

## **RESPONSE OF BARKI EWES TO TREATMENT WITH GONADOTROPHIN HORMONES AND ENERGY SUPPLEMENTATION (FLUSHING)**

**A.A. ABU EL-ELLA**

*Animal Production Research Institute, Ministry of Agriculture, Dokki, Giza,  
Egypt*

### **SUMMARY**

Thirty six of Barki ewes (2.5 - 4 years of age) with a live body weight of 40-50 kg were used to determine the influence of PG-600 (a combination of pregnant mare's serum gonadotrophins and human chorionic gonadotropin) and (or) energy supplementation (flushing) on estrous activity, ovarian activity, reproductive performance and progesterone concentration. Ewes were randomly assigned to four groups (9 in each): T1 untreated control: Ration supplying 100% of ewes energy requirements (60 %) from concentrate feed mixture (CFM) + (40%) from berssem hay, T2: Flushing (for 9 days before ram introduction for mating), cover 110% of ewe's energy requirements (60 %) from yellow corn meal + (40%) from berssem hay, T3: single 5-ml intramuscular injection of PG-600 (It contains 400 IU of pregnant mare serum gonadotropin and 200 IU of human chorionic gonadotropin) were applied on the evening of the ninth day before introduction of ram to ewes and T4: as T2 + single 5-ml intramuscular injection of PG-600 immediately after the last feeding of T2. The ninth day all ewes were exposed till 35 days to fertile ram. Ewes were observed three times daily for signs of behavioural estrus. The nutritional requirements for the ewes were calculated according to the NRC (1989).

The percentage of estrus exhibition in group T4 reached 88.89 %, while the lowest percentage (55.56 %) was observed in T3 and T1. The duration of estrus in ewes of T3 was Longer (44.00 hr) than in T1 and T4 (32.00 and 40.00 hr), while it was the shortest in T2 (24.00 hr). The interval from treatment to the onset of estrus (time of estrus) was significantly ( $P<0.05$ ) shorter in ewes in group 3 and for ewes in group 4 than those in group 2 and control group. The non-return to estrus was significantly higher in T4 and T1 followed T3 then those in T2.

The total number of ovarian cycle and number of estrous ovulatory cycles were significantly ( $P<0.05$ ) higher for ewes in T4 and T2 alone. The number of anoestrus ovulatory cycles / ewe was significantly ( $P<0.05$ ) decrease for ewes in T3 as compared to the other groups.

The pregnancy rate was significantly ( $P<0.05$ ) higher for ewes in T4 compared with that in the other groups. The interval from ram exposure to lambing was decreased ( $P<0.05$ ) for ewes in T4 by increasing the proportion of fertile matings. Gestation length was significantly ( $P<0.05$ ) shorter for ewes in T3 and T4 as compared with T2 or T1 groups. The ewes in T4 yielded higher ( $P<0.05$ ) percentage of lambing (122.22%) than ewes in T3 (88.89%) and T2 alone (77.78%). Number of lamb born was significantly ( $P<0.05$ ) higher for ewes in T4

and T3. The percentage of ewes lambing twins was higher for ewes in T4 (83.3 %) and T3 (60%) than T2 (40 %), while control ewes gave single lambing.

At pre-estrus period, progesterone (P4) concentration in blood plasma was significantly ( $P<0.05$ ) higher for ewes in T3 followed by those in T2 compared with that ewes in T4 and T1 groups. At 4 and 8 days post mating, P4 concentration was higher for ewes in T4 than that in ewes of the other groups.

From the present study, it could be concluded that using by flushing + injection with PG-600 in Barki ewe, increase the percentage of ewes in estrus, improved lambing rate and increased multiple births.

**Keywords:** *Sheep, ewes, gonadotrophins, flushing, estrous activity, ovarian activity, reproductive performance, progesterone concentration.*