

SYNCHRONIZATION OF ESTROUS CYCLE WITH VAGINAL SPONGES IN BARBARY BREED OF EWES

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ABSTRACT

A total of one hundred Barbary Libyan ewes were selected and were divided as Group T and C (n= 50). The ewes in group T were inserted with intravaginal sponges of progesterone for 12 days. At the time of removal of sponges; 500 IU of eCG was injected intramuscularly. The ewes were mated with fertile rams after twelve hours of removal of vaginal sponges. Significantly higher lambing rate was recorded in treatment group (90 %) of ewes than the control group of ewes (78 %). Likewise the twinning rate was significantly higher in the treatment group (44.4 %) than the control group of ewes (20.5).

Key words : Oestrus synchronization, vaginal sponges, Barbary ewes.

INTRODUCTION

Sheep are polyestrous animals depend on season in terms of features of breeding. The estrous synchronization in Libyan sheep is limited and meager experimental studies were conducted. The eCG is routinely incorporated with intravaginal device synchronization systems in ewes to enhance fertility (Hafez 1993, Simonetti *et al.*, 1999, Wildeus, 2000, Alkass *et al*, 2003 and Huseyin and Hamit, 2005). Various studies have evaluated different dose levels of eCG and gonadotropins (Wildeus, 2000, Alkass *et al*, 2003 and; Huseyin and Hamit, 2005). The dose of eCG reported to achieve optimum fertility and prolificacy was ranged between 450 – 600 I.U (Wildeus, 2000). There are no trials conducted using such treatment for Barbary Libyan ewes in Libya. Hence, the present study was conducted.

MATERIALS AND METHODS

A total of 100 Barbary Libyan ewes aged 2-5 years were selected for the study. The studies were conducted during the year 2006 in Garabolly area of Tripoli, Libya. All the ewes were kept under

the similar managemental conditions under semi intensive system. The ewes were fed daily with 1 kg concentrated feed and 0.5 kg hay three weeks before mating besides grazing outside during the day light.

The ewes were divided randomly into two groups consisting of 50 ewes in each group i.e. the treated group (T) and control group (C). The estrus in treated group was synchronized by using intravaginal sponge impregnated with progesterone (40 mg/sponge, Chronogest, Intervet, Netherlands) for 12 days. After removal of sponges, 500 IU of eCG were injected intramuscularly, while the Control group did not receive any treatment. Twelve hours after the removal of sponges, the ewes were allowed to mate with fertile rams.

The efficacy of treatment was expressed in terms of lambing rate, litter size and percentage of twins. The data was subjected to statistical analysis.

RESULTS AND DISCUSSION

The lambing rate in treatment and control group of ewes were 90 and 70%, respectively. The treatment with eCG caused significant ($P < 0.05$)

increase in the lambing rate in the treated group compared with the control group. The percentage of single, twins and triplets in treatment vs. control were 55.6 vs. 79.5; 44.0 vs. 20.5 and 4.4 vs. 0.0, respectively in the present study. There was significant difference ($P < 0.05$) in the percentage of twins between the treated and control group of ewes. There was significant ($p < 0.01$) difference between the groups in the mean litter size which was 1.49 ± 0.088 in the treated group and 1.18 ± 0.059 in the control group.

The significant increase in twinning percentage or lambing rate in the present study is in agreement with the findings of other

workers who also used eCG in different breeds of sheep to synchronise estrous cycle (Madani *et al.*, 1984; Boscos *et al.*, 2002; Alkass *et al.*, 2003; Zeleke *et al.*, 2005; and Huseyin and Hamit, 2005). It was reported that the administration of eCG enhanced the follicular development, hence the twinning and triplet's rate and the mean litter size were increased (Hafez, 1993, Wildeus, 2000 and; Huseyin and Hamit, 2005).

In conclusion, synchronization of estrus in combination with administration of eCG in Barbary Libyan ewes was effective protocol in increasing lambing rate, litter size and twinning percentage.

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