

# MCA/MSU BULL EVALUATION PROGRAM

2017-2018 Final Report



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## Background

The Michigan Cattlemen’s Association/Michigan State University (MCA/MSU) Bull Evaluation Program is a cooperative effort between the Michigan Cattlemen's Association, Michigan State University, and Plank Farm. The objectives of the program are to 1) promote performance-evaluated beef cattle and serve as an educational tool to acquaint producers with its overall value; 2) provide a common environment for evaluating young bulls for rate of gain, soundness, and body composition; and 3) aid beef producers in obtaining superior bulls that have been evaluated for growth, breeding and structural soundness, and carcass merit.

The 2017-2018 MCA/MSU Bull Evaluation Program was initiated on October 13-14, 2017 with the delivery of 80 bulls. **This was the 30<sup>th</sup> consecutive year of the program.** The MCA contracted with Plank Farm, Crystal, Michigan to furnish development facilities and provide complete care and management for the bulls. The MCA/MSU Bull Evaluation Program Committee set rules, policies, and performance standards, handled consignments, certified records, and generally supervised the evaluation and sale. The Committee is composed of appointed breed representatives, and non-voting members, including the station manager, MSU faculty/staff, and MCA Executive Vice President (**Table 1**). Whenever possible, the MCA/MSU Bull Evaluation Program follows the Guidelines for Uniform Beef Improvement Programs<sup>1</sup> published by the Beef Improvement Federation (BIF).

**Table 1. MCA/MSU Bull Evaluation Program: Committee Membership (2017-18)**

<b>Breed Representatives</b> (voting members)	<b>Michigan Cattlemen’s Association</b>
Bob Zellmer (Angus; Committee Chair)	George Quackenbush
Monte Bordner (Angus; Committee Vice	<b>Michigan State University</b>
Kevin Beckington (Angus)	Dan Buskirk
Mike Karweik (Red Angus)	Kevin Gould
Larry Kindel (Simmental)	<b>Station Management</b>
Brian Plank (Simmental)	Brian Plank
Mark Sears (Commercial)	

## BULLS AND MANAGEMENT

Twenty-five MCA members and seedstock breeders (24 Michigan, 1 Indiana) evaluated bulls in the evaluation. Eighty bulls born between August 31, 2016 and March 31, 2017 were delivered to the evaluation station (Plank Farms) on October 13 and 14, 2017. Bulls accepted for test were required to have a minimum weight per day of age (WDA) of 2.4 pounds at delivery, and not have been a known or tested carrier of a lethal genetic defect. Bulls must have previously tested negative for BVDV and bovine tuberculosis and have been

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<sup>1</sup> BIF. 2016. Guidelines for uniform beef improvement programs. 9<sup>th</sup> ed. Beef Improv. Fed.

vaccinated and boosted for IBR, BVDV (types 1 & 2), PI<sub>3</sub>, BRSV, *M. haemolytica* (with toxoid), *H. somni*, 5-way Leptospira, and 7-way clostridial. Bulls were divided into four pens based on incoming age, weight, and contemporary group. The 17 oldest bulls (one pen) were classified as “senior”, with all remaining bulls classified as “junior”. Upon arrival, bulls were treated for internal (Safe-Guard® (fenbendazole) oral drench), and external (Ultra Saber™ (lambdacyhalothrin and piperonyl butoxide) parasites (**Table 2**). The bulls were later administered a 5-day treatment for coccidia control (CORID® (amprolium)) and vaccinated for prevention of respiratory disease (Vista® Once SQ). Bulls within an age classification were fed an identical diet formulation so that their contemporary group could be maintained. During the evaluation, bulls were treated on two more occasions with a pour-on insecticide for lice control (Ultra Saber and Synergized Delice® (permethrin and piperonyl butoxide). Bulls also received a bovine tuberculosis caudal fold test near the end of the evaluation.

