

EFFECT OF VITAMIN E AND SELENIUM ON SOME PHYSIOLOGICAL AND REPRODUCTIVE CHARACTERISTICS OF SOHAGI EWES

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ABSTRACT

Forty-two Sohagi ewes averaged 33.86 ± 3.00 kg and 2-2.5 years old used to evaluate the effect of vitamin E plus selenium (Se) on some physiological and reproductive performances. The ewes randomly divided into three equal groups (14 ewes each). The first group (G1) injected intramuscularly with 1.0 ml/10kg body weight (BW) of saline solution (0.9 % NaCl) and served as control, while the second and third groups (G2 & G3) injected with 0.5 and 0.75 ml/10 kg BW viteselen (vitamin E plus Se), respectively. The ewes injected with viteselen biweekly for eight weeks (4 weeks before mating and 4 weeks after mating).

Digestibility coefficients and nutrient values were determined after the second injection and before mating during the study. Estrus synchronized by sponges impregnated with progesterone. Blood samples collected biweekly for determination of hematological concentration (RBC, WBC, Hb, PCV, MCH, WBC differentiation). Serum separated for determination of metabolites concentrations (Total protein, albumin, globulin and urea, creatinine, glucose, cholesterol, AST, ALT) and hormonal concentrations (Triiodothyronine, thyroxin, and progesterone). All animals checked for the onset of estrus two times daily using intact ram. Reproductive measures including estrus response, pregnancy and lambing rates were recorded. Also, the number of lambs' frequency of single, twin and mortality rate were recorded among groups. Birth weight of lambs were recorded.

The results showed that body weight gain of treated ewes (G2 & G3) and birth weight of their lambs were higher ($P < 0.05$) than those of control group (G1). Digestibility coefficients and nutritive values not changed due to vitamin E plus Se treatment. Blood hemoglobin concentrations increased ($P < 0.05$) in G2 and G3 treated groups. The total leucocytes count and lymphocytes percentages increased ($P < 0.05$) in treated groups (G2 & G3). Serum metabolites concentrations also not changed due to vitamin E plus Se treatment. Progesterone concentration insignificantly increased in treated groups after mating. Reproductive measures were improved in vitamin E plus Se treated groups. These results indicated that injection of vitamin E plus Se to ewes for 4 weeks prior mating and 4 weeks after mating improved birth weight, reproductive performance and some immune responses as a result of favorable signs in their physiological reactions.

Key Words: *Vitamin E plus selenium, ewes, reproductive and physiological characteristics*