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-17β (E₂) 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 E₂; CH], or 3) Synovex Plus [200 mg TBA + ~20 mg E₂; PL] administered 124 days before harvest. This study was part of a factorial experiment that included bedding application. No interactions were detected (P ≥ 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 E₂ 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.

Acknowledgements
This research was sponsored in part by the National Institute of Food and Agriculture and the South Dakota State University Agricultural Experiment Station (HATCH- SD00H690-19).

Keywords: estradiol, IGF-1, sera, steers, trenbolone acetate