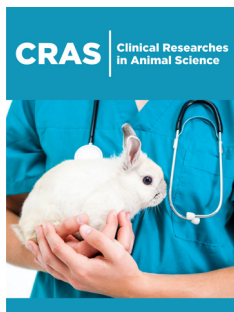


Inseminating Turkey Once in Two Weeks is Sufficient for Optimum Fertility

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Abstract

The fertility rate of the Turkey hen is deemed to be dependent on insemination interval and dosage. A pilot study was therefore conducted to determine the appropriate insemination interval requires for optimum fertility in turkey hens. Pooled semen from three (3) toms was used to inseminate ten (10) hens twice/a week, once/a week, and once/two weeks. The result revealed that once/two weeks had a comparable optimum fertility rate with twice/week. It was therefore concluded that insemination of the turkey hen once/two weeks is sufficient for optimum fertility in turkey breeding.

Introduction

Among farm animal species, poultry species are deemed to possess the extraordinary ability to reserve sperm cells in their oviduct for lengthy periods prior to oviposition and subsequent fertilization. This attribute is especially pronounced in turkey avian species. Ombelet et al. [1] reported that Artificial Insemination (AI) is a powerful and unique technique for fertilizing the females of most farm animals, including avian species. Though AI requires fresh or well-preserved semen, 95% of all AI is accomplished using preserved semen in mammals [2]. Thus, semen must be preserved in a perfect medium to maintain sperm activities till insemination [3]. However, in turkey and other economic avian species, fresh ejaculate is mostly used for their AI due to the lower or no fertility usually recorded with preserved turkey semen. Interestingly, among avian species turkey has been reported to have a unique oviduct semen retention and preservation characteristics compared to other avian species and farm animals. Thus, harnessing the frequency of insemination required for the turkey hen for optimum fertility is necessary since avian species do not exhibit estrous.

Materials and Methods

A total number of ten (10) hens and three (3) toms are used for the study. The hens and toms are trained for vulva eversion and semen ejaculation respectively for two (2) weeks. Semen collection was done according to the method of [4]. Accordingly, the toms ejaculated and pooled and the hens were inseminated twice (2) a week, once (1) a week and once (1) in two weeks with 0.05ml semen dosage. Eggs are collected and incubated for a period of twenty-eight days. Fertility and hatchability results of the incubated eggs are determined on candling day and hatching day, respectively.

Results and Discussion

Fertility and hatchability results of the turkey hen insemination at different intervals are presented in the Table 1. The result revealed that inseminating turkey poultry species once in two weeks has a close percentage fertility value of 86.84% comparable with inseminating twice in a week which had 87.5% fertility value. Though, once a week also has encouraging fertility value but wasn't comparable to that of twice a week insemination. This implies that the rates of fertilization of eggs collected for 15 days after insemination were not affected

by the frequency of insemination. Similarly, Donoghue et al. [5] confirmed that the fact that sperm numbers in excess of 50 million and less than 200 million will assure consistently high fertility levels irrespective of the frequency of insemination. Hatchability

was observed to be lower in all the groups (twice a week, once a week and once in 2weeks), this may be as a result of storage of the eggs for fourteen (14) days against seven (7) days normal hatchery routine.

Table 1: Fertility and hatchability records of hens inseminated with fresh semen at different frequencies of insemination.

Insemination Frequency	Twice a Week	Once a Week	Once in 2 Weeks
No of Eggs set	40	50	38
No of Fertile eggs	35	39	33
No of Infertile eggs	05	11	05
No of Hatched eggs	26	20	20
No of Un-hatched eggs	09	18	13
% Fertility	87.5	78.00	86.84
% Hatchability	65.00	40.00	52.63

Conclusion and Recommendation

It is therefore concluded that inseminating of the turkey hen with fresh semen once in two (2) weeks is sufficient for optimum fertility in turkey breeding. Thus, a turkey should be inseminated once in two weeks with adequate insemination dosage to ensure efficient use of the tom.

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