**Table 2. MCA/MSU Bull Evaluation Program: Group Treatment of Bulls (2017-18)**

Date	Product	Purpose
10/13-14/17	Ultra Saber	Lice control
10/13-14/17	Safe-Guard	Internal parasite control
10/23/17	Corid 1.25%	Coccidiosis prevention/treatment
10/26/17	Vista Once SQ	IBR, BVD, PI <sub>3</sub> , BRSV, <i>M. haemolytica</i> , <i>P. multocida</i>
12/22/17	Ultra Saber	Lice control
2/24/18	Synergized Delice	Lice control

### RATIONS

Bulls were fed daily in fence-line feed bunks with feed that was furnished by Plank Farm (raised or purchased). Feeds were sampled periodically for nutrient composition analysis. Rations were formulated and adjusted every 28 days by MSU Extension staff. On average, the evaluation diet was balanced to contain 37% corn silage, 27% corn, 24% hay, 10% dry distillers grain and 2% supplement on a dry matter (DM) basis. Average nutrient content on a DM-basis was 12.5% crude protein and 0.52 Mcal NE<sub>g</sub>/lb. Also, in accordance with BIF guidelines, bulls were given an increased percentage of dietary forage for 4 weeks post-evaluation, along with daily exercise, to further prepare them for the breeding season and optimize reproductive performance.

### PERFORMANCE EVALUATION

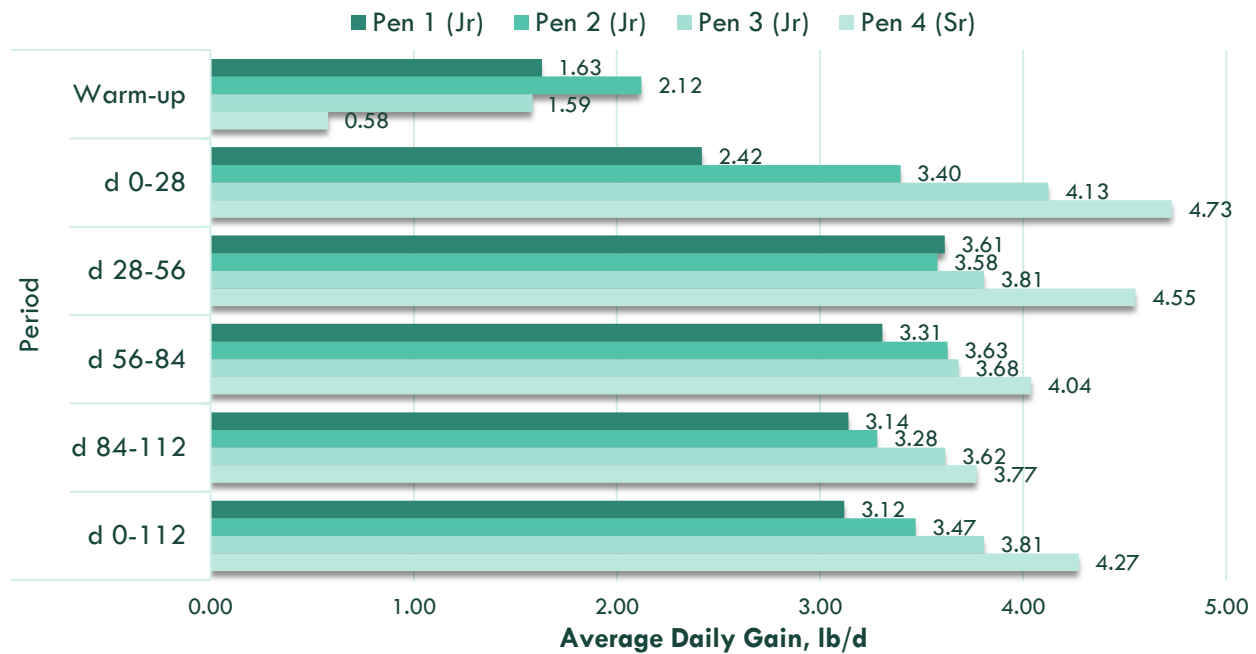
At the beginning of the gain test (14 days after arrival), bulls had hip height measured, and were weighed on two consecutive days. Bulls were then weighed each successive 28 days, to monitor growth rate. Interim performance reports were published and communicated to an email list. Following the 112-day test period, hip height and weights were taken on two consecutive days. The ADG and WDA ratios were calculated within junior and senior classifications. To be sale eligible, bulls must have had a minimum average daily gain of 2.8

lb. per day. Average performance measures by age classification and breed are listed in **Table 3**. Growth performance by pen is shown in **Figure 1**. Near the end of the evaluation, ultrasound measurement of fat thickness, ribeye area and percent intramuscular fat was completed. All ultrasound data were processed through the centralized ultrasound processing laboratory (CUP Lab, Ames IA), which submitted the interpreted data to the respective breed associations for carcass data EPD calculations. **Table 3** lists the average ultrasound measures, and **Figure 2** displays rib fat thickness measured at the spring ultrasound, as an indication of bull compositional development compared to previous years.

