YOUR LINK TO

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Where's the beef?

These days, Angus seedstock and commercial producers frequently ask the question made famous by Wendy's Clara Pellar in the mid-1980s commercials. They wonder where the Angus breed has been – and, more importantly, where it is headed – in regards to muscling and that characteristic's relationship to other carcass traits.

Let's look at where the breed has been by reviewing the last 10 years (spring and fall) of the Angus carcass database by individual carcass traits. The accompanying table shows phenotypic averages for calf-fed steers harvested between 12 and 16 months of age, a class that typically makes up about two-thirds of the entire Angus database and that can be used to simplify the discussion.

Carcass weight

Over the last 10 years, calf-fed Angus steers produced carcasses that increased in weight by approximately 100 pounds (lb.). The increase speaks volumes to the selection for rapid early growth within the Angus breed, as well as applications of feedyard technologies (implanting strategies, grain processing, feed additives and the like) that have been developed during this same time frame.

Carcass weight has a huge effect on the profitability of Angus cattle marketed on pricing grids. We still sell pounds. Acceptable carcass weights to the packing industry fall between 550 and 950 lb., and 535 and 975 lb. in some cases. Stronger economic signals to encourage a more narrow range of 650 to 850 lb. would contribute much to greater product uniformity and fewer challenges in retail and foodservice preparation and presentation. However, the composition of those carcass pounds remains the objective.

Waste fat

A plague of too much external (waste) fat production still dominates the industry. This misuse of feed resources contributes greatly to the increased cost and drain on efficiency of beef production relative to other meat sources. More-modern carcasses are 0.05 inch fatter, externally. While fat cover is controlled by genetics, in practice it is usually a function of management and when cattle are harvested.

Recent market forces have dictated more days on feed, which led to greater external fat thickness. Those forces include historically wide Choice-Select price spreads, high-quality grid premiums, reduced feed costs, cheaper costs of gain relative to sell value, higher replacement feeder cattle values and cattle price forecasts.

Over the last few years, the Certified Angus Beef LLC (CAB) Carcass Data Collection Service, coordinated by Rod Schoenbine, has collected carcass trait information on 15,000-19,000 head annually. Historically, although with tremendous seasonal variation, sire-identified cattle have averaged approximately 10%–12% Yield Grade (YG) 4. In 2000 approximately 17% were YG 4. That suggests these cattle were either fed too long, had insufficient muscling per unit of carcass size or both.

Most of the YG 4 cattle achieved the minimum Certified Angus Beef™ *(CAB®) marbling requirement (Modest^0, which is average-Choice), but they were not accepted and did not receive premiums because of excessive external fat. When market conditions or packer economic signals dictate fewer days on feed, the question becomes: "If cattle are harvested with 0.4 inch external fat cover, how many can still marble sufficiently to meet minimum CAB requirements?" The quest becomes finding the lines of Angus cattle that can marble genetically with minimal fat cover.*

Ribeye area

The heavier carcasses reflect larger ribeyes, as expected. But how large is "large enough"? Suppose we consider 11 to 15 square inches (sq. in.) the range of acceptability. Faced with the challenges of portion control, preparation predictability and plate presentation, the foodservice sector prefers the lower end of this range. This has implications for carcass weight. If we assume approximately 1.70 sq. in. of ribeye area (REA) per hundredweight (cwt.) of carcass, 650- to 850-lb. carcasses yield an ideal range in REA of 11 to 14.5 sq. in. When evaluated as REA/cwt. of carcass, the lighter, externally leaner carcasses are superior. During the last 10 years, the REA/cwt. relationship has become less favorable, dropping from 1.77 to 1.62 sq. in. Angus cattle do not need more REA;

