Animal Reproduction

ABSTRACTS: 34TH ANNUAL MEETING OF THE BRAZILIAN EMBRYO TECHNOLOGY SOCIETY (SBTE)

AI and IATF

Mineral supplementation with beta-carotene and vitamins and their effect on reproductive performance in TAI beef cows kept on pasture conditions

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The objective was to evaluate the effect of mineral supplementation with the addition of beta-carotene and vitamins (A, D, E and biotin) on the conception rate of the 1st TAI in grazing Nellore cows (*Bos indicus*).A total of 497 multiparous cows (5.68±0.11 parities) were homogeneously divided in 4 paddocks (*Brachiaria brizantha* spp) according to the body condition score (BCS=2.8 ±0.01;P<0001) and calving period [births at the beginning of the experimental period (BB; from September 15th to October 15th) and end of the experimental period (BE; from October 16th to October 31st)] in two experimental groups: Control (mineral supplementation; Fosbovi® Reprodução; n=251) and Vitamins (control+150mg beta-carotene+40.000IU Vit.A+5.000IUVit.D3+300mg Vit.E+20mg biotin/animal/day; n=246). Supplementation started 30 days before the 1st TAI and ended 30 days later, totaling 60 days of treatment, and was provided by DSM Produtos Nutritional Brazil S.A. Cows were synchronized with a P4/E2-based TAI protocol. Animals were rotated among paddocks every three days to avoid the pasture effect on the results.At the pregnancy diagnosis (30th and 77th days of gestation) the size of the fetus was also measured using the distances from the crown-rump and the thoracic diameter. Data were analyzed using the GLIMMIX procedure of SAS and the value P<0.05 was considered for effect and trend when P>0.05 and P<0.10. The fixed factor was the treatment, the random ones were calving period, farm, inseminator and bull. The Tukey test was used. The conception rate at the 1st TAI showed an increasing trend (P=0.08) for the vitamins group [control:56.6%(142/251) vs. treated:64.2%(158/246)].For estrus manifestation rate, there was an interaction between calving period*treatment (P=0.04), with vitamins increasing estrus detection in BB period. FD was influenced by the calving season (P<0001), with largest diameters in the BE period, with no treatment effect (P=0.14).Vitamins group presented the largest embryo crown-rump (P=0.002) and thoracic diameter (P<0001) lengths at 30th day of gestation. In addition, there was interaction between calving period*treatment for crown-rump length at 77th day of gestation (P=0.02), with embryos from vitamins group presenting longer length in BE period. When analyzed by repeated measure in time, the crown-rump length of the fetus at 30th and 77th days of gestation showed an interaction treatment*time*calving period (P=0.0010), however, this interaction was not observed for thoracic diameter (P=0.09).The BCS at TAI moment and at first pregnancy diagnosis was increased (P<0001) for the vitamins group, regardless of the calving period. Animals that gained BCS had a higher conception rate at the 1st TAI than animals that maintained or lost BCS (P=0.0042).The data from the present experiment support that treatment with beta-carotene and vitamins increases the conception rate of the 1st TAI, the development of the conceptus and the BCS of cows.