Comparison of Different Feed Additives for Backgrounding of Weaned Beef Calves

A Imler[1], M. Hersom[1], T. Thrift[1], J. Yelich[1], J. Arthington[2]

[1]Department of Animal Sciences, University of Florida, Gainesville, FL
[2]Range Cattle Research and Education Center. University of Florida, Ona, FL

The use of feed additives in supplements is one means to positively affect the health status of newly-weaned calves during backgrounding. Our objective was to evaluate the response of weaned calves to different feed additives in a supplement (CP = 14.6%, TDN = 67%) to improve calf performance and mitigate the stress response observed during the weaning and backgrounding period. Following stratification by body weight, calf-gender, previous castration status, and breed, 160 calves (448 $\pm$ 5 lb) were randomly allotted to 1 of 4 treatments (n = 40 calves/treatment): 1) control (CON) were supplemented without additives; 2) supplement with added chlortetracycline, 350 g/d (CTC); 3) supplement with added Rumensin, 175 mg/d (RUM); 4) supplement with added Actigen®, 5 (ACT). Calves were held in 1 of 4 drylot treatment pens (n = 40 calves/pen) for 1 wk and offered ad libitum access to hay and 4.0 lb of supplement prior to placement in 1 of 32 two-ac pens (5 calves/pen) for a total of 8 pens/treatment. Calves had bodyweight and blood samples collected on day 0, 1, 4, 7, 11, 14, 51 and 52. Data were analyzed by the MIXED procedure of SAS. The model included the main effects of treatment. All variables quantified by day were analyzed using repeated measures. Over the 52-d period, ACT resulted in the greatest (P = 0.002, 0.72 lb/day) gain response. CTC calves exhibited similar (P = 0.35) gains to ACT, which were both greater ($P \leq 0.005$) than RUM (0.50 lb/day). CON calves were similar ($P \geq 0.13$) to both medicated treatments, but did not gain more (P = 0.02) than ACT. Plasma concentrations of haptoglobin and ceruloplasmin were similar ($P \geq 0.70$) among treatments; however, a day effect ($P \leq 0.0001$) was observed in both acute phase proteins measured. Feed cost of gain was not significantly different (P = 0.19, mean = \$1.33/lb) among treatments. Profitability for ACT and CTC were similar (P = 0.16, mean = \$24.15/calf) and more (P = 0.002) profitable than RUM (\$ -3.47/calf), CON was intermediate. ACT may improve calf performance as effectively as CTC during a backgrounding period of this duration, but neither additive was effective at mediating stress post-weaning.