EVALUATION OF AN INJECTABLE MINERAL SUPPLEMENT ON WEIGHT GAIN IN WEANED CALVES

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Background and Objective

Weaning and management changes represent periods of high stress in cattle production, often resulting in a reduction in daily weight gain. Parenteral administration of macro and micro minerals ensures the complete bioavailability, meeting the high metabolic demand during critical periods. This study aimed to assess the impact of supplementation with the injectable mineral product on the daily weight gain (DWG) of weaned calves, comparing it against an untreated control group.

Materials and Methods

One hundred and eighty female weaned calves of British breeds (6 to 8 months old) were selected and systematically randomized into two groups of 90 animals each: Control (sterile saline solution) and Treated (Fosfosan, Virbac Uruguay S.A., a multimineral supplement containing phosphorus, selenium, copper, potassium, and magnesium). Both groups received two 10 mL subcutaneous doses 29 days apart (D0 and D29). The animals were maintained under the same management and feeding conditions (pastures of Avena and Festuca) for the 88 days of the trial. Body weight was recorded on days 0, 29, 53, and 88 and average daily weight gain (ADWG) was calculated. Statistical comparisons were performed using the non-parametric Mann-Whitney test, analyzing data within the 10th–90th percentile.

Results

At the start of the study, the average weight was similar between the groups (Control: 163 kg; Treated: 164 kg). The Treated group demonstrated a significantly higher ADWG compared to the control group at both day 53 ($p=0.020$) and day 88 ($p=0.027$). The higher difference in ADWG was recorded at day 53, 48 g/day greater than the control group. By the study's conclusion (D88), the Treated group's ADWG was 351.3 ± 96.6 g/day, which was 36.3 g/day greater than the control group's ADWG (315.1 ± 105.0 g/day). The total weight gain was 31 kg for the Treated group and 27 kg for the Control group; this difference resulted in an additional 4 kg of cumulative live weight gain per animal throughout the trial period.

Conclusions

The administration of Fosfosan was linked to an improvement in the ADWG of weaned female calves. These findings suggest that injectable mineral supplementation during stressful periods, such as weaning, provides a direct positive biological and economic benefit for beef production systems.