EFFECT OF ORGANIC ZINC SUPPLEMENTATION IN THE RATION ON SEXUAL BEHAVIOUR AND SEMEN QUALITY OF GIR BULLS

ABSTRACT

Key words: Gir bulls, Sexual behaviour, Semen quality, Zinc propionate.

The present investigation on “Effect of organic zinc supplementation in the ration on sexual behavior and semen quality of Gir bulls” was carried out at the Cattle Breeding Farm and Department of Animal Nutrition, College of Veterinary Science and Animal Husbandry, Junagadh Agricultural University, Junagadh for period of five months from November, 2016 – March, 2017.

The objective of present study was to study the effect of zinc supplementation (Zn propionate) on sexual behaviour and semen quality of Gir bulls. Eight apparently healthy and sexually mature and clinically normal Gir bulls of age group (nearly 3.0 to 6.5 years) were supplemented with Zn Propionate at the rate 40 ppm per animal for a period of 50 days to complete one spermatogenic cycle.

A total 64 collections eight from each before and after preliminary period of Zn propionate supplementation. Zn content in feeds and fodder was analyzed using wet digestion technique and reading Zn concentration in spectrophotometer. Ration (ICAR, 2010) during both the periods was same except that the 40 ppm Zn propionate per animal was supplied to bulls in preliminary period of 50 days. Zinc was weighed and mixed with jaggery for feeding. The feed and nutrient intake, body weight, biometry and sexual behaviour of individual bulls were recorded. Besides biometry of these animals, scrotal measurement was also estimated twice, i.e. once at the beginning of the experiment and second at the end of second phase of experiment. Semen was collected early in morning and evaluated for quantitative (ejaculate volume, sperm concentration) and qualitative characteristics (semen pH, mass motility, individual motility, live sperm and abnormal sperm percent).

Experimental bulls gained 8.00% of body weight due to supplementation of zinc propionate which was significant. Biometry (Heart girth p<0.01), (Body length p<0.02), (Height p<0.05) also significant change in post supplementation phase. Dry matter intake (kg/day, kg/100 kg BW, kg/W^{0.75}) was at par in post supplementation phase. Scrotal measurements also significantly increased in second phase of experiments. Changes in body weight and biometry might be due to growing phase of four of the experimental bulls.

Mean ejaculate volume (ml) was significantly (p<0.001) higher semen volume during Zn-supplemented period as compared to the non supplemented period.
Similarly, sperm concentration (millions/ml), live sperm (%) and motility (%) were significantly (p<0.001) higher during Zn-supplemented period as compared to control. The decrease abnormal sperm % in neat and thawed semen was significant (p<0.001) during post supplementation period. The results of sexual behaviour, libido and mating ability revealed a significant (p<0.01) improvement in all the bulls supplemented with Zn as compared to the control period. It may be concluded that Zn supplementation in organic form in the diet of Gir bulls at 40 ppm of diet improved the qualitative and quantitative attributes of semen.