



SOUTH DAKOTA
STATE UNIVERSITY

Department of Animal Science

Beef Day 2020

Feedlot

Effects of increasing doses of trenbolone acetate and estradiol on sera metabolites following implantation during the finishing phase in beef steers

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Objective

To determine the effects of increasing doses of trenbolone acetate and estradiol on sera metabolite responses following implantation during the finishing phase in beef steers.

Study Description

Continental × English crossbred beef steers ($n = 240$; allotment BW = 805 lbs [SD 49.6]) were used in a randomized complete block design feedlot study to evaluate the effects that increasing doses of trenbolone acetate (TBA) and estradiol-17 β (E_2) have on sera urea-N (SUN) and sera insulin-like growth factor I (IGF-I). Steers were allotted to 30 pens ($n = 8$ steers/pen) at the Ruminant Nutrition Center in Brookings, SD; and were then assigned to 1 of 3 treatments: 1) No implant (NI), 2) Synovex Choice [100 mg TBA + ~10 mg E_2 ; CH], or 3) Synovex Plus [200 mg TBA + ~20 mg E_2 ; PL] administered 124 days before harvest. This study was part of a factorial experiment that included bedding application. No interactions were detected ($P \geq 0.26$). Blood samples were collected during the weighing process prior to feeding on d 1, 28, 56, and 84 relative to implantation from sentinel steers ($n = 2$ steers/pen) and were subsequently harvested as sera, pen served as the experimental unit.

Take home points:

An implant × day interaction ($P = 0.05$) was noted for SUN. On d 28, NI cattle had greater SUN ($P = 0.05$) compared to PL, CH was intermediate and did not differ ($P > 0.10$) from NI and PL. No implant × day interaction ($P = 0.52$) was detected for sera IGF-I. However, sera IGF-I was increased ($P = 0.01$) by 14.7% and 18.7% for CH and PL, respectively, compared to NI. Sera IGF-I also increased as days on feed increased ($P = 0.01$). Use of TBA and E_2 resulted in increased tissue growth as indicated by a reduction in SUN 28 d after implantation and increased sera IGF-I compared to NI steers.

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