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## Effect of Frequency of Semen Collection in Dang Cocks and Betong Cocks (Thai Native Chicken)

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**ABSTRACT:** A suitable in semen collection frequency on semen quantity and quality for was carried out by using 24 males and 52-week old of Dang cock (experimental 1) and Betong cock (experimental 2) (Thai native chickens). A completely randomized design (CRD) was assigned in 4 treatments with each of 6 replications. The experimental frequencies of semen collection were collected for daily, every two, three and four days in treatment 1, 2, 3 and 4, respectively. The results showed that semen volume, density, consistency, mass activity and motility were not significantly different ( $P>0.05$ ) among treatments. It is concluded that the collection of semen of 52-week old Dang cocks and Betong cocks can be done every day and it doesn't affect the quantity and quality of semen.

**Keywords:** semen collection frequency, semen quantity, semen quality, Dang cock, Betong cock, Thai native chickens

### Introduction

The development of chicken artificial insemination technology is necessary to developing of reproductive of native chicken. Since, there is a limitation of data of research on semen production such as ability in semen production, semen quality and the ability in fertility of chicken. In Thailand artificial insemination in poultry has been developed for a long time period, but the practical skill in native chicken was limited (Lake and Stewart, 1978). In particular, a study of frequency in semen collection which plays an importance effect on semen quantity and quality in Thai native chicken. In addition, the artificial insemination has been influencing to control feeding system due to it affect on an increase a number of eggs and chicks. Thus, this research aimed to study in ability of frequency of semen collection that could affect on

both semen quantity and quality in Thai native chicken (Dang cocks and Betong cocks).

### Materials and Methods

**Experimental 1:** A study of semen collection frequency on semen quantity and quality of Dang Cocks. The experimental treatments were carried out using a completely randomized design (CRD). Twenty-four males of Dang cocks about 52 weeks of age were randomly into four treatments with each of 6 replications. The experimental frequencies of semen collection were daily (T1), every 2 days (T2), every 3 days (T3) and every 4 days (T4).

**Experimental 2:** A study of semen collection frequency on semen quantity and quality of Betong cocks. The experimental treatments were carried out using a completely randomized design (CRD). Twenty-four males of Betong cocks about 52

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The semen collection was collected by volume, density, consistency, mass activity and motility of semen at 52-60 weeks of age. An analysis of semen quantity and quality was sampling from one bird per replication based on method of Quinn and Burrows (1936). Analysis of variance of all data were analyzed using Steel and Torrie (1980) method. Duncan's multiple range test was applied to compare the means of quantity and quality. The different between treatments was considered significant at the  $P < 0.05$  level.

## Results

**Experimental 1:** The effects of semen collection frequency in Dang cocks on quantity and quality, the results showed that semen volume, density, consistency, mass activity and motility were not significant different ( $P > 0.05$ ). Frequency of semen collection did not have an effect on semen quantity which was 0.49, 0.42, 0.51 and 0.61 ml/occasion of volume in T1, T2, T3, and T4 respectively (**Table 1**). Similarly, a frequency of semen collection did not affect on semen quality (**Table 2**).

**Experimental 2:** The effects of semen collection frequency in Betong cocks on quantity and quality, the results showed that frequency of semen collection was no significant difference on semen both of semen quantity and quality in Betong cocks (**Table 1 and Table 2**).

**Table 1** The quantity of semen in Dang cocks and Betong cocks.

Treatment	Volume $\pm$ S.D. (ml/occasion)	
	Dang	Betong
T1 (daily day)	0.49 $\pm$ 0.16	0.43 $\pm$ 0.20
T2 (every 2 days)	0.42 $\pm$ 0.16	0.39 $\pm$ 0.16
T3 (every 3 days)	0.51 $\pm$ 0.10	0.45 $\pm$ 0.16
T4 (every 4 days)	0.61 $\pm$ 0.21	0.55 $\pm$ 0.24
F-test	Ns	Ns
% C.V.	17.25	43.48%