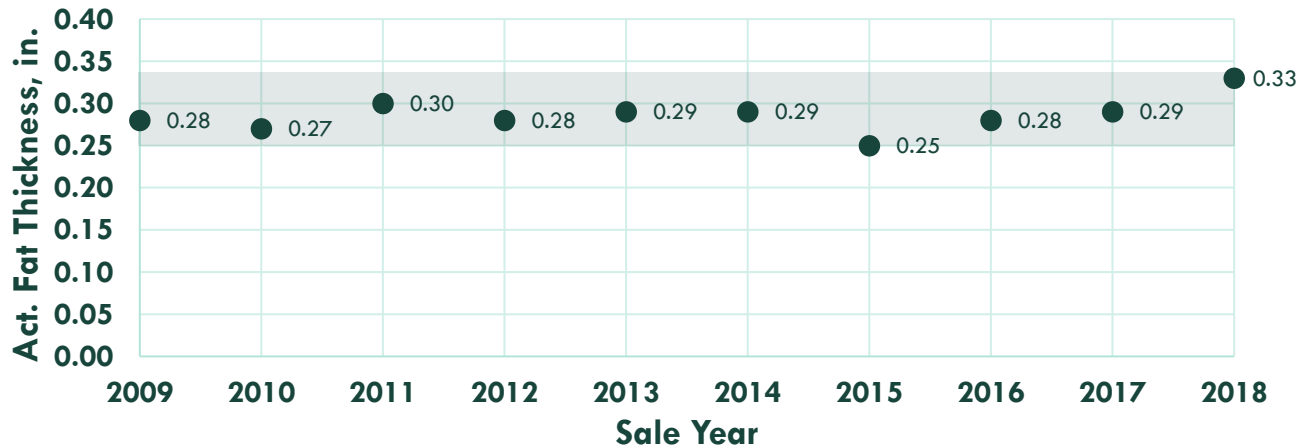
**Table 3. MCA/MSU Bull Evaluation Program:  
Performance Measures by Age Division and Breed (2017-18)**

	Farm		Evaluation measures						Ultrasound, 365-d				
	n	Act. BW	Adj. WW	Initial wt., lb	Final wt., lb	ADG, lb/d	WDA, lb/d	Frame score	Scrotal Cir., in	Pelvic in <sup>2</sup>	Fat, in	REA, in <sup>2</sup>	IMF, %
<i>Senior</i>													
Angus	13	81	745	929	1415	4.30	3.23	5.5	37.4	202	0.34	12.0	3.61
Simmental	3	89	771	1140	1618	4.29	3.31	4.9	37.7	202	0.40	16.1	2.33
<i>Junior</i>													
Angus	35	80	685	753	1155	3.52	3.14	5.0	35.1	199	0.35	12.9	3.45
Red Angus	3	81	715	753	1126	3.27	3.32	5.5	35.1	214	0.26	12.4	2.63
Simmental	25	82	688	806	1193	3.42	3.16	5.1	36.1	204	0.28	13.3	2.41
<i>All bulls</i>	79	81	700	818	1225	3.64	3.17	5.2	35.9	202	0.32	13.0	3.07

**Figure 1. MCA/MSU Bull Evaluation Program: Growth Performance by Pen (2017-18)**



**Figure 2. MCA/MSU Bull Evaluation Program: Spring Ultrasound 12th-13th Rib Fat Thickness (2009-18)**



All bulls eligible for sale passed a breeding soundness exam (BSE), including semen evaluation as per Society for Theriogenology. Bulls born between February 1 and March 31, 2017 had to meet all requirements of a BSE, except, the normal sperm morphology requirement was lowered to 50% (compared to 70% for those born prior to February 1).

**Table 4** shows the BSE results for young bulls (born February and later) that passed the BSE,

and passed at the lowered morphology threshold. Six bulls received a second breeding soundness exam before the sale. This included rechecks for white blood cells (WBC; n=5) and wart regrowth (n=1). All bulls with previous high WBC cleared upon recheck and were offered for sale. The bull with the wart did not heal properly, received a deferred status on BSE, and was not offered for sale. **Table 4** outlines the 5-year summary for causes of sale ineligibility.

