

## Defining the *Certified Angus Beef*™ product difference

What's the difference between ordinary USDA Choice and Select steaks and *Certified Angus Beef*™ steaks? There's a tasty difference, according to a recent Oklahoma State University (OSU) study. Served at a medium degree of doneness, *Certified Angus Beef* steaks are generally more tender, palatable, juicy and flavorful — whether cut from the middle or from end-meat subprimals.

In fact, compared to commodity Choice steaks, *Certified Angus Beef* steaks are five times less likely to be classified as even slightly tough, say OSU researchers Jacob Nelson, Glen Dolezal, Brad Morgan and Fred Ray in their summary, "Characterization of *Certified Angus Beef* Steaks from the Round, Loin and Chuck." The data also show that marbling is more highly related to tenderness of middle meats than to tenderness of end meats. That means the key to more-palatable beef is in moving up the quality-grade scale.

The study was commissioned by the Certified Angus Beef (CAB) Program against the backdrop of overall declining beef quality and consistency. Looking at the 1995 National Beef Quality Audit (NBQA), it's no coincidence that beef marketed as a commodity has fallen in market share by about 15% to competing meats since 1970. In that survey, purveyors, restaurateurs and retailers — representing consumers — said beef was simply a poor value.

It's important to note that neither quality of nor demand for *Certified Angus Beef* product has fallen since the Program's inception in 1978; rather, demand has increased as supplies of the more consistent, high-quality product have grown.

It was the trend in quality of the overall beef supply that put the industry on alert. Other branded beef programs and, later, strategic alliances tried to match cattle to

consumer expectations. After 20 years, the CAB Program has emerged as the most successful specification-based branded beef program in the world.

Industry leaders see a branded future as a prerequisite to stopping the loss of market share, predicting half of all beef will be branded by 2005. The industry won't get there by focusing only on the higher-quality cuts, however. These middle meats (such as the rib and the loin) have increased in value, while end meats (chuck and round) have declined dramatically, according to a 1997 Cattle-Fax survey.

In a 750-pound (lb.), Yield Grade (YG) 2.8, premium-Choice carcass last fall, boneless, closely trimmed middle meats represented just 11.6% of carcass weight, but 42.4% of total boxed beef product value, according to the OSU Boxed Beef Calculator. At the same time, boneless, closely trimmed end meats represented 21.4% of the carcass weight but only 26% of the overall carcass meat value.

This points out a need to add value to end meats. The first step is determining whether end-meat subprimals can best be marketed as fresh or precooked. That's why the CAB Program funded the OSU study.

### ■ Shear forces and taste tests

From 150 randomly chosen Select, Choice or *Certified Angus Beef* steer carcasses, six subprimals (loin, sirloin, clod, knuckle, inside round and flat round) were removed from each and aged to 14 days. Then, inch-thick steaks were cut from each, vacuum-packaged and stored at minus 20° F.

Researchers thawed and cooked steaks to medium doneness (158° F), then cooled and submitted half-inch samples for Warner-Bratzler shear-force (WBS) evaluation to determine tenderness. Meanwhile, a sensory panel sampled half-inch cubes of up to 16

identically cooked steaks per day, rating them for juiciness, tenderness, connective tissue and flavor intensity.

Averaged across all six subprimals, WBS values were lowest (most desirable) for *Certified Angus Beef* steaks, highest for Select steaks and intermediate for Choice steaks. Stratified by subprimal, strip loin steaks were most tender, yet also the most variable in tenderness (see Table 1).

The sensory panel rated strip loin steaks more tender than all other subprimals. *Certified Angus Beef* steaks were the most tender, followed by Choice, then Select steaks (see Table 2).

### ■ The tender difference

The OSU data show that only 2% of *Certified Angus Beef* steaks were classified as slightly tough or tough, while 10% of commodity Choice and 25% of Select steaks fell into this category.

Compared to commodity Choice, *Certified Angus Beef* steaks had 20% more favorable shear-force ratings for top butts and 8% more favorable ratings for strip loins. Even two of the end-meat products, inside round and round flats, were 8% and 6% more tender, respectively, for the *Certified Angus Beef* subprimals.

*Certified Angus Beef* steaks were also 6%-18% more consistently tender, the least variable in shear force for all six subprimals.

OSU researchers explored the relationship between tenderness in strip loins and tenderness of other muscles, finding little correlation; however, the scientists noted, part of the low predictability may be due to that uniformity of shear force for *Certified Angus Beef* steaks.

They concluded that marbling plays a larger role in improving the tenderness of middle meats than in improving the tenderness of end meats. If the industry aims to improve palatability and the demand for end-meat steaks, it needs to look into alternatives to the current quality grading system in predicting tenderness and palatability.



Table 1. Warner-Bratzler Shear by Quality Level and Subprimal

Subprimal	Quality level		
	<i>Certified Angus Beef</i> ™	USDA Choice	USDA Select
Clod	8.64 <sup>ijk</sup> (1.21)	8.51 <sup>jk</sup> (1.39)	9.22 <sup>efg</sup> (1.63)
Strip loin	6.66 <sup>m</sup> (1.54)	7.47 <sup>i</sup> (1.72)	8.18 <sup>k</sup> (2.43)
Top butt	10.12 <sup>cd</sup> (1.01)	10.96 <sup>ab</sup> (1.52)	10.98 <sup>a</sup> (1.48)
Inside round	8.75 <sup>hij</sup> (1.41)	9.19 <sup>efgh</sup> (1.54)	9.17 <sup>gh</sup> (1.61)
Flat	9.63 <sup>ef</sup> (1.10)	9.70 <sup>de</sup> (1.26)	10.47 <sup>bc</sup> (1.68)
Knuckle	9.10 <sup>ghi</sup> (0.99)	9.15 <sup>fghi</sup> (1.15)	9.48 <sup>efg</sup> (1.39)

<sup>abcd</sup><sup>efghijklm</sup> Means in the same row with a common superscript are not different.

Table 2. Sensory Panel Tenderness Ratings for Subprimals Stratified by Quality Level<sup>a</sup>

Sensory tenderness <sup>a</sup>	Quality level		
	<i>Certified Angus Beef</i> ™	USDA Choice	USDA Select
Strip loin	5.93 <sup>b</sup>	5.69 <sup>c</sup>	5.47 <sup>d</sup>
Shoulder clod	5.14 <sup>e</sup>	5.16 <sup>e</sup>	4.87 <sup>fg</sup>
Knuckle	4.86 <sup>fg</sup>	5.05 <sup>ef</sup>	4.70 <sup>gh</sup>
Inside round	4.54 <sup>hi</sup>	4.32 <sup>j</sup>	4.47 <sup>ij</sup>
Round flat	4.09 <sup>k</sup>	4.02 <sup>k</sup>	3.94 <sup>k</sup>
Top sirloin butt	4.62 <sup>hi</sup>	4.49 <sup>ij</sup>	4.44 <sup>ij</sup>

<sup>a</sup>Sensory panel tenderness: 8 = extremely tender; 1 = extremely tough.

<sup>bcd</sup><sup>efghijkl</sup> Means in the same row with a common superscript are not different.