

Effects of Feeding on Semen Production in Native Cock in Bangladesh

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Abstract: To determine the effects of feeding on semen production 24 native cocks (*Gallus domesticus*) were studied under cage method in BAU poultry farm. Among 24 birds, 6 were fed once daily, 6 were fed twice daily, 6 were fed thrice daily and another 6 were fed ad libitum. Semen was collected by abdominal massage method avoiding any fear and disturbance to the birds. Experiment showed that birds fed once daily produce less amount of semen than the birds fed twice daily, semen of which also less than the birds fed thrice daily and finally the ad libitum group produce the highest amount of semen. Thus the present study revealed that semen production in native cock is positively correlated to feeding. Furthermore, semen production is also related to the age of the cocks.

Key words: Feeding, semen production, native cock

Introduction

Now a days, poultry semen is going to be more valuable to the commercial poultry farmers as well as the rural people. It is well clear to all that to increase the production of poultry, it is obligatory to use their semen properly without any wastage. As we know the use of small insemination dose (15-20 millions spermatozoa) could cover 30 to 100 females from single ejaculate in comparison to 5 to 8 females covered conventionally (Chaudhury *et al.*, 1996), there should be an increase in the semen production in poultry anyhow. Feeding can play an important role in this case. There are several literatures related to the factors affecting the volume or quantity of semen (Van Wambeke, 1976, 1984, 1996; Van Wambeke and Fujihara, 1994; Benoff *et al.*, 1981; Das, 2002) that reveals no significant information regarding the effect of feeding on semen quantity in native cock (*Gallus domesticus*) in Bangladesh. Therefore, this study has been carried out to determine the effect of feeding on semen production in native cock in Bangladesh. This study will also provide valuable information regarding feeding of poultry to the poultry researchers, immunologists and histologists.

Materials and Methods

A total of 24 native cocks of different age groups viz. 25, 40 and 55 weeks (8 cocks in each age group) were purchased from the local poultry farms. There were reared separately in individual cage with standard management in BAU poultry farm. The birds were categorized according to treatment (6 cocks in each treatment) in 4 groups as the following:

T1 = Birds fed once daily
T2 = Birds fed twice daily
T3 = Birds fed thrice daily
T4 = Birds fed ad libitum

Semen was collected weekly from each bird (4 times for each bird during the experimental tenure) at the same time of the day for 30 days and the cocks were trained daily for semen collection. Collected semen measured by micro milliter tube and analysis is done by randomized complete block design (RCBD) one factor. Duncan's multiple range test (DMRT) was done to rank the treatment groups in this experiment.

Results and Discussion

Semen of the fowl is usually collected in open vessels (Van Wambeke, 1996). As we know, both volume and concentration are dependent on breed and strain, frequency of collection, season and age of the males (Van Wambeke, 1996), there is a general feature of fertility in all poultry species, is its progressive decline with age (Brillard, 1993).

This study revealed that semen production is intimately feeding as

Table 1: Feeding performance (Mean \pm S.E.) on semen production of different age groups of native cock

Treatments	Semen collected (ml) from different age groups of cock (Mean \pm S.E.)		
	25 Weeks	40 Weeks	55 Weeks
Birds fed once a day	0.23 \pm 0.01b	0.22 \pm 0.01c	0.23 \pm 0.02d
Birds fed twice a day	0.24 \pm 0.01b	0.26 \pm 0.01b	0.29 \pm 0.02c
Birds fed thrice a day	0.32 \pm 0.01a	0.27 \pm 0.01b	0.34 \pm 0.02b
Birds fed ad libitum	0.33 \pm 0.01a	0.32 \pm 0.01a	0.39 \pm 0.02a
CV%	5.18	7.17	6.92
Level of significance	**	*	**

** = Significant at 1% level

* = Significant at 5% level

a~d = DMRT ranked order

it increases gradually from T4 to T1 (Table 1) in all replications. The volume of semen obtained in this study is nearly similar as described by Van Wambeke (1976, 1996), but in case of former experiment transparent fluid (TF) was avoided. This result is also similar to the result of Van Wambeke (1984) and Van Wambeke and Fujihara (1994). But in case of turkey the volume is somewhat less (0.3 ml) as described by Van Wambeke (1996).

Another relationship between the amount of semen production and the age of the experimental birds was also found in this experiment. Semen production gradually increases with age but it has a certain limit also. Up to complete adulthood of the birds, the semen production increases (40 weeks) but thereafter it again tends to be decreased gradually (55 weeks) (Table 1). Volume and concentration of semen depend on various factors including age of the birds, so the result of this study somewhat similar to the observations obtained by Van Wambeke (1994). Production of less amount of semen in both young and older age may be due to immaturity and over maturity of the genital organs respectively in male birds rather than mature birds.

This study leads to be concluded as:

1. Semen production of native cock (*Gallus domesticus*) is positively correlated to feeding.
2. Age of the bird is also a determining factor for the production of semen in native cock.

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