**Table 4. MCA/MSU Bull Evaluation Program:  
BSE Results for Feb. and Mar. Born Bulls (5 Year Summary)**

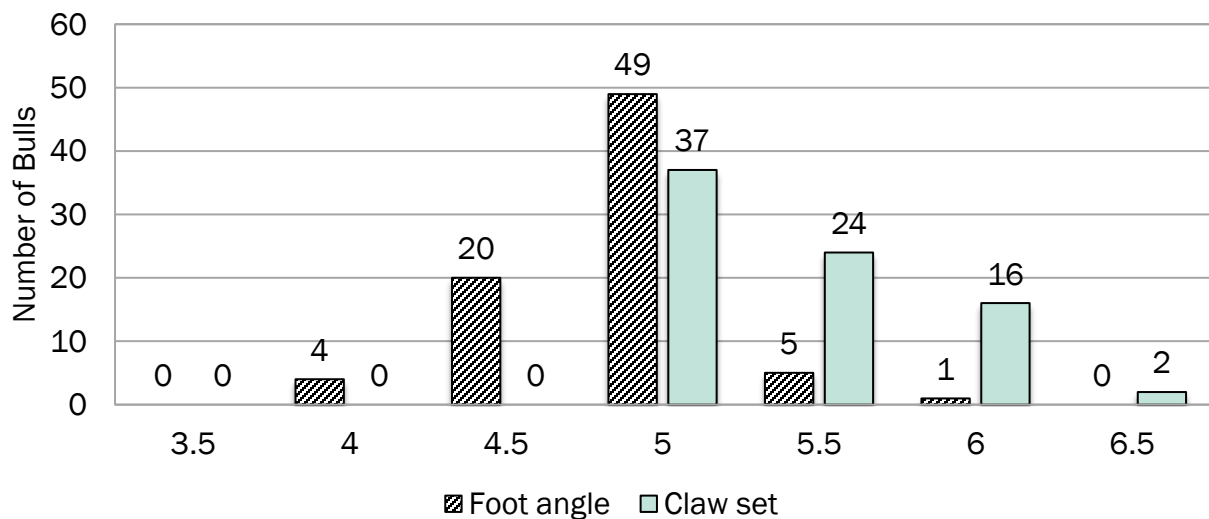
	Program Year				
	2013-14	2014-15	2015-16	2016-17	2017-18
Bulls passing BSE, total	30	43	28	21	21
Bulls passing BSE, 50 to 69% normal	9	6	6	15	15
Bulls deferred or failing BSE, total	8	9	11	13	9
Bulls deferred or failing BSE due to semen quality	5	6	3	11	5

**Table 5. MCA/MSU Bull Evaluation Program:  
Causes for Sale Ineligibility (5 Year Summary)**

	Program year				
	2013-14	2014-15	2015-16	2016-17	2017-18
Number of bulls	108	103	71	103	80
Number ineligible for sale	36	37	17	27	18
<b>Reason for ineligibility</b>					
ADG	4	6	1	6	7
BSE	26	25	11	15	9
Semen quality	20	19	6	11	7
No semen	1	1	2	1	1
Insufficient scrotal	0	0	0	0	0
Genital warts	2	4	2	2	1
Repro structure	3 (testicle abnormalitie	1 (sem. vesicle	1 (testicle degeneration	1 (penile laceration)	0
Structure	0	0	2	2	0
Temperament	0	4	0	1	0
Consignor request	2	2	0	2	0
Mortality	2	0	1	0	0
Other	2 (leg injuries)	0	2 (broken leg, shoulder abscess)	1 (eye scar)	2 (lethal genetic defects)

The 2017-18 evaluation marked the first year that bulls were objectively scored for foot structure in an attempt to eliminate bulls from the sale that had a likelihood of future impaired movement and reduced longevity. Bulls were visually screened for extremes in foot angle, claw set, or leg conformation upon delivery to the station. At delivery, one bull was identified and returned home for an extreme in claw set. At the 84 day weigh day, scores for foot angle and claw set (1 to 9 scale, where 5 is ideal) were assigned by two independent evaluators per established guidelines<sup>2</sup>. When there was scoring variation among an animal's feet, the worst foot was scored. The distribution of foot angle and claw set scores are shown in **Figure 3**. At the conclusion of the test, no bulls were identified with extremes in scores that met criterion for removal from the sale offering (<3 or >7). Additionally, all bulls were deemed acceptable for general structural soundness and temperament.

