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Production performance of Japanese quail in commercial farms

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Abstract
A study was conducted to evaluate the production performance of Japanese quail in Western parts of Tamil Nadu, India. A total of 2000 day old Japanese quail chicks obtained from a private hatchery were subjected to study in a commercial farms in Tirupur district of Tamil Nadu and their performance were assessed. The mean body weight of male and female Japanese quail at 4th and 6th week were 186.84±0.45, 204.13±0.43 and 212.16±0.68, 245.52 ± 0.91respectively. The egg production from 6-46 weeks of age revealed that HDEP (%) and HHEP (%) were 79.00±1.13 and 76.41±1.31respectively. The livability (%) from 0-6 weeks was about 94.54.Considering the production performance of Japanese quail in commercial farms, the same can be promoted as an alternative poultry farming to provide nutritional security and employment to rural youth.

Keywords: Japanese quail-body weight-feed consumption-egg production-hatchability

Introduction
Japanese quail (*Coturnix coturnix japonica*) farming is one of the emerging poultry farming systems in India which is commercially exploited for meat and egg production (Pandian *et al.*, 2017) [1]. Japanese quail are hardy birds and able to thrive in adverse climatic conditions. Advantages of quail farming include less space requirement, short generation interval, high rate of egg production, hardy birds and disease tolerance (Karthika and Chandirasekaran, 2016) [2]. In recent years improved germplasm of quails were released with higher production performance (egg and meat production). Poultry rearing plays important role in improving the rural economy by providing rural women and youth empowerment (Lisa and Shukla, 2015; Subhashini *et al.*, 2018) [3, 4]. The market age of quail is very short (4 weeks) which throws better light on the Japanese quail farming venture. In addition, easy management and livability coupled with no need to deworm and vaccine (Sanglimadan and Richerd churchil, 2018) [5] which attract uneducated, poor and youth. The eggs and meat of Japanese quail are most preferred over that of commercial broilers due to their attractive taste and flavor (Prabakaran, 2003; Swain *et al.*, 2010) [6, 7]. The production performance of Japanese quail has been studied and reported in institution farms. Hence, the present study was carried out to evaluate the various production parameters of Japanese quail in commercial farms of Tamil Nadu, India.

Materials and Methods
The study was conducted in Tirupur district of Western Tamil Nadu, India situated in latitude 11° 6 and between longitude at 76° 49' and 77° 20'. The western agro-climatic zone of Tamil Nadu was purposefully selected for this study because the commercial production of poultry has made remarkable progress in this zone. Entrepreneurial behaviour of the farmers, consumer demand for quail meat in the retail market, premium price for Japanese quail and establishment of hatcheries have contributed to the popularity of quail farming under intensive system in this zone.
A total of 2000 day old Japanese quail chicks obtained from a private hatchery were subjected to study in a commercial farm. The standard management practices were followed under deep litter system of management with *ad libitum* feeding and watering. Body weight was recorded at weekly intervals upto market age. Age at first egg, egg weight, part-time egg production and hatchability performance were recorded. The data collected were subjected to mean performance analysis.

Results and Discussion

The production performances of Japanese quail is presented in table 1. From the present study, it was found that the mean body weight of male and female quail at 4th and 6th week were 186.84±0.45; 212.16±0.68 and 204.13±0.43; 245.52±0.91 respectively. It is clearly understood that female quails are heavier than male quails. At the 10th week of age the breeder weight was about 262.61±1.32. Subhashini *et al.* (2018) [4] recorded lower body weights (20.86 ± 0.42, 46.31 ± 0.84, 75.53 ± 1.30, 124.67±1.67 and 166.09±1.76) at the end of 1st, 2nd, 3rd, 4th and 5th week respectively. Sanglimadan and Richerd churchil, (2018) [5] recorded that the average body weight of 263.77±0.28 and 234.2±0.19 in female and male quails at 6th week of age respectively. However, the 6th week body weight of White breasted quail, CARI quail and PES (Poultry Experimental Station) quail were 175.11±1.09, 186.76±0.86 and 179.78±0.58 respectively (Krishna *et al.*, 2015) [8]. Vinothraj *et al.* (2019) [9] reported that average body weight of Namakkal Gold quail at 6th week was 235.77±1.74 g. The variation the body weight is mainly due to genetic variation, managemental procedures and environment which play a major role in the growth performance of the Japanese quails.

Table 1: Production performance of Japanese quail

Sl. No.	Parameters	Results
1	Hatch weight (g)	9.29±0.01
2	Age at sexual maturity (days)	40
3	4th week male body weight (g)	186.84± 0.45
4	4th week female body weight (g)	204.13±0.43
5	FCR (0-4 wk)	2.3
6	6th week male body weight (g)	212.16±0.68
7	6th week female body weight (g)	245.52±0.91
8	10th week breeder body weight	262.61±1.32
9	Livability% (0-6 wk)	94.54
10	Feed consumption (gm) (0-6 wk)	458.50
11	FCR (0-6 wk)	2.53
12	Age at sexual maturity (d)	40
13	HDEP (6-46 wk)%	79.00±1.13
14	HHEP (6-46 wk)%	76.41±1.31
15	HDEP (6-46 wk) (No's)	219
16	HHEP (6-46 wk) (No's)	208
17	Average Egg wt. (g)	13.12±0.08
18	Livability% (7-46 wk)	95.00
19	Feed consumption (kg) (6-46 wk)	11.21
20	Fertility (%)	78.12±1.44
21	Hatchability (%)	63.85±1.78
22	No. of chicks per dam (6-46 wk)	145

The average livability rate of Japanese quails from 0-6 weeks age was about 94.54 per cent. Sanglimadan and Richerd churchil, (2018) [5] recorded the mean livability (%) of 93 in Namakkal quail-I whereas, Subhashini *et al.* (2018) [4] noticed overall livability of Japanese quail was 96.00 ± 0.88 per cent. Initial mortality in quails may be due to improper brooding, failure to acclimatize to the new environment or climatic factors.

