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

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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 (PC) 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 PC and at weekly intervals for 4 wks after stopping treatments (PT). Semen was collected twice a wk during PC and PT.

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 PC and G1, G2 and G3 bulls during PT, 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 PC and PT, in RT among groups during PT, 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 PT. 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 PC and 30.3 to 31.1 cm during PT. Treatment with VE increased more effectively scrotal circumference. Conception rate was 41.7% during PC 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.