

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

TRACE MINERALS INJECTION AT BIRTH ON ANTIOXIDANT ACTIVITY AND IMMUNOLOGICAL SYSTEM OF BOER KIDS IN THE PREWEANING PERIOD

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The use of trace minerals injection (TMI), containing Cu, Se, Mn and Zn, was shown to be efficient in increasing the control of oxidative stress and improving the immune system of calves, but this evaluation was not found in kids. The objective of this study was to evaluate the effect of TMI at birth on the antioxidant activity and immune system of Boer kids in the preweaning period. A total of 24 kids (12 males and 12 females) with initial body weight (BW) of 6.61 ± 1.82 kg with 0 to 10 days (d) of life were used. These were confined for 56 d in six pens along with the mother goats and divided by type of parturition, sex, BW and submitted to two treatments: Saline, saline injection (0.1 mL/4.5 kg of BW); TMI, trace minerals injection (0.1 mL/4.5 kg of BW); The TMI had 15 mg of Copper/mL, 60 mg of Zinc/mL, 10 mg of Manganese/mL, and 5 mg of Selenium/mL. Blood samples were collected at d 0, 3, 7, 14, 28 and 56 for haematological analyzes and concentration of the enzymes superoxide dismutase (SOD) and glutathione peroxidase (GSH-Px). The experimental design was randomized blocks and the data were analyzed by the MIXED procedure of SAS. The statistical models contained as a fixed effect treatment, day, sex, and interactions and as a random variable animal (treatment \times sex) and animal (pen). Means were separated by pdiff function. TMI showed a tendency to increase ($P < 0.10$) the concentration of SOD in d 7, and increased ($P < 0.05$) the concentration of GSH-Px in d 3 and 7 in relation to Saline. For the amount of leukocytes, neutrophils, lymphocytes and monocytes there was no effect of treatment or treatment \times day ($P > 0.05$). For the amount of eosinophils, there was a treatment effect ($P < 0.05$), with a higher concentration for TMI compared to Saline, and there was no effect of treatment \times day ($P > 0.05$). For the amount of erythrocytes, hemoglobin, hematocrit, mean corpuscular volume (MCV), and mean corpuscular hemoglobin concentration (MCHC), there was no effect of treatment and treatment \times day ($P > 0.05$). The TMI decreased the mean corpuscular hemoglobin (MCH) in d 3 ($P < 0.05$) and increased that of platelets in d 7 ($P < 0.05$) relative to Saline. Thus the TMI in newborn kids increases the control of oxidative stress, platelets, and improves the immune system of goats in the preweaning period.

Keywords: goats, glutathione peroxidase, hemogram, platelets, superoxide dismutase

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