bleeding. The wing ends were cut at the carpal joint. The neck was separated from the head. Along with this, other parts like back, thighs and drumsticks were also removed. The abdominal cavity was then exposed and the liver was secured in the fingers of one hand and the rest visceral organs were pulled caudally. With the help of a pair of scissors the gall bladder was separated from the liver. The gizzard was then separated from the food pipe by cutting at the end of proventriculus and above duodenum. Both the opening of gizzards was then cleaned and external adhesions were removed. Then the gizzard was cut and opened and the inner part was washed with water and then the inner serous lining was removed. All the edible viscera such as heart, liver and gizzard along with the breast meat were then cleaned and weighed.

Statistical analysis :

The data pertaining to various parameters were subjected to statistical analysis under Completely Randomized Design employing one-way analysis of variance-Snedecor and Cochran (1989). The means of different treatments were compared with Duncan's multiple range test (Duncan, 1955) and significance was considered at $P<0.05$ level.

The carcass characteristics of male and female broiler Japanese quails under different treatments are presented in the Table 1 below. The different parameters observed in the current study were within the normal range found in Japanese quails and similar to the findings of Kaur *et al.* (2009). A significantly higher ($P<0.05$) eviscerated yield was observed in female Japanese quails as compared to the male group which may be due to the higher adult body weight in case of the female birds.

No significant difference was observed in the mean cut off parts like neck, wings, back, thighs and drumsticks of male and female quails. This was in agreement with the findings of Ramirez *et al.*, 2013. The percentage yield of giblet of female quails was significantly higher than males. The male and female Japanese quails have been recorded significantly different breast yield which may be due to the higher level of meat deposition in the breast region of female birds (Rathina *et al.*, 1996).

Conclusion :

No significant difference was observed among

Table 1 : Carcass characteristics of male and female Japanese quails at 6 weeks of age

Parameters	Male	Female	Remark
Eviscerated yield (%)	$65.55^{a} \pm 7.54$	$67.57^{b} \pm 5.54$	*
Neck yield (%)	7.01 ± 0.70	7.02 ± 0.50	NS
Giblet yield (%)	$5.76^{a} \pm 0.23$	$6.59^{b} \pm 0.13$	*
Wings yield (%)	9.55 ± 0.15	9.66 ± 0.11	NS
Back yield (%)	19.88 ± 3.03	19.98 ± 2.98	NS
Breast yield (%)	$32.43^{a} \pm 4.03$	$34.33^{b} \pm 3.33$	*
Thighs yield (%)	8.77 ± 1.05	8.82 ± 1.01	NS
Drumsticks yield (%)	6.05 ± 1.55	6.07 ± 1.42	NS

Means bearing different superscripts in the same row differ significantly (* P<0.05) NS= Non-significant

the carcass parameters like percentage yield of neck, wings, back, thighs and drumsticks in case of male and female Japanese quails. From the above study, it can be concluded that the carcass characters in terms of percentage of eviscerated yield, giblet yield and thigh yield were comparatively higher in female Japanese quails leading to better carcass yield than the males.

LITERATURE CITED

Amrutkar, S.A., Leo, J. and Jalaludeen, A. (2013). Influence of mating ratio on fertility and hatchability in japanese quail, *Indian J. Poul. Sci.*, **48** (2) : 145-148.

Duncan, D.B. (1955). Multiple range and multiple F-tests. *Biometrics*, **11**: 1-42.

Egbeyale, L.T., Fatoki, H.O. and Adeyemi, O.A. (2013). Effect of egg weight and oviposition time on hatchability and post hatch performance of japanese quail (*Coturnix coturnix japonica*) *Nigerian J. Anim. Product.*, **40** :102-110.

Kaur, S., Mandal, A.B., Tyagi, P.K. and Tyagi, K.P. (2009). Effect of dietary essential amino acids profile with or without fish meal on meat production in Japanese quail, *Indian J. Poul.Sci.*, **44**(3): 313-318.

Ramirez, J.C.R., Ibarra, J.I., Romero, F.A., Ulloa, P.R., Ulloa, J.A., Matsumoto, K.S., Cordoba, B.V. and Manzano, M.A.M. (2013). Preparation of biological fish silage and its effect on the performance and meat quality characteristics of quails (*Coturnix coturnix japonica*), *Brazilian Archiv. Biol. & Technol.*, **56**(6): 1002-1010.

Rathina, R.K., Jagannath, R.R. and Mahendrakar, N.S. (1996). Effect of feeding extruded diets containing fermented fish and poultry offals on growth and meat quality of broiler chickens, *Internat. J. Anim. Sci.*, **11**(2): 277-282.

Snedecor, George W. and Cochran, William G. (1989). *Statistical methods*, Eighth Ed., Iowa State University Press.

Wilson, W.O., Abbott, U.K. and Abplanalp, H. (1961). Evaluation of coturnix (Japanese quail) as a pilot animal for poultry. *Poult. Sci.*, **40** : 651-657.