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R Prabakaran

Officer on Special Duty,
Advanced Institute for
Integrated Research on
Livestock and Animal Sciences
(AIIRLIVAS), Government of
Tamil Nadu, India

S Ezhil Valavan

Professor, Poultry Research
Station, TANUVAS, Chennai,
Tamil Nadu, India

Production performance of guinea fowls in hilly area of Tamil Nadu, India

R Prabakaran and S Ezhil Valavan

Abstract

This study was conducted to evaluate the production performance of guinea fowls in hilly area of Tamil Nadu, India. A total of 800 day old guinea fowl keets were obtained from a private hatchery and distributed to farmers in hilly area. The cumulative body weight of guinea fowls at 4th, 8th, 12th and 16th week was 207.85±3.01, 487.52±8.52, 816.74±5.67 and 1089.47±4.14 g respectively. The overall hen day egg production and hen housed egg production in layers from 28 to 51 weeks was 49.51±1.25 and 47.38±2.45 per cent, respectively. The livability (%) upto 16th wk was 95.68. There is market among specific segment of people for guinea fowl because of its watching qualities and gamey flavor of meat. As an alternative poultry farming, guinea fowl rearing can be promoted to improve the socio-economic status of economically weaker sections of the society in the country.

Keywords: guinea fowl- body weight-feed consumption- egg production-livability

Introduction

The Guinea fowl (*Numida meleagris*) farming is not very popular in India. Guinea fowls are hardy birds and able to thrive in adverse climatic conditions (Nahashon *et al.*, 2006) [1]. Advantages of guinea fowl farming include its unique ability to scavenge for insects, less production cost, hardy nature, thermal tolerance, disease tolerance, short reproductive cycles, attractive plumages and better ability to protect itself against predators (Bonds, 1997; Dieng *et al.*, 1999; Mandal *et al.*, 1999) [2-4]. These characteristics make them immensely suitable to the rural indigenous conditions prevailing in Tamil Nadu. Poultry rearing play a important role in improving the rural economy by providing rural women and youth empowerment. Guinea fowl meat has been classed as game meat with premium quality (Schwanz, 1987; Bonkougou, 2005) [5, 6]. Many researchers interested to study the performance of guinea fowls under different climatic conditions under both traditional and intensive management conditions due to its delicacy and high nutritional value (Embury, 2001) [7]. The studies on the growth performance of guinea fowl in Tamil Nadu are very scanty. Hence, the present study was carried out to evaluate the growth performance of guinea fowl in the hilly area of Tamil Nadu, India.

Materials and methods

The study was conducted in hilly area of Tamil Nadu (Thiruvannamalai, Kolli hills), India. A total of 800 day old guinea fowl keets were obtained from a private hatchery and distributed to tribal farmers in hilly areas under a tribal welfare programme. The standard management practices were followed under the deep litter system of management with *ad libitum* feeding and water. 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 performance of guinea fowls is presented in table 1. In the present study, hatch weight of guinea fowl was recorded as 27.10±0.12 g. Kerketta *et al.* (2016) [8] recorded initial body weight of 24.80±0.36 g and 25.18±0.46 g in Pearl and Lavender variety guinea fowl. Similarly, Khairunnesa *et al.* (2016) [9] recorded initial body weight of 25.8 g. Cumulative body weights of guinea fowls at 4th, 8th, 12th and 16th week were 207.85±3.01, 487.52±8.52, 816.74±5.67 and 1089.47±4.14, respectively. Saina *et al.* (2005) [10] recorded higher body weight at 4th, 8th and 12th week of age (384.0 ± 71.6 g, 678.0 ± 73.8, 1480.2 ± 59.8g). Dahouda

Corresponding Author:**R Prabakaran**

Officer on Special Duty,
Advanced Institute for
Integrated Research on
Livestock and Animal Sciences
(AIIRLIVAS), Government of
Tamil Nadu, India

et al. (2009) [11] recorded the body weight of Pearl type guinea fowl at 10th and 20th weeks of age were 450 g and 1100 g. On the other hand, Kerketta *et al.* (2016) [8] recorded cumulative body weight of 1120.78±10.70 and 1097.88±10.99 g in Pearl and Lavender variety guinea fowl at 14th week respectively. However, Khairunnesa *et al.* (2016) [9] recorded 850 and 1495 g body weight during 12th and 16th week of age. The cumulative body weight at 24th week was about 1547.20±10.54 g in guinea fowl. The variation in the results of body weight might be due to genetic potential of the variety, managemental procedures and environment which play a major role in the growth performance of the guinea fowls.

