



ORIGINAL RESEARCH PAPER

Veterinary Science

PRODUCTION PERFORMANCE OF NAMAKKAL GOLD QUAIL IN WESTERN ZONE OF TAMIL NADU

KEY WORDS: Namakkal Gold Quail, Body weight and FCR.

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ABSTRACT This study was conducted to evaluate the production performance of Namakkal Gold Quail in Western Zones of Tamil Nadu. 290 Day old Nammakal Gold Quail chicks were obtained from TANUVAS -Veterinary college and Research Institute, Namakkal and distributed to farmers in different blocks of Erode district. Average hatch weigh of day old chicks were 33.35 ± 0.10 g. Body weight and Feed intake recorded in farmers field at weekly interval upto six weeks of time. The traits studied were body weight, Body weight gain, Feed intake and Feed conversion ratio. The mean values and standard errors of body weight, body weight gain, Average daily Feed intake and Feed conversion ratio of Namakkal Gold Quails were 235.77 ± 1.74 g, 206.04 ± 1.6 g, 33.6 ± 0.17 g and 3.26 ± 0.08g at sixth week of Age. The study was concluded that observed productive performance of Namakkal Golden quails can serve as an alternate source for meeting protein requirement of human population.

Introduction

Japanese quails (*Coturnix coturnix japonica*) have been domesticated since the twelfth century AD in Japan, mostly for their singing ability. Commercial production of this species first started in Japan and was successfully introduced later to America, Europe and the Middle East during 1930-1950. Around 1974, the Japanese quails were brought to Central Avian Research Institute, Iztanagar and were subsequently brought to Tamil Nadu during 1984 (Asha, 2011). Over time, a number of animal science institutions have recognized the potential of Japanese quails as an egg and meat producing birds and as a result initiated the commercial farming of Japanese quails. Because Japanese quail farming is bestowed with farming-friendly factors such as reduced space and feed requirements, early maturity, fairly high egg production rate, high disease resistance and low financial investment, it soon became immensely popular in several regions of India. Japanese quails are marketed at 4-5 weeks of age for meat with a body weight of 200-240g. Females start laying eggs at about 6-7 weeks of age and are generally reared up to 10-12 months of age for breeding. During this period, each female lays about 250-270 eggs, each egg weighing ~12-13g (Asha, 2011). At present, Japanese quails constitute the third largest avian species in numbers, next only to chicken and ducks in commercial poultry production in India. Currently, Tamil Nadu is one of the leading states in commercial quail production in India. The Tamil Nadu Veterinary and Animal Sciences University, during its intensive research on Japanese quails had developed the Nandanam quail strain at its Institute of Poultry Production and Management, Madhavaram. Furthermore, the Namakkal strain of quails was developed at the Department of Poultry Science, Veterinary College and Research Institute, Namakkal. These strains have the production performance of attaining 210g of weight at 28 days of age, a feed conversion efficiency of 2.5 and livability of about 96%. Egg production is about 80% in the cage system and 70% in the deep litter system. Taking these factors into account, we designed our study by introducing Namakkal Gold quails to farmers to assess the production performance of quails in Erode district.

Materials and Methods

Erode district is a northern suburb District is lying between 10-35' and 11-60' of north latitude and 76.49' and 77.58' of East longitude and 171-91' meters above the mean sea level. The river Cauvery flows on the north and eastern part of the District. Erode town sweats under very hot spells during summer. By the end of August, the South West 51 monsoon becomes moderate and

during September there are slight and variable winds. The rivers of the district get their freshes mainly from the South-West monsoon. Temperature - maximum 39.0°C - minimum 16.3°C, The normal rainfall of the district is 717.0 mm. Straight run 350 day-old chicks of Namakkal Gold Quails were obtained from Veterinary college and Research Institute, Namakkal. On arrival, all chicks were provided electrolytes and vitamin supplements in clean drinking water and distributed to the farmers. The brooding was carried out for a period of 21 days (3 weeks) using electric bulbs as sources of heat and illumination. The quail chicks were brooded at a temperature of 35 °C with adequate water and feeding spaces provided. Light was provided for 24 hours during brooding to avoid pilling and death. The temperature was reduced gradually at the rate of 3.5°C on weekly basis as brooding progress. Standard management and healthcare practices were followed throughout the experimental period and were kept constant and ad lib drinking water and chick starter ration was provided to the chicks up to 3 weeks of age. Subsequently, the grower ration during growing periods was provided.

