

## Short communication

### PHYSICAL QUALITY CHARACTERISTICS OF INDIGENOUS DUCK EGGS OF KERALA

Kerala is one of the few states in the Indian Union, where duck eggs fetch more price than chicken eggs. Indigenous ducks constitute 95 per cent of the total duck population in Kerala. Among these, *Chara* and *Chemballi* have been identified as distinct local varieties with good egg production potential. Farmers express satisfaction with these indigenous varieties than the exotic breeds because of their good egg size, hardness and ease of management. Basic research works to characterise these two varieties are in progress. Attempts have been made to compare the physical quality characteristics of eggs from these two varieties viz., *Chara* and *Chemballi* ducks and is reported hereunder.

A total of 150 eggs from each group of *Chara* and *Chemballi* ducks were collected over a period of seven days. The collection and evaluation of eggs were done on the same day of laying. Identical management and feeding practices were followed for both the varieties.

Eggs were weighed individually upto 0.01 g and their shape index (Shultz, 1953) was determined. Specific gravity (Bernier, 1955), albumen index (Heiman and Carver, 1936) and Yolk index (Funk, 1948) of individual eggs were determined. Haugh unit was measured directly by Haugh unit meter. Shell thickness (without membrane) was determined by shell thickness measuring gauge at three different places and average was calculated. The individual weight of

albumen, yolk and shell with membrane were recorded and expressed as percentage. Statistical analysis of data was done according to Snedecor and Cochran (1980).

The mean egg characteristics of both *Chara* and *Chemballi* are presented in Table 1. The two varieties of ducks differed significantly ( $P < 0.05$ ) in egg weight, yolk index and percentage of yolk only. The data revealed that *Chara* ducks laid significantly heavier eggs ( $69.69 \pm 0.47$  g) than *Chemballi* ( $68.08 \pm 0.45$  g). The present egg weights of indigenous ducks agree closely with the findings of George et al. (1980), who observed an average egg weight of 68.86 g for desi ducks. On the other hand, Andrews et al. (1984) and Mahanta et al. (1993) reported much lower egg weight (60.5 g) in indigenous ducks of Kerala and Assam respectively. The shape index values observed in this study for both *Chara* and *Chemballi* were statistically comparable. Eswaran et al. (1985) also observed similar shape index value (75.32) for desi ducks of Kerala. However, lower shape index values (72.99 and 72.82) were observed by George et al. (1980) and Mahanta et al. (1993) respectively. The mean specific gravity of eggs for *Chara* and *Chemballi* were  $1.096 \pm 0.002$  and  $1.093 \pm 0.002$  respectively.

In the present study a significant difference in yolk index and a non-significant difference in albumen index and Haugh unit scores were recorded between *Chara* and *Chemballi* ducks. Eswaran et al. (1985) reported lower values of 0.41, 0.108 and

**Table 1** Mean ( $\pm$  SE) physical quality and component parts of *Chara* and *Chemballi* duck eggs

Characteristics	<i>Chara</i>	<i>Chemballi</i>
Egg weight (g)	69.69 $\pm$ 0.47	68.08 $\pm$ 0.45*
Shape index	75.45 $\pm$ 0.42	75.17 $\pm$ 0.40
Specific gravity	1.096 $\pm$ 0.002	1.093 $\pm$ 0.002
Albumen index	0.118 $\pm$ 0.002	0.117 $\pm$ 0.002
Yolk index	0.451 $\pm$ 0.004	0.443 $\pm$ 0.005*
Haugh unit	91.38 $\pm$ 0.67	91.29 $\pm$ 0.65
Shell thickness (mm)	0.38 $\pm$ 0.002	0.38 $\pm$ 0.002
Shell (%)	12.16 $\pm$ 0.11	12.08 $\pm$ 0.12
Albumen (%)	58.81 $\pm$ 0.24	58.18 $\pm$ 0.19
Yolk(%)	28.65 $\pm$ 0.14	29.34 $\pm$ 0.18*

\* Significant:  $P < 0.05$

86.34 for yolk index, albumen index and Haugh unit scores respectively in desi ducks of Kerala. The mean shell thickness obtained for both varieties in this study was 0.38 mm and was similar to the finding (0.38 mm) for Eswaran et al. (1985), whereas Mahanta et al. (1993) observed a lower shell thickness value with indigenous ducks of Assam. The per cent yields of shell, albumen and yolk observed in the present trial agree fairly well with the reports of George et al. (1980), Singh et al. (1980) and Mahanta et al. (1993).

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