Table 1: Production performance of Guinea fowl

Sl. No	Parameters	2019-20
1.	Hatch weight (g)	27.10±0.12
2.	4 th week body weight (g)	207.85±3.01
3.	8 th week body weight (g)	487.52±8.52
4.	12 th week body weight (g)	816.74±5.67
5.	16 th week body weight (g)	1089.47±4.14
6.	FCR at 12 th week	3.6
7.	FCR at 16 th week	4.2
8.	Livability at 16 th week	95.68
9.	Age at sexual maturity (days)	158.35±0.84
10.	24 th week body weight (g)	1547.20±10.54
11.	HDEP (28-51 weeks) (%)	49.51±1.25
12.	HHEP (28-51 weeks) (%)	47.38±2.45
13.	Annual egg Nos. (28-72 weeks)	138
14.	Egg weight (g) at 40 weeks	38.01±0.52
15.	Adult livability (20-72 weeks)	98.47±1.04
16.	Total hatchability (%)	51.87±4.38
17.	Fertile hatchability (%)	70.84±3.75
18.	Fertility	81.59±3.08

The cumulative feed conversion ratio at 12th and 16th week of guinea fowl was

3.6 and 4.2 respectively. Khairunnesa *et al.* (2016) [9] recorded better feed efficiency of 3.07 and 3.25 at 12th and 16th week of age respectively. Whereas, Kerketta *et al.* (2016) [8] recorded higher feed efficiency of 5.16±0.26 at 14th week of age in Pearl and Lavender variety guinea fowl, respectively. The average livability rate of guinea fowls at 16th week was about 95.68±1.84 per cent. Keets survival is one of the important factors for successful guinea fowl production. Khairunnesa *et al.* (2016) [9] recorded 10 % keet mortality during 12-14 days of brooding, which might be one of the major factors for higher mortality at early stage of life.

Fani *et al.* (2004) [12] suggested that problems like leg paralysis at early age which leads to keets mortality.

The overall hen day egg production and hen housed egg production in layers from 28 to 51 weeks was 49.51±1.25 and 47.38±2.45 percent respectively. Gwaza and Elkanah (2017) [13] assessed the egg production performance of French guinea fowl and found that the average egg production was about 32.7 per cent. The higher egg production might be due to genetic improvement for egg and meat production.

The annual egg production was about 138 eggs from 28 to 72 weeks of age. The average egg production per hen in the present study was lower than the range value of 170-200 eggs per hen as reported by Avornyo *et al.* (2007) [14]. The average egg produced per birds in this study is comparable with range 90- 120 eggs per annum reported by Apiiga (2007) [15]. These variations could be due to environmental effect, genetic potential and variations in the length of the production period.

It is clearly understood that longer the laying period results in increased egg production in guinea fowls.

From the present study it was found that the average egg weight was 38.01±0.52 g in guinea fowl. Khairunnesa *et al.* (2016) [9] reported that the weight of guinea fowl eggs ranges from 32 g to 42 g, while the average egg weight was 38 g. The average egg weight (53.63 ± 0.15 g) was higher than average egg weight reported for guinea fowls (Gwaza and Elkanah, 2017) [13].

The per cent hatchability and fertile hatchability were about 51.87±4.38 and 70.84±3.75 in guinea fowls, respectively. Khairunnesa *et al.* (2016) [9] found that hatchability of the eggs collected from scavenging birds and breeder stocks were found 68 % and 60 % respectively. Saina *et al.* (2005) [10] reported higher hatchability percentage of 71.2 ±14.3. The variation in hatchability might be due to the variation in hatching methods, storage and incubation and genetic variation of the birds.

From the present study, it is concluded that guinea fowls are performing well in the hilly areas of Tamil Nadu. As an alternative poultry farming, guinea fowls can be promoted widely as a new venture to provide employment opportunities to tribal and improve the socio-economic status of marginal farmers and economically weaker sections of people in hilly areas.

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