**Figure 3. MCA/MSU Bull Evaluation Program: Foot Angle and Claw Set Scoring Frequency (2017-18)**



**Table 5** presents the historic averages for the percentage of bulls eligible for the sale by birth month.

Bulls that successfully meet all sale criteria were freeze branded with the Bull Evaluation Program brand and fitted. Sale order was determined by evaluation index, with the lowest indexing bull selling first. The evaluation index was the average of percentile rank for six EPD values (calving ease direct, weaning weight, yearling weight, maternal milk [no additional benefit when less than 20%], marbling, and ribeye area), and evaluation percentile rank for ADG and WDA (ADG and WDA percentiles were calculated independently for senior and junior bulls).

<sup>2</sup> American Angus Association. n.d. Foot score guidelines. Available: <http://www.angus.org/performance/footscore/footscoreposter.pdf>



**Table 6. MCA/MSU Bull Evaluation Program:  
Historic Eligibility by Birth Month (15 Yr. Avg., 3 Yr. Detail)**

2015-16					2016-17				
B. Month	No.	Out	Eligible	% Eligible	B. Month	No.	Out	Eligible	% Eligible
Sep	7	4	3	43%	Sep	2	0	2	100%
Oct	5	1	4	80%	Oct	4	1	3	75%
Nov	1	0	1	100%	Nov	2	0	2	100%
Dec	5	1	4	80%	Dec	2	0	2	100%
Jan	20	5	15	75%	Jan	33	2	31	94%
Feb	20	1	19	95%	Feb	25	9	16	64%
Mar	13	5	8	62%	Mar	35	15	20	57%
Total	71	17	54	76%	Total	103	27	76	74%

2017-18					15 Year Average (2003-04 to present)				
B. Month	No.	Out	Eligible	% Eligible	B. Month	No.	Out	Eligible	% Eligible
Sep	1	0	1	100%	Sep	62	17	45	73%
Oct	4	0	4	100%	Oct	58	16	42	72%
Nov	1	0	1	100%	Nov	29	9	20	69%
Dec	10	4	6	60%	Dec	81	26	55	68%
Jan	25	4	21	84%	Jan	432	125	307	71%
Feb	22	4	18	82%	Feb	436	115	321	74%
Mar	17	6	11	65%	Mar	328	108	220	67%
					Apr	76	37	39	51%
Total	80	18	62	78%	Total	1502	453	1049	70%