Growth traits

- 1. Body weight:** day old chicks live body weight were measured by using sensitive electronic scale and then at weekly intervals after wards until 6 weeks of age.
- 2. Body weight Gain :** Average daily gains (ADG) were estimated using the formula

$$\text{Body weight gain} = \frac{W_2 - W_1}{N}$$
 Where W2 is the final weight W1 is the initial weight N is the number of days taken from initial weight to the present weight.
- 3. Feed Intake:** Feed intake was recorded for the first 6 weeks. This was estimated on daily basis.
- 4. Feed Conversion Ratio:** The gain per feed intake was estimated for the first 6 weeks on weekly basis. This was estimated using the formula:

$$\text{Feed conversion ratio} = \frac{\text{Feed intake}}{\text{Weight gain}}$$

The mean and SE for various traits was calculated according to standard statistical procedures (Snedecor and Cochran, 1994).

Results and Discussion;

The mean values and their standard errors of the mean body weight, Feed intake g/day/bird and Feed conversion ratio at different ages are shown in Table -1. The results showed that the quail body weight increased as the quail advanced in ages.

Average body weight of Namakkal Gold Quails at day old, first, second, third, fourth, fifth and sixth weeks were 5.57 ±0.07, 41.38±0.30, 81.37±0.63, 139.37±0.79, 178.69±1.02, 208.15±1.37 and 235.77±1.74 g respectively. The body weight at 4 weeks and 6 weeks of age reported in this present study is comparable with the results reported by Devi et.al (2012), Karthika and Chandrasekaran (2016) and Sangilimadan et al. (2018).

In the present study Sixth week average daily feed intake of Namakkal Gold quails were higher than those of the earlier reports of Bulus et al.(2013) in broiler quails of six weeks of age and Shamna et al. (2013) in layer type quails. However, Devi et al. (2012) and Sangilimadan et al. (2018) observed higher average daily feed intake in quails at six weeks of age when compared to present study. The estimated feed conversion ratio for quails at first, second, third, fourth, fifth and sixth weeks were 1.56 ±0.04, 1.58±0.03, 1.69±0.07, 2.06±0.12, 2.66±0.09, and 3.26±0.08 g respectively. These values are agreement with the results of Sangilimadan et al. (2018) for Japanese quails maintained at instructional livestock farm complex, Veterinary College and Research Institute,Orathanadu, Thanjavur, Tamilnadu. Feed conversion ratio (FCR) depends on factors like climate and Feeding pattern used in this study.Average daily body weight gain for 2-3,3-4, 4-5 and 5-6 weeks periods similar with the results of Sangilimadan et al. (2018). The observed differences might be due to non-genetic factors applied in this study area.

Conclusion:

From the results, it could be concluded that production performance of Namakkal Gold Quails were comparable with the earlier reports on quails. The average body weight, Body weight gain, Feed conversion ratio, Feed intake are found to be similar in all field levels but mild differences between reported estimates for production performance may depend on the environmental conditions, Mangement in the study areas.

1.Means±SE values for body weight , Feed Intake and FCR of Namakkal Gold Quails at different age groups

S. No	Age (weeks)	No.of. Observations	Body weight (Grams)	Feed Intake gram/day /bird	Feed conversion Rate (FCR)
1.	Day old	290	5.57±0.07	-	-
2.	First week	290	41.38±0.30	7.96±0.0	1.56±0.04
3.	Second week	290	81.37±0.63	13.67±0.16	1.58±0.03
4.	Third week	290	139.37±0.79	18.17±0.16	1.69±0.07
5.	Fourth week	290	178.69±1.02	22.25±0.16	2.06±0.12
6.	Fifth week	290	208.15±1.37	27.10±0.20	2.66±0.09
7.	Sixth week	290	235.77±1.74	33.6±0.17	3.26±0.08

Table-2 .Means±SE values for Body weight gain (Grams) of Namakkal Gold quails in western Zone of Tamil Nadu

S.No	Age (weeks)	No.of. Observations	Body weight Gain(Grams)
1.	Day old- first week	290	40.58±0.3
2.	First-second week	290	75.46±0.61
3.	Second-third week	290	127.75±0.82
4.	Third-fourth week	290	158.78±0.98
5.	Fourth-fifth week	290	182.62±1.31
6.	Fifth-sixth week	290	206.04±1.6

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