

Focus on Phenotype Angus Sired Cattle

Data Analyzed

The TriCounty Steer Carcass Futurity Coop has been feeding and collecting data on many retained ownership cattle since 1982. Several requests have been received for sire breed analysis. Due to the Benchmarking project this has become a recent reality. This data set is from 2004-2010, represents over 38,000 head of steers and heifers which have known sires and birth dates and for the most part known breeding on the cow side as well.

Statistical analysis using General Linear Models has been employed and most averages come from Least Square procedures. It is important to realize this is not a genetic evaluation, but rather a report on how this breed is doing from a phenotypic standpoint. Traits analyzed are strictly those that can and are being measured with the TCSCF program. Reproductive traits which are extremely important to cow herd profitability are not collected by TCSCF and cannot be analyzed or reported on. Breed comparison is done using calf feds because the majority of data resides in those age categories.

The goal of the TCSCF board of directors and staff is to assist clients in improving their cattle for today's demanding marketplace. This in turn will

serve their needs in being more economically competitive.

Factors impacting performance

Many items impact how an animal will perform. Of course breed of sire and the sire itself impacts performance. That is readily observed when looking at the TCSCF Sire Profit Summary. This Focus on Phenotype will outline how the Angus sired cattle are performing in the TCSCF program since 2004.

In addition to how Angus compare to other breeds, we will also point out the impacts which the following have on performance: 1. age at delivery, 2. animal sex (steers vs. heifers), and 3. breed of dam.

Angus Breed Discussion

Angus steer calves arrive at the feedlot 17 lbs lighter than other breeds at the same delivery age. Days to finish (target of .45" backfat) is three days shorter than other breeds, thus age at slaughter has been three days younger than the average of all other breeds. Feedlot gain has been .08 lbs/day greater for Angus sired steers, but their final harvest weight has been 15 lbs less.

Angus Feedlot Performance

Steer Calves with Delivery Ages of 210 to 330 Days

Trait	Angus	Averages for
	Averages	All Other Breeds
Delivery Weight	650	667
Delivery Age	271	271
Days to Finish	168	171
ADG	3.25	3.17
Final Harvest Weight	1191	1206
% Treated for Sickness	18.5%	18.9%

Angus Carcass Trait Performance

Steer Calves with Delivery Ages of 210 to 330 Days

Trait	Angus	Averages for
	Averages	All Other Breeds
Hot Carcass Weight	731	740
Dressing Percent	61.4%	61.4%
Fat Cover, inches	0.46	0.42
Ribeye Area, sq.in.	12.33	12.70
Yield Grade, calculated	2.93	2.72
Marbling Score	Small ³⁶	Small ⁰⁴

Angus Carcass Grade Performance

Steer Calves with Delivery Ages of 210 to 330 Days

Trait	Angus	Averages for
	Averages	All Other Breeds
% Premium Choice & Prime	15.5%	7.9%
% Low Choice & better	73.2%	54.7%
% Select	25.7%	41.7%
% Yield Grade 1 & 2	53.9%	67.3%
% Yield Grade 3	43.9%	31.3%



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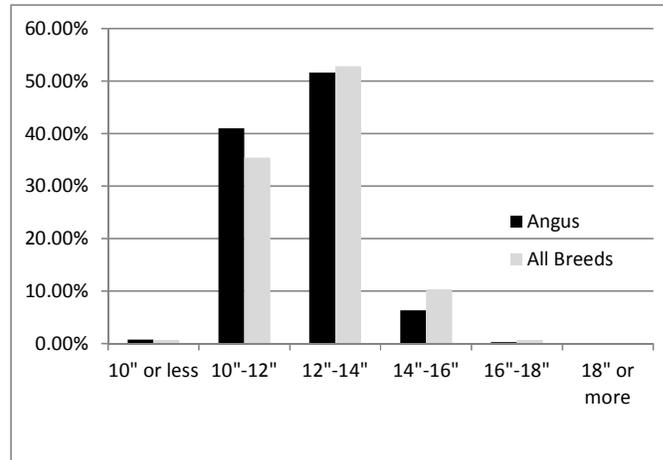
Sickness or percent treated has been slightly less than the average of other breeds.