<sup>a</sup>Mean in the same column is not significant difference ( $P > 0.05$ )

**Table 2** The quality of semen in Dang cocks and Betong cocks.

Treatment	Density $\pm$ S.D. (mark/occasion)		Consistency $\pm$ S.D. (mark/occasion)		Mass activity $\pm$ S.D. (mark/occasion)		Motility $\pm$ S.D. (% /occasion)	
	Dang	Betong	Dang	Betong	Dang	Betong	Dang	Betong
T1 (daily day)	2.55 $\pm$ 0.42	2.50 $\pm$ 0.42	2.80 $\pm$ 0.45	2.50 $\pm$ 0.84	2.80 $\pm$ 0.45	2.67 $\pm$ 0.52	88.60 $\pm$ 14.42	82.67 $\pm$ 19.43
T2 (every 2 days)	2.94 $\pm$ 0.05	2.83 $\pm$ 0.23	3.00 $\pm$ 0.00	3.00 $\pm$ 0.00	3.00 $\pm$ 0.00	2.83 $\pm$ 0.41	91.12 $\pm$ 12.54	87.67 $\pm$ 14.17
T3 (every 3 days)	2.59 $\pm$ 0.31	2.50 $\pm$ 0.45	3.20 $\pm$ 0.84	2.83 $\pm$ 1.17	2.80 $\pm$ 0.45	2.50 $\pm$ 0.84	90.86 $\pm$ 10.18	82.86 $\pm$ 21.61
T4 (every 4 days)	2.68 $\pm$ 0.45	2.67 $\pm$ 0.52	3.60 $\pm$ 0.55	3.33 $\pm$ 0.82	2.80 $\pm$ 0.45	3.33 $\pm$ 0.52	84.80 $\pm$ 9.55	82.00 $\pm$ 10.95
F-test	ns	Ns	ns	ns	Ns	ns	ns	ns
% C.V.	22.81	22.81	28.24	28.24	22.16	22.16	20.37	20.37

<sup>a</sup>Mean in the same column is not significant different (P>0.05)

### Discussion

Semen quality of Thai native chicken reported in this study was not significant different (P>0.05) among treatments. The finding was consistency with Nwachukwu et. al. (2006), reported in Nigeria local chicken cock were aged between 48-50 weeks. Similar to Fan et. al. (2004) studied in Taiwan country chickens were aged between 59-63 weeks.

The result of the motility was higher than report of Blesbois *et al.* (1999), revealed 87.5 percent when semen collection frequency 3 times/week. Semen volume in semen collection frequency were not significant different (P>0.05) among treatments (Table 1). The results were higher than report of Hunton (1995), reported semen volume was 0.15-0.30 ml and report of Chotesangasa (2001) with showed a semen volume was 0.29-0.41 ml and higher than report of Bah *et al.* (2001) was 0.28 ml volume.

A 73.9 % motility and 3.2 mass activity had been reported in local breeder cock of Nigeria for a collection semen in 3 times/week. Similar to report of Taiwan country chicken with an average age 61 week old having semen volume was 0.57, 0.55, 0.72, 0.68 and motility 54.5, 69.9, 73.4 and 68.1 % with 1, 2, 3 and 6 times/week semen collection (Fan et. al., 2004).

This finding indicated that frequency of semen collection at 52-weeks of Thai native chicken could be collected by every day which did not affect on both semen quantity and quality. Progressive decline in sperm concentration with increase in frequency of ejaculation is expected as report by Santayana (1985). However, reports by Noirault and Brillard (1999) working with male turkeys showed no evidence of decrease in sperm concentration following increase in ejaculation frequency. Discrepancies in the result herein reported as compared to some previous reports are not unconnected with the kind of animal species used, the

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**Conclusions**

The collection frequency of semen had no effect on semen volume, density, consistency, mass activity and motility in Thai native chicken (Dang cock and Betong cock). At 1 year old of cock, a frequency of semen collection can be collected every day without an effect on both quantity and quality of semen.

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