

The effect of days on feed and trenbolone acetate + estradiol-17β implantation on biometric measurements of Charolais × Angus steers across serial harvest endpoints

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Materials and Methods

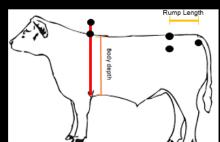
- A serial harvest study evaluated days on feed (DOF) and trenbolone acetate + estradiol-17β administration on biometric measurements.
- Charolais x Angus steers $\{n = 80: \text{ start }\}$ of trial body weight (BW) (271 ± 99 kg)} were randomly allocated to implant treatment and harvest date.
- Steers were paired to minimize variation in genetic group, initial BW, frame score, and adjusted final BW. Within each pair, a steer was randomly allocated to one of two treatments (TRT); implanted with Revalor-XS (REV) on d 0 and d 190 or non-implanted control (CON).
- Eight steers (4 pairs) were randomly assigned to harvest dates at d 0, 42, 84, 126, 168, 210, 252, 294, 336, and 378 DOF.
- At each harvest date, all steers were measured for hip height, rump length, hip width, shoulder height, 2/3 body length, body depth, and body width.
- Balanced incomplete block design; 2 x 10 factorial treatment structure.
- Biometric measurement variables were analyzed via the GLIMMIX procedure of SAS to test the fixed effects of DOF and TRT. A repeated measures design was used with DOF as the repeated measure by animal.

Introduction

- The growth curve of beef producing animals can be generally described as size-age curves.
- · Biometric measurements have been used to compare or predict variables such as carcass characteristics, carcass composition, and body area and volume.
- · Understanding skeletal growth in cattle has improved the beef industry's ability to sort cattle within pens to determine amount of days required before market readiness.
- This experiment was designed to evaluate the effect of days on feed (DOF) and trenbolone acetate (TBA) + estradiol-17β (E₂) administration on biometric measurements of serially harvested steers.

Table 1. Effects of Revalor XS implant administration (REV) and days on feed (DOF) on live animal biometric measurements of Angus x Charolais steers (n=80)															30)	
	Tractment		Down on food (DOF)											P-values		
	Treatment		Days on feed (DOF)										0=11			
Item	CON	REV	0	42	84	126	168	210	252	294	336	378	SEM	TRT	DOF	TRT X DOF
n	40	40	80	72	64	56	48	40	32	24	16	8				
Hip height, cm	130.84	130.6	119.019	120.49 ^f	124.99 ^e	129.70 ^d	130.50 ^d	134.31°	134.75bc	136.42 ^{ab}	139.21ª	138.05 ^{ab}	0.39	0.72	< 0.01	0.99
Rump Length, cm	34.58	34.62	28.56 ^e	32.04 ^d	31.98 ^d	31.31 ^d	33.76°	33.40°	37.60 ^b	37.60 ^b	39.02 ^{ab}	40.70 ^a	0.28	0.92	< 0.01	0.30
Hip width, cm	66.81	68.09	54.47 ^d	61.03 ^c	56.67 ^d	56.55 ^d	61.10°	86.31 ^a	75.23 ^b	73.32 ^b	72.98 ^b	76.84 ^b	0.59	0.13	< 0.01	0.34
Shoulder Height, cm	123.10	122.3	109.61 ^g	112.09 ^f	115.58 ^e	124.81 ^b	122.18 ^c	125.81 ^b	119.40 ^d	132.51ª	131.46ª	133.57ª	0.36	0.11	< 0.01	0.50
2/3 Body length, cm	103.53	104.8	80.96 ^h	93.33 ^g	98.10 ^f	100.87 ^e	104.46 ^d	105.87 ^{cd}	107.07°	113.54 ^b	115.63 ^b	121.70 ^a	0.47	0.06	< 0.01	0.94
Body depth, cm	75.07	75.35	59.67 ⁱ	61.67 ^h	66.04 ^g	69.56 ^f	72.94 ^e	82.73°	91.50 ^a	78.49 ^d	83.88 ^{bc}	85.66 ^b	0.27	0.45	< 0.01	0.97
Body width, cm	50.25	51.42	41.72 ^f	44.66 ^e	46.41 ^d	49.92 ^c	53.13 ^b	55.28 ^a	53.04 ^b	54.03 ^{ab}	55.05 ^{ab}	55.09 ^{ab}	0.28	< 0.01	< 0.01	0.83

2/3 Body Length





Results

- No TRT x DOF interaction was exhibited (P ≥ 0.30) for any variable.
- Body width was 1.17 cm greater (P < 0.01) in REV steers.
- REV tended to have a 1.25 cm longer (P = 0.06) 2/3 body length than CON.
- REV body width was 1.17 cm wider (P < 0.01) than CON.
- Hip height increased (P < 0.01) 1 cm every 20 d.
- Shoulder height increased (P < 0.01) 1 cm every 16 d
- Rump length increased (P < 0.01) 1 cm every 33 d.
- Hip width increased (P < 0.01) 1 cm every
- Two-thirds body length increased (P < 0.01) 1 cm every 9 d.
- Body depth increased (P < 0.01) 1 cm every
- Body width increased (P < 0.01) 1 cm every 29 d.
- Hip height, rump length, hip width, shoulder height, two-thirds body length, body depth, and body width increased (P < 0.01) 1.9, 1.2, 2.2, 2.4, 4.1, 2.6, and 1.3 cm for each 42 d period, respectively.
- These data indicate biometric measurements were impacted by both growth enhancement technology and duration of finishing.



Shoulder Height

