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Artificial Insemination (AI) by Raw Semen: its Advantages and Disadvantages in Deshi Chicken (*Gallus domesticus*)

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Abstract: To judge the advantages and disadvantages of Artificial Insemination (AI) by raw semen in deshi chicken a test experiment was conducted in Bangladesh Agricultural University (BAU) poultry farm, Mymensingh, Bangladesh. Male birds (RIR) were collected from the BAU poultry farm, whereas the female birds (deshi hens) were purchased from nearby local village market. Both types of birds were kept in individual cage with adlibitum food and water and were given abdominal massage at least for three days (at the same time of the day) prior to AI. Collected semen was inseminated (0.20-0.25 ml/hen) directly by soft dropper into the female genital tract. The result of the present experiment showed that 1-2 females could be covered by semen collected from single ejaculate from one cock. It was also found that very small amount of semen was wastage by container. Thus it can be concluded that AI by raw semen is not profitable (except experimental point of view) until we use semen diluents for commercial purpose.

Key words: Artificial insemination, raw semen, deshi chicken

Introduction

Artificial Insemination (AI) in poultry is now going to be more familiar to the poultry farmers as well as poor villagers due to its practical impact in economical point of view. It is true that its practical role till now so far from the rural investors due to lack of available technologies relevant to this. Although some authors conducted many experiments relevant to this like Barna, 1995; Chaudhuri, 1996; Surai and Wishart, 1996; Rutz and Xavier, 1998; Paul *et al*., 1999; Das, 2002 so on, but in Bangladesh condition, it should be clear whether AI by raw semen would be viable in deshi chicken or not. That is why we feel, this very small experiment would carry significant information mainly for the small farmers willing to use AI using raw semen, also for the AI specialists, poultry researchers, poultry breeders, histologists, reproductive biologists and other biotechnologists.

Materials and Methods

Male birds (RIR) were collected from the BAU poultry farm, whereas single comb deshi hens (*Gallus domesticus*) were bought from the nearby local village market of apparently good health and devoid of any external anatomical deformities. In this study raw semen was used for AI and was collected by abdominal massage method from the male birds. Both the male and female birds were given massage prior to semen collection and insemination of semen in the hen's oviduct. Small beaker was used for semen collection and a soft dropper was used to draw semen and for insemination in the female tract.

Results and Discussion

The present study revealed that 1-2 females could be covered by semen collected from single ejaculate from one cock. This result is somewhat similar as obtained by Chaudhuri, 1996. He stated that 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. He didn't stated about the other matter like container wastage. In the present study it was also found that very small amount of semen was wastage by container (beaker).

Other minor problems observed in the present study were rapid stickiness of the raw semen and dropper's wastage. Very small amount of semen was wastage due to inseminating dropper. It should be included as our constraints as our deshi chicken normally produces very small amount of semen i.e. 0.23-0.39 ml/cock/massage (Das, 2002).

Rapid stickiness of collected semen is also another problem and some times it makes the situation

impossible to collect semen by the AI dropper. Thus, in conclusion, we can state that AI by raw semen is not profitable actually except experimental point of view, but it (AI) would be economically viable if we can use semen with diluents.

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