

EFFECT OF SELENIUM AND VITAMIN E SUPPLEMENT ON SEXUAL DESIRE, SEMEN PHYSICAL PROPERTIES, ACROSOME INTEGRITY AND FERTILITY OF BUFFALO BULLS

H.Abdel Rahman¹, Asmaa, F.Shehata¹, A.F.Nebar¹, H. M. Youssef², M.A.Abd El-Latif²

¹Animal Production Department, Faculty of Agriculture, Minufiya University, Shibin El-kom, ²Animal Production Research Center, Ministry of Agriculture, El-Gemmiza, Egypt.

ABSTRACT

Fifteen adult buffalo bulls , 3-5 years old and 400-500 kg live body wt, were selected at random, managed alike and fed a concentrate feed mixture plus rice straw over a 15-wk experimental period. Bulls were allotted into 3 comparable groups (G₁, G₂ and G₃) and left untreated for 8 wks to serve as a control period (P_C) for each group. Each bull received 3 doses with 1 wk apart, of 30 mg selenium (Se)/ head as sodium selenite injected s.c (G₁), 300 I.U. vitamin E (VE)/head as α tocopherol acetate drenched (G₂), whereas G₃ received both Se and VE as G₁ and G₂ . Sexual desire was measured as the reaction time (RT). Testicular volume, tone firmer score and circumference were recorded every wk during P_C and at weekly intervals for 4 wks after stopping treatments (P_T). Semen was collected twice a wk during P_C and P_T. Physical properties of semen and acrosome integrity were determined. Bull fertility was determined as conception rate using 90 healthy fertile females (24, 23, 22 and 21 served with untreated bulls during P_C and G₁, G₂ and G₃ bulls during P_T, respectively.

Significant differences were detected in RT, testicular volume, testis tone firmer score, acrosome integrity, sperm concentration, abnormality, viability and motility, $P < 0.01$, scrotal circumference, $P < 0.05$, between P_C and P_T, in RT among groups during P_T, viability, abnormality acrosome integrity, ($P < 0.01$), motility and concentration ($P < 0.05$) between the 1st and 2nd ejaculates. Interactions among periods, groups and ejaculate sequence were insignificant. All treatments improved RT at the 1st wk of P_T. It continued thereafter, in Se and VE treated groups up to the 3rd wk , $P < 0.01$, but did not in Se+VE treated group. Treatment with VE either alone or combined with Se increased ejaculate volume by 10.0 and 7.6%, while Se treatment decreased it by 12.2%. Selenium, VE and Se+VE treatments increased testicular volume by 65.7%, 32.9% and 12.8%; testis tone firmer score by 48.9, 17.5 and 8.9%; sperm concentration by 35.1, 23.5 and 10.3%; output/ejaculate by 20.7, 38.2 and 18.9%; motility by 33.1, 30.8 and 8.5%; viability by 15.9, 25.8 and 5.5% and it decreased abnormality by 12.2, 24.9 and 0.6% , respectively. Acrosome integrity was improved by given Se alone or with VE by 5.0 and 8.0%, while VE alone depressed it by 24.8%. Scrotal circumference, varied from 28.0 to 31.0 cm during P_C and 30.3 to 31.1 cm during P_T. Treatment with VE increased more effectively scrotal circumference. Conception rate was 41.7% during P_C versus 65.2, 54.5 and 57.1% in G₁, G₂ and G₃, respectively, which means that all treatments improved bull fertility but differences among treatments were insignificant.

Keywords: Selenium, Vitamin E, buffalo semen.