Table: Phenotypic averages of 12- to 16-month old Angus steers' carcasses

Date	Carcass wt., lb.	Fat thickness, in.	REA, sq. in.	REA/cwt. carcass	% retail product	Marbling score
S 1991	671	0.50	11.86	1.77	63.46	5.10
F 1991	671	0.50	11.86	1.77	63.46	5.10
S 1992	676	0.51	11.89	1.76	63.33	5.10
F 1992	684	0.51	11.95	1.75	63.33	5.12
S 1993	688	0.51	12.00	1.74	63.31	5.15
F 1993	705	0.57	11.91	1.69	62.38	5.30
S 1994	705	0.57	11.91	1.69	62.38	5.30
F 1994	706	0.50	11.96	1.69	63.11	5.23
S 1995	709	0.51	11.99	1.69	62.68	5.28
F 1995	745	0.54	12.23	1.64	62.17	5.67
S 1996	746	0.55	12.28	1.65	62.49	5.70
F 1996	755	0.55	12.41	1.64	62.55	5.81
S 1997	755	0.55	12.41	1.64	62.56	5.81
F 1997	756	0.55	12.43	1.64	62.58	5.81
S 1998	757	0.55	12.45	1.64	62.58	5.85
F 1998	759	0.55	12.44	1.64	62.56	5.87
S 1999	759	0.55	12.44	1.64	62.57	5.89
F 1999	762	0.54	12.43	1.63	62.52	5.88
S 2000	765	0.55	12.44	1.63	62.49	5.91
F 2000	767	0.55	12.43	1.62	62.40	5.92

instead, they need more REA per hundredweight of carcass.

Percent retail product

The increased external fatness coupled with a decreased REA/cwt. of carcass over the last 10 years has resulted in a 1-point decline in percent retail product (PRP). For genetic-selection purposes, improvements in PRP are essentially the same as improvements in yield grade or, in other words, a higher percentage of closely trimmed retail cuts from the round, loin, rib and chuck. For years, economic signals have targeted cattle be fed to YG 3.9 – if for no other reason than to enhance dressing percentage for packers who sold boxed beef. Excessive external fat cover found itself rendered off the retailers' floor.

Enter case-ready

As our major packers become more heavily involved with supplying case-ready product to retailers, economic signals will change. Further fabrication at the packing plant into closely trimmed or denuded case-ready products may revolutionize the way we do business. Trimable external fat will no longer be sent to the retailer; it will now become a liability for the packer. The demand for high-quality cattle will not change. However, economic signals will change, encouraging the production of cattle with a more desirable yield grade and PRP.

Taste fat

Angus carcasses produced in recent years have superior marbling scores. That's a tribute to those Angus producers who have recognized and placed selection pressure on carcass quality grade [marbling expected progeny difference (EPD)] and have contributed greatly to advancements in the CAB acceptance rate over time. The increase from 5.10 to 5.92 (Small^{10} to Small^{92}) brings the average calf-fed Angus steer nearer to meeting CAB minimum marbling (taste fat) requirements.

The quality revolution is in place, increasing the demand for at least a Modest degree of marbling (average-Choice). However, these cattle will have to get it done with minimum external fat cover and sufficient ribeye area per unit of carcass weight.

Cattleman's perspective

Suggestions that maternal breeds like Angus focus on reduced external fat cover, larger ribeye size or both can raise the eyebrows of those producers who have emphasized low-cost maternal function in their breeding programs. Misperceptions abound concerning the relationship between the use of negative-fat-EPD sires and the fleshing ability of their daughters. Lines of Angus cattle can be identified that would support both sides of this argument.

Likewise, there are concerns about selection for muscling and the resulting effect on fertility. Taken to an extreme in other breed populations, double-muscled cattle obviously have reproductive and calving-ease challenges.

A focus on selection for REA per unit of carcass weight could be the answer, shifting the Angus population back to the more favorable relationship of 10 years ago. Admittedly, this may favor smaller mature cow size with fewer concerns about maintenance requirements and fleshing ability, particularly in low-input environments. This also would support the foodservice industry's need for smaller ribeyes.

Take-home message

Only the future will reveal what effect case-ready products will have on the Angus breed's continued contribution to commercial beef production. Economic signals probably will continue to encourage the production of high-quality carcasses with sufficient marbling to achieve minimum CAB specifications. However, these carcasses likely will need to have less fat cover and a more favorable REA-per-carcass-weight relationship.

Continued selection for marbling EPD is imperative, but PRP EPD must get equal attention. Fortunately, the Angus breed is blessed with a carcass database that is the envy of the world and that provides the opportunity to select for marbling and PRP simultaneously as part of a multiple-trait selection program that also includes maternal function. Ten years from now, let's not be asking ourselves, "Where's the beef?"