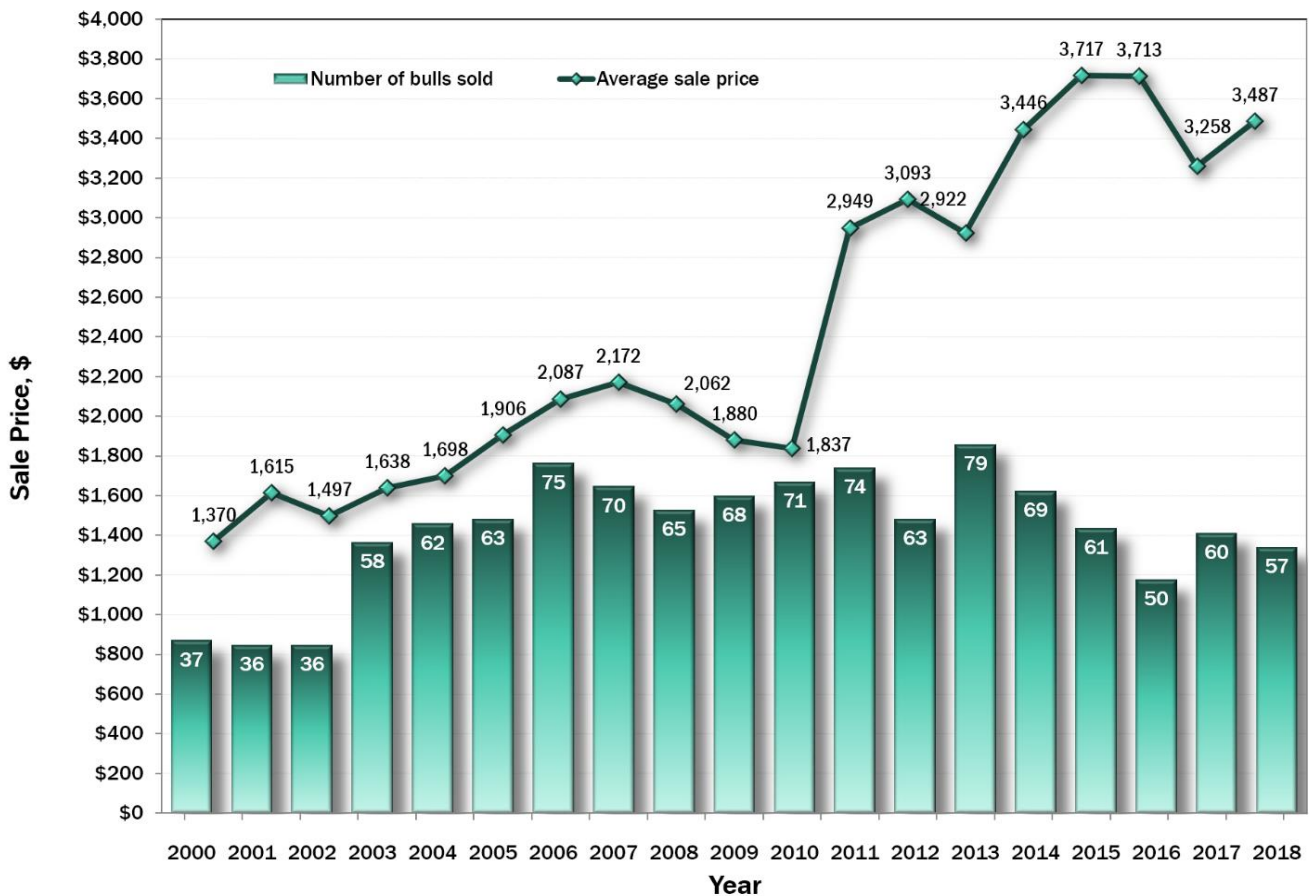
## SALE RESULTS

An open house was held on March 3, 2018, to give buyers an opportunity to view bulls and visit with consignors prior to the sale. The culmination of the program was the auction of 62 eligible bulls, at the station on March 17, 2018. All pertinent information was published in the sale catalog, including: consignor contact information, breed, breed percentage, hide color, horn status, registration number, DD status, tattoo/brand, radio frequency identification number, birth type (single, twin, ET), birth date, actual birth weight, adjusted weaning weight, test average daily gain, off test weight, off test weight per day of age, actual scrotal circumference, 365-day adjusted scrotal circumference, 365-day adjusted pelvic area, frame score, 365-day adjusted measures for ultrasound fat thickness, ribeye area, and intramuscular fat percentage, Expected Progeny Differences (EPD) for calving ease (CE), birth weight (BW), weaning weight (WW), yearling weight (YW), maternal milk (MM), marbling (Marb), fat thickness (Fat), ribeye area (REA), two breed specific EPD indexes, percentile ranks for each EPD, and a two-generation pedigree. Genomically enhanced EPDs were noted in the catalog listing. Of 80 bulls evaluated, 40 (50%) had genomic enhanced EPDs, and of 62 bulls offered for sale, 31 (50%) had genomic enhanced EPDs. Of those bulls with genomically enhanced EPDs, 29 were Angus and 2 were SimAngus.

Prior to the sale, bulls were videoed individually and a link to videos and electronic copy of the sale catalog made available on the MIBulls.com website. DVAuction was utilized to offer

an online bidding option to buyers. A minimum floor price of \$2,250 was established for the sale, and 57 bulls, of the 62 offered for sale, sold at or above the floor price. The historic number of bulls sold and average sale price is given in **Figure 4**. **Table 6** includes sale averages for bulls by breed.

**Figure 4. MCA/MSU Bull Evaluation Program: Number of Bulls Sold and Average Sale Price**



**Table 6. MCA/MSU Bull Evaluation Program: Sale Prices by Breed (2017-2018)**

Breed	Bulls sold	Sale gross	Average
Angus	35	\$128,000	\$3,657
Simmental	19	\$61,750	\$3,250
Red Angus	3	\$9,000	\$3,000
<b>Total</b>	<b>57</b>	<b>\$198,750</b>	<b>\$3,487</b>