Our experience with Angus sired steer calves from a carcass perspective was what should be expected. They have a bit less ribeye than other breeds and go to market with .04" more fat cover. The chart on the right shows that Angus have higher percentages of cattle with smaller ribeyes, especially in the 10-12" category. Yet, as the bottom table

on page 1 shows 54% and 44% of Angus steer calves made Yield Grades 1-2 and 3, respectively, thus making them competitive in market grids that emphasize quality and high cutability type carcasses.

Of course, Angus' quality strength shows up in our database. They have almost twice as many Premium Choice and Prime grading carcasses when compared to the average of all other breeds and over 73% made Low Choice or better. As will be shown later breed of dam can make a difference.

Angus Ribeye Area Distribution



Impact of Animal Sex—Angus

Heifer calves sired by Angus bulls have very acceptable performance in the TCSCF program. As shown below they arrive 60 lbs lighter than their steer contemporaries, but gain within .3 lbs daily of them and have a final harvest weight of almost 1100 lbs. Although not shown in the table, the heifers enjoyed less sickness and fewer treatments than the steers.

From a carcass perspective the

heifers were slightly fatter, but from a muscle standpoint had more ribeye area per hundred lbs of carcass weight than the steers which made them very competitive from a Yield Grade standpoint. The Angus sired heifers ended up with significantly higher marbling scores than their steer counterparts which gave them a distinct advantage in percent low Choice and higher.

Angus - Steer vs. Heifer Performance

Calves with Delivery Ages of 210 to 330 Days

Trait	Angus Steer Averages	Angus Heifer Averages
Delivery Weight	650	590
Days to Finish	168	169
ADG	3.25	2.97
Final Harvest Weight	1191	1086
Hot Carcass Weight	731	669
Fat Cover, inches	0.46	0.50
Ribeye Area, sq.in.	12.33	11.77
Yield Grade, calculated	2.93	3.00
Marbling Score	Small ³⁶	Small ⁶¹
% Low Choice & better	73.2%	82.9%

Impact of Delivery Age

A wide age range exists in the cattle consigned to the TCSCF Coop. This consignment uniqueness brings about an opportunity to investigate the impact of delivery age on performance from delivery until final carcass data is collected. Because the number of heifers can be small in the off age groups we will only concentrate on steers in this write up.

Typical cattlemen logic says that the older an animal is when it enters the finishing yard the following happens: gain faster, heavier at harvest time and more carcass weight, fewer health problems, bigger ribeyes, fatter and higher quality grades. Part of these may be true, but others may not be impacted as much as one thinks.

Five age categories of Angus steers are included in the table on page 3, from early weaning (192 days of age at delivery) through yearlings (447 days at delivery). Indeed, there was a large difference in their delivery weights. But ADG in the feedlot did not vary much until the steers were brought in as yearlings, basically 3.25 vs. 3.59 lbs

daily. By making the cattle older at harvest one was able to make the cattle heavier and resulting carcass weight progressed upward by 40 to 60 lbs depending on age comparison. The real young calves at delivery ended with the lightest carcasses with the same fat cover, however, they had slightly more ribeye/cwt. But really the only significant difference seen between normal weaning time and yearling type cattle was ribeye and calculated Yield Grade.

USDA quality grade did not respond much to making cattle older. Yes, early weaned calves were significantly lower in percent low Choice and better, However, normal/late weaned calves were equal to short yearlings. The yearlings had a 3 to 7 percent advantage. Therefore, is it advantageous to make Angus steers older just for the sake of quality grade? Of course, other factors may weigh heavily in decision making, i.e., cattle market outlook, grain price, operational cash flow, home grown feedstuffs use, etc., etc.



