EFFECT OF SEASON ON HATCHING PERFORMANCE OF GIRIRAJA VARIETY OF CHICKEN

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ABSTRACT

The present study was taken up with the objectives of analyzing the various hatchability parameters with respect to season in Giriraja birds. A total of 962 birds were used to record the hatchability performance at different seasons in district livestock farm, Orathanadu. The total egg hatchability and fertile egg hatchability were recorded highest in March and April months but it was lower in October to December and lowest in May, June months. The early embryonic mortality, late embryonic mortality and dead in shell percentage were highest in summer months due to high environmental temperature. The study revealed that the birds performed better in egg production and hatchability in March and April months.

KEYWORDS: Giriraja, Season, Hatchability

INTRODUCTION

Giriraja is a dual purpose synthetic variety of chicken developed by the Department of Poultry Science, Veterinary College, Bangalore, India. This variety is a scavenging bird and suitable for backyard rearing under field conditions. Information on hatchability performance of Giriraja eggs are scanty. Hence the present study was conducted to analyse the hatching performance of Giriraja eggs during different seasons.

MATERIALS AND METHODS

Giriraja eggs collected from birds maintained in the District Livestock Farm, Orathanadu, Thanjavur, Tamil Nadu during different seasons were used in this study. Giriraja birds were raised under intensive system. Free mating was used in the flock and the ratio of males to females was 1:9. The managerial condition of the farm during the experimental period was uniform. The birds were offered layer mash and water *ad lib*. Eggs were collected and stored at 18°C for about 6 days and setting was done every week. The eggs were rotated at hourly intervals during the period in setter. Thereafter these eggs were transferred to the hatcher where the temperature of 98.5°F in dry bulb and relative humidity of 90°F in wet bulb were maintained. Hatching started on the day 20 and was completed by the end of 21st day. All the unhatched eggs remaining were opened to determine hatching failures. At the end of hatching process, the percentage of infertile eggs, early embryonic mortality, late embryonic mortality, dead in shell, total egg hatchability, fertile egg hatchability and fertility percentage were calculated. The egg collection, storage, fumigation and incubation were uniform.

The data generated from the experimental group was analyzed statistically as per Snedecor and Cochran, (1989).

RESULTS AND DISCUSSION

The total hatchability was higher in March and April (69.78±0.16) followed by winter (60.48±0.12) and lowest in May and June (54.17±0.11). Sreenivasaiah and Joshi (1987) also observed lowest

Table: Season wise Hatchability Performance Mean ±SE

S.N.	Parameters	March-April	May-Jun	Oct.-Nov-Dec
1	Infertility Percentage	13.00 ±0.1	15.19±0.12	15.05 ±0.14
2	Fertile egg hatchabilty Percentage	80.23±0.16	63.87±0.10	71.19±0.08
3	Total hatchability Percentage	69.78±0.16	54.17±0.11	60.48±0.12
4	Fertility Percentage	86.97±0.08	84.80±0.13	85.00±0.14
5	Early embryonic mortality Percentage	3.94±0.11	10±0.12	7.12±0.14
6	Late embryonic mortality Percentage	4.57±0.11	12±0.20	8.70±0.20
7	Dead in shell Percentage	10.75±0.15	15.12±0.20	2.60±0.20

hatchability in summer compared to other months in turkey eggs. The difference in hatchability is due to the effect of environmental change. The highest fertile egg hatchability was found in March and April (80.23±0.16) followed by 71.19±0.08 in winter season and lowest in summer (May June) (63.87±0.10). But Chowdhry *et al* (2004) reported higher hatchability in winter followed by summer and monsoon seasons. The egg fertility was observed highest in March and April (86.97±0.08) and lowest in May and June (84.80±0.13). Das and Ali (1999) reported depressed egg fertility in summer months. This might be due to increased temperature in summer months. Hossain *et al* (2002) also reported highest fertility during spring and lowest in summer in broiler parent stock. The mean ± SE of infertile egg percentage in March and April, May and June and October, November , December were 13.00±0.1, 15.19±0.12 and 15.05±0.14 respectively. It was higher in summer compared to other seasons. The early and late embryonic mortality was observed highest in May, June (10±0.12, 12±0.20) followed by October, November, December (7.12±0.14, 8.70±0.20). Singh *et al* (1983) also reported higher embryonic mortality in white leghorn and white rock breeders during summer than in winter and rainy seasons. The mean ± SE percentage of dead in shell was also higher in summer months (May, June) (15.12±0.20). Richard jagatheesan *et al* (2012) also found higher dead in shell percentage in turkeys during summer.

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