Late Castration May Have a Place for British-Bred Calves Targeted for a Specialty Lean Beef Market

Delayed castration of male calves has been proposed as a means of improving performance and increasing red meat yield without seriously compromising meat quality. Previous research has shown mixed results, depending upon several variables such as the precise time of delayed castration, biological type/breed of calves, and post-castration nutrition. In this study, Utah State Univ. researchers assigned 65 British crossbred bull calves to three different treatments: 1) Early, castrated prior to 90 days of age; 2) Castrated at weaning at 225 days of age; 3) Late, castrated at 380 days of age. All calves were injected with Ralgro® at castration time. Weaning occurred on October 15. All calves were fed together during the entire feeding phase (Oct. 15 to slaughter). Castration was performed using the Callicrate Smart Bander™ bloodless method. Table 1 is a summary of daily gain and carcass characteristics.
Table 1. Effects of age at castration on gain and carcass characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Age at castration, days</th>
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<tbody>
<tr>
<td></td>
<td>90</td>
</tr>
<tr>
<td>ADG, weaning to slaughter, lb/day</td>
<td>2.40</td>
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<tr>
<td>Final live wt., lb</td>
<td>1,274</td>
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<tr>
<td>Dressing %</td>
<td>61.4</td>
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<tr>
<td>Hot carcass wt., lb</td>
<td>783</td>
</tr>
<tr>
<td>Marbling score</td>
<td>5.89a</td>
</tr>
<tr>
<td>% grading Choice</td>
<td>87a</td>
</tr>
<tr>
<td>Ribeye area, sq. in.</td>
<td>12.58a</td>
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<tr>
<td>Backfat, in.</td>
<td>0.49</td>
</tr>
<tr>
<td>Cutability, %a</td>
<td>49.4a</td>
</tr>
<tr>
<td>Yield grade</td>
<td>3.15a</td>
</tr>
</tbody>
</table>

\(^{a,b}\)Means with different superscripts in same row are significantly different (P<.05).

As shown above, there were no significant differences in average daily gain, final live weight, dressing percent, hot carcass weight, or backfat. However, marbling score and quality grade decreased significantly in the late castrates. Conversely, ribeye area increased and cutability and yield grade improved significantly as castration age increased.

Only a few previous studies have evaluated the effects of castration age on beef palatability. In this study, one consumer taste panel identified improved tenderness, juiciness, and overall acceptability in the early castrates, but a second taste panel detected no differences in palatability. There were no steaks rated as “unacceptable” in any of the treatments. Furthermore, Warner-Bratzler shear force measurements failed to detect any unacceptably tough steaks in the study.

These results suggest that late castration MAY be advantageous for British-bred calves in a specialty/niche market where customers will spend more for a leaner, but acceptably tender, product. The authors noted, however, that for producers to produce a higher quality grading product for the broader market, early castration would appear to be most advantageous under the conditions of this study (Heaton et al. 2004. Proc. Western Section, ASAS. 55:130).

Harlan Ritchie, Steven Rust and Daniel Buskirk
Beef Cattle Specialists
Michigan State University
East Lansing, Michigan 48824
Beef Day and Trade Show  
CSU, Chico – UC Cooperative Extension  
CSU, Chico Young Cattlemen – CBCIA

Saturday – February 19, 2005--CSU, Chico Farm Pavilion

8:00 - 9:00 am Registration, Trade Show

9:00 - 9:15 Introductions – Welcome - Dr. Charles Crabb, Dean - College of Agriculture - CSU, Chico

9:15 - 9:30 “Electronic Identification for Dummy’s”, Dr. Dave Daley – California State University, Chico

9:30 -10:15 “U.S. Beef Industry - Market Outlook”, Randy Blach – Executive Vice President , Cattle Fax

10:15-10:30 Break – Coffee, Doughnuts and Trade Show

10:30-11:00 “A Retailers Perspective on the Beef Industry”, Mark Kreul – In-N-Out Burger

11:00-11:30 Update - Northwest Pilot Project (Cattle ID), Julie Morrison – Coordinator, Northwest Pilot Project

11:30-12:10 “International Beef Trade in a Post BSE World”, Randy Blach–Executive Vice President , Cattle Fax

12:10-12:30 CCA Update
Mark Nelson – President, California Cattlemen’s Association

12:30-1:30 Tri-Tip BBQ and Trade Show, Young Cattlemen’s Auction

1:30- 2:00 Panel – Question and Answer Session, Randy Blach, Mark Nelson, Mark Kreul and Julie Morrison
Moderator - Dr. Dave Daley

Choose One Session or Visit the Trade Show

2:00 - 3:00 Fort Dodge Animal Health / CSU, Chico - Quality Assurance, Pat Sweene –Fort Dodge Animal Health

2:00 – 3:00 Weeds in Irrigated Pastures - Josh Davy - UCCE

3:00 - 4:00 Sessions Repeated
4:00 Meeting Adjourned
WINTER CATTLE HEALTH FORUM

University of California Cooperative Extension will host a winter cattle health forum on Friday February 11th from 9 AM to noon at the Glenn County Fairgrounds cafeteria in Orland. The same program will be repeated at the Cottonwood Livestock Auction Yard on Saturday February 12th, also from 9 AM until noon.

Friday and Saturday’s agendas will include talks from Dr. John Maas on the Northwest Pilot Project and a mandatory US animal ID update. Dr. Maas will also be giving an update on the BSE situation. Brad Brockman of Pfizer will speak on antibiotics for cattle. Rounding out the forum is a crystal ball on the cattle market and a presentation by Farm Advisor Larry Forero that caps the results of a study he has conducted on market data through the Western Video Market.

Mark your calendars to attend this FREE workshop. For more information please call Josh Davy at the Tehama County Cooperative Extension Office at 530-527-3101, or Larry Forero at the Shasta County Cooperative Extension Office at 530-224-4900.