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Angus - Delivery Age Comparison

Trait	Delivery Age Categories				
	Early Weaning	Normal Weaning	Late Weaning	Short Yearling	Yearling
Delivery Age	192	245	296	353	447
Delivery Weight	540	627	674	712	751
Final Harvest Weight	1167	1182	1200	1231	1267
ADG	3.21	3.23	3.27	3.39	3.59
% Treated for Sickness	38.9%	21.8%	15.2%	10.0%	11.6%
Hot Carcass Weight	715	725	738	757	777
Fat Cover, inches	0.45	0.47	0.46	0.45	0.46
Ribeye Area, sq.in.	12.20	12.28	12.39	12.66	12.68
Yield Grade, calculated	2.88	2.94	2.93	2.89	2.98
% Low Choice & better	63.3%	71.4%	75.0%	73.4%	78.8%

livery weight most likely impacts feedlot gain.

Of interest is the acceptable performance of Angus sired steers from Angus cross cows, thus giving 75% Angus breeding. As a group they were 3rd for percent low Choice & better and had acceptable growth and carcass output. However, it is interesting to note that all Angus sired groups averaged over 12 sq.in. ribeyes, less than .5" fat cover, and over 50% low Choice or better. If ones goal is to produce lean beef for a specialty marketing plan, however, it does not appear Angus sired cattle would be the first choice. None of the crossbred populations have exceptional muscling, calculated Yield Grades or percent Yield Grade 1 and 2s.

It does appear from TCSCF data that Angus sires complement these dam breed types to produce cattle with acceptable growth and higher quality carcasses.

Breed of Dam Impact on Angus Sired Steers

The breed composition of your cow herd can have a large impact on how your crop will perform in many of the economically important trait. Because of the numbers required it is not possible to look at how Angus sires work with all the various types of cows out in the industry, but with the more popular types some trends can be seen and pointed out.

Cows were categorized into 7 breed types which had substantial numbers, namely Purbred Angus, Angus sired cross females, Charolais and Charolais cross females, Gelbvieh and Gelbvieh cross females, Hereford and Hereford cross females, Simmental and Simmental cross females, and various other cross females grouped into a final category.

The table to the right and

below shows how Angus sired steers performed out the seven types of cows. Of interest was how well the purebred steers performed in comparison to other breed and breed cross cows. 2nd

highest in gain and highest % low Choice % better, but with lower cutability. Those from Simmental based females also competed favorably with the most carcass output, 1st in cutability, percent YG 1&2s and within 6 points for percent low Choice & better. They were average for ADG, but their highest rank on de-

Angus Steer Calves - Breed of Dam Comparisons

Trait	Breed of Dam						
	Purebred Angus	Angus Cross	Charolais & Charolais Cross	Gelbvieh & Gelbvieh Cross	Hereford & Hereford Cross	Simmental & Simmental Cross	Other Cross Cows
Delivery Weight	660	673	676	672	687	689	663
Final Harvest Weight	1196	1204	1215	1212	1207	1241	1198
ADG	3.34	3.26	3.20	3.18	3.36	3.31	3.19
% Treated for Sickness	17.1%	18.5%	15.0%	20.0%	11.8%	17.5%	16.5%
Hot Carcass Weight	734	741	749	746	739	763	736
Fat Cover, inches	0.48	0.46	0.43	0.44	0.47	0.43	0.43
Ribeye Area, sq.in.	12.28	12.50	12.61	12.72	12.31	12.80	12.46
Yield Grade, calculated	2.99	2.91	2.83	2.79	2.99	2.82	2.82
% Low Choice & better	77.5%	69.2%	60.7%	55.3%	61.3%	71.6%	56.7%
% Yield Grade 1 & 2s	50.1%	54.7%	60.3%	66.1%	47.8%	67.4%	62.6%