FACTORS AFFECTING THE SEMEN QUALITY AND FERTILITY OF CHICKEN COCKEREL DURING NORTH-EAST MONSOON

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ABSTRACT

Semen evaluation of the village chicken play vital role in poultry sector and also it is directly linked with the production performance of the village chicken. A semen quality was determined by volume, concentration, viability (dead cells and live cells), motility fertility, hatchability and post hatchability performance in chickens. These parameters were influenced by age of the birds, environmental conditions, nutrition factors and genetic factors. Therefore, this study was formulated on village chicken to study the impacts of different age levels on semen volume, semen concentration, motility, viability, hatchability and some of other factors of the birds. Study was conducted in Central Poultry Research Station, located in Karandagolla in the Kandy District. Experiment was carried out using three treatments with different age groups of cockerels and hens and each contained three replicates. Processing and evaluation of the collected semen were conducted using ejaculation tubes to measure concentration (equipment), viability (equipment) and motility (equipment). Semen parameters was statically analyzed using a one way ANOVA design.

In this study, there were no significant difference on semen volume and semen concentration. Semen volume value ranged between 1.13*ml*-1.27*ml* and semen concentration value ranged between 0.16 (10^{-6}/ml) - 0.27 (10^{-6}/ml). There were significant difference on live cells and dead cells count of the semen. The highest value [6.33±1.33 (10^{-6}/ml)] shows by age of 48 weeks birds and lower value [4.00±0.57 (10^{-6}/ml)] shows by age of 72 weeks birds. The egg weight of the birds were not showed significant difference and egg weight ranged between 50.00g - 52.50g. Number of chicks in different age groups of birds not showed significant difference between 24 weeks and 48 weeks age

groups but 72 weeks age group was showed higher significant difference than other age groups. In hatchability, only significant difference showed by batch number 1 at age of 24 weeks and batch number 2 at age of 72 weeks of the birds. It was ranged between 82% - 100%. Batch number 4 shows significant difference on post hatchability performance. Thus other batches with difference age groups were not showed significant difference. Fertility of eggs were showed significant difference on batch number 1, 2, and 3 may be due to age of the birds was affected to the fertility of eggs. The results of motility revealed that there were difference activity on sperm of village chickens. Therefore age of 24 weeks showed non progressively motile action while age of 48 weeks and 72 weeks showed progressively motile action. This may be due to effect of aging of the birds. According to research findings, the effects of environmental factors to the semen volume may be affected by temperature, rainfall and humidity at the difference age groups of the birds. But there were no effect of environmental factors to the semen volume during this study due to less fluctuation of environmental factors and higher tolerance of the birds to the environmental factors.

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