

Factors Affecting Sale Price of Commercial Bulls in Virginia

J. Gleason, S.P. Greiner and M.A. McCann
Department of Animal & Poultry Sciences
Virginia Tech

Virginia BCIA

- **Founded 1955**
- **Central Bull Test Program**
 - **Education**
 - **Bull Development & Marketing**



Virginia Bull Development Program

- **Bull sale data associated with Virginia BCIA Central Bull Tests (2002-2011)**
 - **Two locations**
 - **Four test groups**
 - **Three sales**
- **1645 Angus, 140 SimAngus bulls**



Data - Catalog Information

- **Performance Measures**
 - **Individual Performance: BW, WW, YW, ADG, ultrasound, ratios, frame score, scrotal cir.**
 - **EPDs: CE, BW, WW, YW, MM, carcass/ultrasound, \$W, \$B percentile rankings**

The Process

- **Sale requirements**
 - **Test ADG ratio > 80**
 - **Adjusted yearling wt ratio > 90**
 - **Minimum YW EPD**
 - Virginia Quality Assurance (VQA) Feeder Calf Program
 - **Frame score > 5.0**
 - **Pass reproductive soundness exam**
 - **Structural correctness screening**
 - **Disposition screening**
 - **Sell target of top 2/3 based on Sale Index (each breed test group)**

Means of EPD Percentile Rankings for Sale Bulls 2002-11

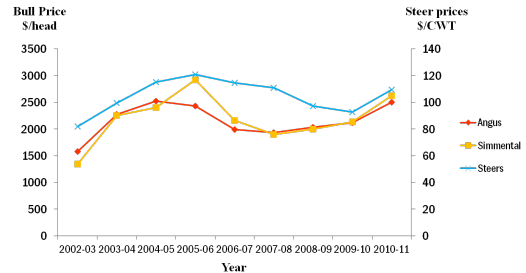
	AN	SM	SA
CED %	39.5 ± 24.3	38.9 ± 24.8	-
BW %	49.1 ± 24.4	43.8 ± 23.0	39.1 ± 21.5
WW %	24.2 ± 17.4	35.7 ± 20.9	25.4 ± 21.9
YW %	21.8 ± 14.8	28.4 ± 17.3	15.8 ± 13.9
Milk %	23.7 ± 21.1	46.4 ± 26.7	25.6 ± 22.0
MB %	39.1 ± 24.2	37.9 ± 26.6	29.6 ± 28.4
REA %	37.9 ± 21.8	32.0 ± 22.7	33.8 ± 30.0
\$ B %	29.4 ± 20.1	-	-
\$ W %	27.4 ± 19.0	-	-
API %	-	28.1 ± 21.0	28.6 ± 22.6
TI %	-	24.6 ± 18.2	19.5 ± 20.5

Bull Buyer Demographics

- 2008 survey- 343 producer responses
- Average age of producers = 59 yrs.
- Average herd size = 96 cows
- Calving seasons
 - Feb-April
 - Sept-Nov
- Bull breeds
 - 72% AN, 8% SM, 7% CH, 6% GV, 4% PH, 3% other
- Bull Sources
 - Test Stations 34%
 - Private Treaty 25%
 - Production Sales 24%
 - Other 18%
- Sell calves at weaning, keep own replacements



Relationship between bull prices and feeder steer market prices in Virginia



Relationship between Sale Price & Individual Performance

Variable	AN	SM	SA
Act. BW	-0.14**	NS	NS
Adj. WW	NS	NS	0.27*
Final Wt.	0.38**	0.37**	0.23*
Test ADG	0.36**	0.25**	0.22*
Test Adj. YW	0.50**	0.38**	0.24*
Frame Score	NS	NS	NS
Scrotal Cir.	0.17**	NS	NS

* P < 0.05
** P < 0.01

Relationship between Sale Price & Individual Performance

Variable	AN	SM	SA
Adj. Fat	NS	NS	NS
Adj. REA	0.06*	NS	NS
Adj. % IMF	0.08**	NS	0.27*

** P < 0.05
* P < 0.01

Relationship between Sale Price & EPDs

Variable	AN	SM	SA
CE EPD	0.29**	NS	-
BW EPD	-0.29**	NS	NS
WW EPD	0.21**	NS	NS
YW EPD	0.29**	0.19*	NS
Milk EPD	0.22**	NS	0.39**

* P < 0.05
** P < 0.01

Relationship between Sale Price & Carcass EPDs

Variable	AN	SM	SA
MB EPD	0.15**	0.17*	0.21*
RE EPD	0.21**	0.19*	0.24*
Fat EPD	0.06**	NS	NS

* P < 0.05
** P < 0.01



Relationship between Sale Price & Selection Index EPDs

Variable	AN	SM	SA
\$ B	0.29**	-	-
\$ W	0.32**	-	-
API	-	NS	NS
TI	-	0.30*	NS

*P < 0.05
** P < 0.01

Test Sale Index

➤ Test Sale Index (sale order determinant)

- **2/3 Station Index + 1/3 EPD Index**
 - EPD Index = average percentile ranking for BW, WW, YW, MM EPDs

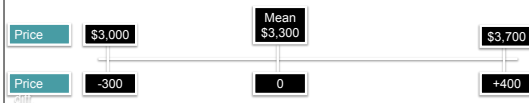
Variable	AN	SM	SA
Sale Index	0.69**	0.39**	0.41**

** P < 0.01

Sale Value

➤ Price differential

- Actual Sale Price – mean price (within breed, yr, location, age)
- Compare bull sale prices with his contemporary group



Predicting Bull Value- Angus

Prediction Variables	Sale Value R ²
Adj. YW, CE EPD, ADG, YW EPD	0.42
+ \$ W EPD, Final Wt.	0.49
+ WW EPD, \$ Beef EPD	0.51
+ Fat EPD, Act. BW	0.53

Predicting Bull Value- Angus

Prediction Variables	Sale Value R ²
2006-2007 Angus Bulls	
Adj. YW, CE EPD, ADG, WW EPD	0.44
+ Final Wt., BW EPD, \$B EPD, Milk EPD, \$ W EPD	0.50
2010-2011 Angus Bulls	
ADG, CE EPD, \$W EPD, \$B EPD, MB EPD	0.63

Predicting Bull Value- Simm

Prediction Variables	Sale Value R ²
Adj. YW, ADG, Act. BW	0.23
+ YW EPD, BW EPD, Act. REA	0.28
+ MB EPD	0.29

Summary

- Substantial differences in sale value can be explained by various objective measures and predictors of genetic merit
- Growth and calving ease most strongly related to sale value, carcass measures substantially less important
- Carcass EPDs produced stronger relationships with price differential than ultrasound measurements for all breeds
- Selection indexes show signs of being adopted by AN bull customers in recent years
- Additional factors, other than individual performance and EPDs are important
 - Breeder reputation
 - Pedigree
 - Phenotype
- Generally, differences in bull value explained by priorities of breeding objective for typical commercial bull customer