From the present study, it was found that the overall cumulative feed intake was 458.50 gm at 6 weeks of age. However, Devi *et.al.* (2012) [10] observed a higher cumulative feed intake of 946.68 g, whereas Kanagaraju and Omprakash (2015) [11] observed a cumulative feed consumption of 563.12g at 6 weeks of age. The variation might be due to variation in the genetic groups and growing environment. The age at sexual maturity was about 40 days in the present study, whereas (Krishna *et al.*, 2015) [8] recorded 43, 46 and 49 days in Central Avian Research Institute (CARI, U.P., India), White breasted and PES (Poultry Experimental Station) Japanese quail respectively. On the other hand, the mean age at first egg varied from 35 to 63.4 days as reported by Junpiao *et al.* (2004) [12].

The overall hen day egg production and hen housed egg production in layers from 6 to 46 weeks was 79.00±1.13 and 76.41±1.31 per cent respectively. Similar results were observed by Subhashini *et al.* (2018) [4] with mean overall hen day egg production of 79.40±6.00 per cent. Krishna *et al.*, (2015) [8] reported that the egg production was initiated with range of 21.42±1.18 to 32.67±0.56 at 6 -10 weeks of age. They also noticed that 19-22 weeks of age the egg production was higher in PES (79.83±0.64%), CARI (71.62±0.62%) and white breasted (49.28±0.43%) respectively. The average egg weight was about 13.12±0.08 grams. Similar result was observed by Subhashini *et al.* (2018) [4] with mean average egg weight of 13.63 ± 0.34grams. The percent fertility and hatchability was 78.12±1.44 and 63.85±1.78 respectively. Japanese quail produces 145 chicks per dam during 6-46 weeks of age. The livability (%) from 7-46 wk was about 95 with better production performance is encouraging to Japanese quail farmers.

From the present study, it was concluded that Japanese quail are performing well in the western agro climatic conditions of Tamil Nadu. As an alternative to poultry farming, Japanese quail can be promoted widely as a new venture to provide nutritional security and employment to rural youth.

References

1. Pandian C, Sundaresan A, Ezhil Valavan S, Omprakash AV. Economic traits and production performance of Nandanam Quail reared at different cage stocking densities, The Indian Journal of Veterinary Sciences and Biotechnology 2017;13(2):31-33.
2. Karthika S, Chandirasekaran V. Carcass characteristics of Namakkal quail -1 International Journal of Science, Environment and Technology 2016;5(4):2257-2264.
3. Lisa A, Shukla R. An analysis of opportunities and challenges in poultry sector in global and Indian perspectives. International journal of management and social science research 2015;3(1):27-35.
4. Subhashini J, Radhakrishnan L, Ezhil Valavan S, Ramesh J. Effect of dietary inclusion of chocolate waste on laying performance and egg quality in Japanese quails (*Coturnix coturnix* Japonica), The Pharma Innovation Journal 2018;7(11):205-207.
5. Sanglimadan K, Richerd churchil R. Production performance of two strains of Japanese quail under deep litter system of management. Indian veterinary journal 2018;95(4):33-35.
6. Prabakaran R. Good practices in planning and management of integrated commercial poultry production in South Asia. Rome, FAO Animal Production and Health 2003, 159.
7. Swain BK, Singh NP, Chakurkar EB, Naik PK. Quail production and management technology, ICAR-Research Complex for Goa, Extension folder: 10 / 2010.
8. Krishna D, Reddy VR, Kochewad SA. Evaluation of Performance of Different Japanese quail (*Coturnix Coturnix* Japonica) Varieties. Agro Economist 2015;3(2):59-61.
9. Vinothraj S, Alagesan P, Siva M, Srinivasan RD.

Production performance of Namakkal Gold quail in Western zone of Tamil Nadu. Indian Journal of Research 2019;8(1):2250-1991.
10. Devi KS, Gupta BR, Prakash MG, Reddy AR. Genetic parameters of feed efficiency and daily weight gain in Japanese quails, Indian Journal of Veterinary and Animal Sciences Research 2012;8(6):13-17.
11. Kanagaraju P, Omprakash AV. Effect of Xylo oligosaccharides (XOS) from rice bran on growth performance of Japanese quails. Indian Veterinary Journal 2015;92(9):47-49.
12. Junpiao, Okamoto S, Kobayashi S, Wada Y, Yoshizane M. Purebred and crossbred performances from a Japanese quail line with very small body size. Animal Research 2004;53:145-153.