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REPRODUCTION PERFORMANCE OF TWO TYPES OF INDIGENOUS DUCKS OF KERALA*

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According to duck farmers in Kerala, there are two distinct types of indigenous ducks known as Chara and Chemballi based on their plumage colour. Although some efforts were made earlier (George, 1977; Andrews, 1978; Ramakrishnan *et al.*, 1982 and Eswaran, 1983) to assess the reproduction performance of indigenous ducks of Kerala, it was not based on clearly identified phenotypic groups. The present study, therefore, was undertaken to evaluate the reproductive traits in terms of age of sexual maturity of the two distinct types of duck of Kerala.

Materials and methods

Five hundred sexed day-old female ducklings each from Chara and Chemballi types were procured and were reared under deep litter system of management adhering to scientific managemental practices till 8 weeks of age. Thereafter they were reared under semi-intensive system of management. Three types of rations, namely, starter, grower and layer were provided as per levels suggested by Reddy *et al.* (1979). Feed and water were provided ad lib. throughout the experimental period.

At 18 weeks of age based on their plumage colour and body weight, 300 females from each type were retained for further studies. They were wing badged and were provided with individual nest to facilitate recording of individual performance. Each duck was put in the nest in the evening and released the next morning. Thus the individual age at first egg (AFE) of both types of ducks was recorded. The average AFE was calculated after taking all the individual records pooled together and noted separately for both the types. The age at 5, 10 and 50 per cent production was worked out for both the types based on the number of eggs obtained from each whole flock of ducks housed.

Statistical analysis of data was carried out according to Snedecor and Cochran (1980).

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Results and discussion

Information on some reproductive traits of Chara and Chemballi are presented in Table 1. The first egg from the flock of Chara and Chemballi duck was obtained on the same day ie., at 129th day of age. The average age at first egg was 148.59 and 147.50 days for Chara and Chemballi respectively. Significant differences in AFE for various breeds of ducks had been reported (Monstageer *et al.*, 1971; Sharma and Singh, 1978; Chavez and Lasmini, 1978; Ramakrishnan *et al.*, 1982; Eswaran, 1983; Sivaselvam and Prabhakaran, 1986; Tai *et al.*, 1989; Gajendran *et al.*, 1990 and Baruah *et al.*, 1991). The AFE found in the present study was comparatively earlier than the findings (134 days) of Easwaran (1983) in desi ducks of Kerala. The average AFE reported by Ramakrishnan *et al.* (1982) and Eswaran (1983) was 182 and 158 days respectively.

The average age of Chara and Chemballi at 10% production was 153 and 148 days and that at 50% production was 187 and 184 days respectively. The present finding of average age at 10% production is fairly similar with the findings of Baruah *et al.* (1991), while these values were higher than those reported by Eswaran (1983). Contrary to the present findings, Hetzel (1981) and Eswaran (1983) reported average age at 50% production more earlier in native ducks of Indonesia and Kerala respectively. Number of days required to reach 50% production from the AFE were more in Chara (58 days) and Chemballi (55 days) than those reported by Chavez and Lasmini (1978) in native ducks of Indonesia.

Table 1 Reproductive traits of Chara and Chemballi ducks

Traits	Chara (N = 300)	Chemballi (N = 300)
Age at first egg of the flock in days	129	129
Average age of flock at first egg in days	148.59	147.50
Average age of flock at 5 % production in days	144	141
Average age of flock at 10 % production in days	153	148
Average age of flock at 50 % production in days	187	184
Days to reach 50% production from the age at first egg	58	55

The frequency distribution of AFE recorded for Chara and Chemballi (Table 2) indicated that maximum number of Chara (55%) and Chemballi (65%) had their first egg within the range of 129-150 days. All birds had their first egg between 129-170 days of age. Contrary to this, Eswaran (1983) found the range of 131-200 days within which all ducks laid their first egg.

Table 2 Frequency distribution of age at first egg in days - the range and per cent among Chara and Chemballi ducks

Sl. No.	Age at first egg in days (range)	Chara		Chemballi	
		Number	%	Number	%
1	129-135	12	4.0	6	2.0
2	136-140	24	8.0	33	11.0
3	141-145	54	18.0	75	25.0
4	146-150	75	25.0	81	27.0
5	151-155	93	31.0	81	27.0
6	156-160	36	12.0	21	7.0
7	161-165	3	1.0	3	1.0
8	166-170	3	1.0	-	-
Total	129-170	300	100.0	300	100.0

On perusal of the frequency distribution table it could be seen that there were wide variation in AFE for both the types of ducks. Hence, for further improvement of AFE, heritability of the trait has to be worked out and then appropriate selection may be practised to attain an optimum range for this trait.

Summary

An experiment was carried out to evaluate the reproduction performance of two distinct indigenous types of ducks namely Chara and Chemballi of Kerala. The average AFE in Chara (148.59 days) and Chemballi (147.50) days did not differ significantly. The first egg from the above two flocks was obtained on the same day ie., at 129 days of age. In Chara ducks, the ages at 5, 10 and 50% egg production were 144, 153 and 187 days respectively. While in Chemballi, it was 141, 148 and 184 days in the above order. The frequency distribution of AFE indicated that all birds had their first egg between 129 to 170 days of age.

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