



# Growth Performance and Survivability of Srinidhi birds under Farm System of Management

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## ABSTRACT

The present study was carried out on 105d old chicks of Srinidhi breed under farm condition. The body weight was recorded at weekly interval up to 16wk of age. The mean values of body weight at 0d, 4<sup>th</sup>, 8<sup>th</sup>, 12<sup>th</sup> and 16<sup>th</sup> wk of age were estimated as  $32.72 \pm 0.59$ ,  $398.30 \pm 3.18$ ,  $1010.87 \pm 6.47$ ,  $1477.73 \pm 9.21$  and  $1994.12 \pm 10.91$ g, respectively in Srinidhi birds maintained under farm system of management. Age at first lay was found to be  $175.85 \pm 2.33$  days and average egg production up to 40wk of age was recorded as  $105.42 \pm 1.65$  eggs. Egg weight up to 40wk of age and the survivability of Srinidhi birds was recorded as  $54.40 \pm 1.22$ g and 97.15 per cent, respectively under farm system of management.

**Key Words:** Age at first laying, Body weight, Egg production, Egg weight, Survivability, Srinidhi bird.

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## INTRODUCTION

Backyard poultry are primarily reared for egg and meat production in rural areas of the country and can be advantageously promoted in rural areas. As the large commercial poultry production continues to be concentrated in urban and peri-urban locations which have proven to be powerful tool for alleviation of rural poverty, eradication of malnutrition and creation of gainful employment in vast rural areas. Srinidhi, a dual purpose chicken breed developed by the Directorate of Poultry Research, Hyderabad (Telangana) by adopting specific breeding strategies. The birds have potential to produce more eggs and meat than desi chicken. This breed has multi-colored plumage, longer shank, high general immune competence, faster growth than desi hen and more eggs which are brown in color. Body weight of a bird indicates its genetic constitution and adaptation with respect to the specific environment and measure the cumulative growth. Keeping in view, the present study was undertaken to study the growth, age at first lay, egg production and survivability of Srinidhi birds under farm system of management.

## MATERIALS AND METHODS

The study was carried out on 105 day old chicks of Srinidhi breed. The chicks were procured from Directorate of Poultry Research, Hyderabad (Telangana). After proper cleaning, disinfection and fumigation the recommended temperature and humidity were maintained for artificial brooding. Chicks were brooded under hover brooder up to 21d of age. During brooding, the chicks were provided with *ad libitum* broiler pre-starter crumbs and clean potable drinking water with 5 per cent glucose after arrival at farm. These chicks were also given Hostacycline powder @ 0.5 g per liter of water, vimeral @ 5.0 ml /100 chicks and vitamin B-complex @ 20 ml/100 chicks daily in drinking water for three days. The chicks were also vaccinated against Ranikhet and Gumboro diseases as per standard vaccination schedule. Chicks were maintained under deep litter system of management. Data on body weights from 0 to 16wk of age, age at first egg, egg production up to 40wk of age, egg weight and survivability percentage were recorded. The data were analyzed as per Snedecor and Cochran (1994).

**RESULTS AND DISCUSSION**

**Growth performance**

The body weights of Srinidhi birds recorded at weekly interval have been presented in table 1. The body weight at 0, 1<sup>st</sup>, 4<sup>th</sup>, 8<sup>th</sup>, 12<sup>th</sup> and 16<sup>th</sup> wk of age were found to be 38.72 ± 0.59, 67.21 ± 0.84, 398.30 ± 3.18, 1010.87 ± 6.47, 1477.73 ± 9.21 and 1994.12 ± 10.91g, respectively, in Srinidhi birds. The Average daily gain at 0-4, 4-8, 8-12 and 12-16 wk was estimated as 12.68 ± 0.18, 21.94 ± 0.25, 16.67 ± 0.42 and 18.44 ± 0.50 g, respectively. However, higher body weight at 4<sup>th</sup> week of age (592.40 ± 6.81 g) was reported by Rajkumar *et al* (2018) under farm condition. Lower body weight at 8<sup>th</sup> wk of age (742.13±5.86 g) was reported by Sarma *et al* (2018) and Singh *et al* (2018) in Srinidhi birds under field condition. The higher mean body weights recorded under farm condition might be attributed to the better management practices and feeding condition of the birds.

**Table 1. Body weight (g) of Srinidhi birds under farm system of management.**

Period (Week)	Body weights ± S.E. (g)
0	38.72 ± 0.59
1	67.21 ± 0.84
2	161.48 ± 1.57
3	287.97 ± 2.60
4	398.30 ± 3.18
5	507.75 ± 4.75
6	668.33 ± 5.91
7	829.91 ± 6.28
8	1010.87 ± 6.47
9	1050.21 ± 6.60
10	1219.06 ± 7.53
11	1398.76 ± 8.60
12	1477.73 ± 9.21
13	1620.30 ± 9.51
14	1698.06 ± 9.81
15	1830.15 ± 10.05
16	1994.12 ± 10.91

**Table 2. Average daily gain (g/day) in body weight of Srinidhi birds.**

Age (weeks)	Daily gain in body weights (g)
0-4	12.68 ± 0.18
4-8	21.94 ± 0.25
8-12	16.67 ± 0.42
12-16	18.44 ± 0.50

**Table 3. Production performance.**

Economic trait	Value
Age at first egg (days)	175.85 ± 2.33
Egg production no. ( up to 40 wk )	105.42 ± 1.65
Egg weight (40 wk) g	54.40 ± 1.22
Survivability (%)	97.14

**Production Performance**

The mean age at first egg was recorded 175.85 ± 2.33d in Srinidhi birds. Higher age at first egg was observed by Sarma *et al* (2018) in Srinidhi and Vanraja birds under field condition. However, lower age at first egg (150-162 d) was reported by Singh *et al* (2018) in Srinidhi birds under farm system of management. Higher age of first egg (173.00±1.35 ds) in Gramapriya and 181.53±1.29 d in Vanaraja birds were reported by Singh *et al* (2018) under field condition. The average egg production up to 40 wk of age was found to be 105.42 ± 1.65 eggs in Srinidhi birds. However, 195 eggs up to 72 wk of age were reported by Singh *et al* (2018) in Srinidhi birds under farm condition. The lower egg production (50.93±0.28) up to 40 wk of age was estimated by Sarma *et al* (2018) in traditional farming system. Similarly, the average egg weight at 40 wk of age was estimated to be 54.40 ± 1.22 g. The present study was close with those reported by Singh *et al* (2018) and Sarma *et al* (2018) in Srinidhi birds under farm and field conditions. However higher egg weight was recorded by Singh *et al* (2018) in Vanraja birds. The survivability percentage up to 40wk of age was observed as 97.15 under farm condition. Almost similar findings were reported by Zuyie *et al* (2009) under extensive system of management in Vanraja birds and

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Singh *et al* (2018) in Srinidhi birds under farm condition. These results indicated that management provided at farm condition was better than traditional farming system of management.

### CONCLUSION

The present findings showed that the Srinidhi birds performed better in terms of body weight gain, age at sexual maturity, egg production and egg weight. The bird adopted well in the local climatic conditions of Ambala District. So, farmers from rural areas of Ambala could rear the Srinidhi birds for their livelihood and nutritional security.

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