

# MCA-MSU Bull Evaluation Program

2022-23 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 MCA, MSU, and Wernette Cattle Co. 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 2022-23 MCA-MSU Bull Evaluation Program was the 35<sup>th</sup> consecutive year of the program. Wernette Cattle Co., Remus, Michigan furnished facilities and care for the bulls. Mr. Karl Wernette served as station manager and provided daily care for the developing bulls. The new facility is a 228 × 50 ft. monoslope barn consisting of 4 large pens with outdoor exercise lots, and a handling facility. The MCA-MSU Bull Evaluation Program Committee set the 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 and staff, and MCA Executive Vice President (**Table 1**). Whenever possible, the MCA-MSU Bull Evaluation Program follows the Guidelines for Uniform Beef Improvement Programs published by the Beef Improvement Federation (BIF).<sup>1</sup>

**Table 1. MCA-MSU Bull Evaluation Program: Committee membership (2022-23)**

Michigan Cattlemen’s Association	Breed Representatives
Sara Horton*	Phil Smith (Simmental; Committee Chair)
Michigan State University	Paul Dawson (Angus; Vice Chair)
Dan Buskirk*	Kevin Beckington (Angus)
Kevin Gould*	Mark Benaske (Angus)
Station Management	Mike Karweik (Red Angus)
Karl Wernette*	Randy Longcore (Simmental)
	Mark Sears (Commercial)*

\*Non-voting member

## BULLS AND MANAGEMENT

Twenty-four seedstock breeders, MCA members (22 MI, 1 IN, 1 OH) evaluated bulls in the evaluation. Ninety bulls born between September 1, 2021, and April 1, 2022, were delivered to the evaluation station (Wernette, Cattle Co.) on October 7, 2022. Bulls accepted were required to have a minimum of 2.4 pounds weight per day of age (WDA) at delivery,

<sup>1</sup> BIF. 2021. Guidelines for uniform beef improvement programs. Beef Improvement Federation. Available: <http://guidelines.beefimprovement.org/index.php>

and not have been a known or tested carrier of a lethal genetic defect. Bulls must have previously tested negative for Bovine Viral Diarrhea Virus (BVDV) and have been 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, and farm contemporary group. The 20 older bulls (one pen) were classified as “senior”, with all remaining bulls classified as “junior”. Upon arrival, bulls were administered Safe-guard (Intervet/Merck Animal Health, Madison, NJ) for internal parasite control. After arrival, bulls were administered amprolium (CORID, Boehringer Ingelheim Animal Health USA Inc., Duluth, GA) for coccidia control, and vaccinated again for prevention of respiratory disease (Bovilis Vista Once SQ, Intervet/Merck Animal Health) (**Table 2**). Bulls within an age classification were fed the same diet formulation so that their contemporary groups were maintained. During the evaluation, bulls were poured with lambda-cyhalothrin and piperonyl butoxide (Ultra Saber, Intervet/Merck Animal Health) for lice control (**Table 2**).

**Table 2. MCA-MSU Bull Evaluation Program: Group treatment of bulls (2022-23)**

Date	Product	Purpose
10/7/22	Safe-guard	Internal parasite control
10/18/22	Corid 1.25%	Coccidiosis prevention/treatment
10/22/21	Bovilis Vista Once SQ	Prevention of IBR, BVD, PI <sub>3</sub> , BRSV, <i>M. Haemolytica</i> and <i>P. multocida</i>
11/18/22	Ultra Saber	External parasite control
1/13/23	Ultra Saber	External parasite control

## RATIONS

Bulls were fed once daily in a fenceline bunk with feed that was raised or purchased by Wernette Cattle Co. 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 36.9% corn silage, 24.0% corn, 25.5% hay, 12.5% dry distillers grain and 1.1% mineral-vitamin supplement on a dry matter (DM) basis. Average nutrient content was 13.45% crude protein and 0.52 Mcal NE<sub>g</sub>/lb on a DM-basis. Also, in accordance with BIF guidelines, bulls were given an increased percentage of dietary forage for 4 weeks post-evaluation, along with daily exercise throughout the test, 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 every 28 days, to monitor growth rate. Interim performance reports were published and communicated to an email list. Following a 112-day test period, hip height and weights were taken on two consecutive days. The ADG and WDA ratios were calculated for the combined junior and senior classifications. To be sale eligible, bulls must have had a minimum average daily gain of 2.8 lb/day. Average performance measures by age classification and breed are listed in **Table 3**. Growth performance by pen is shown in **Figure 1**. Ultrasound measurement of fat thickness, ribeye

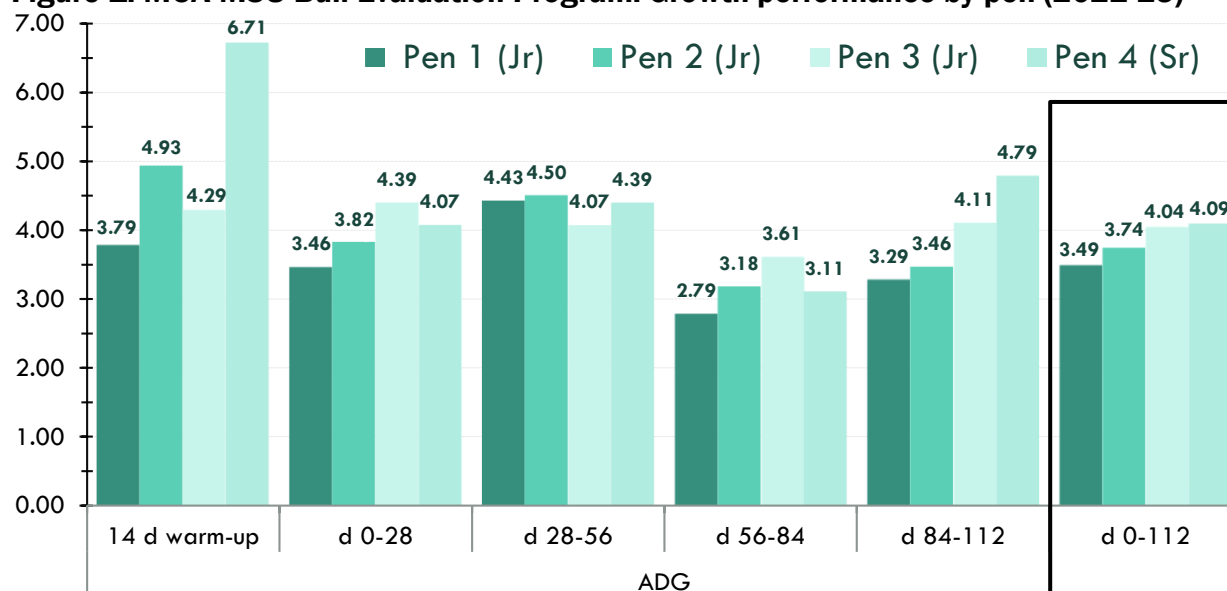
area, and intramuscular fat percentage was completed on 11/7/22 for the oldest bulls and on 2/10/23 for the remaining bulls. All ultrasound data were processed through the CUP Lab (Ames, IA), which submitted the interpreted data to the respective breed associations for carcass data EPD calculations. **Table 3** lists the average ultrasound measures, and **Figure 2** displays rib fat thickness measured at the spring ultrasound, as an indication of bull body condition compared to previous years.

**Table 3. MCA-MSU Bull Evaluation Program: Performance measures by age division and breed (2022-23)**

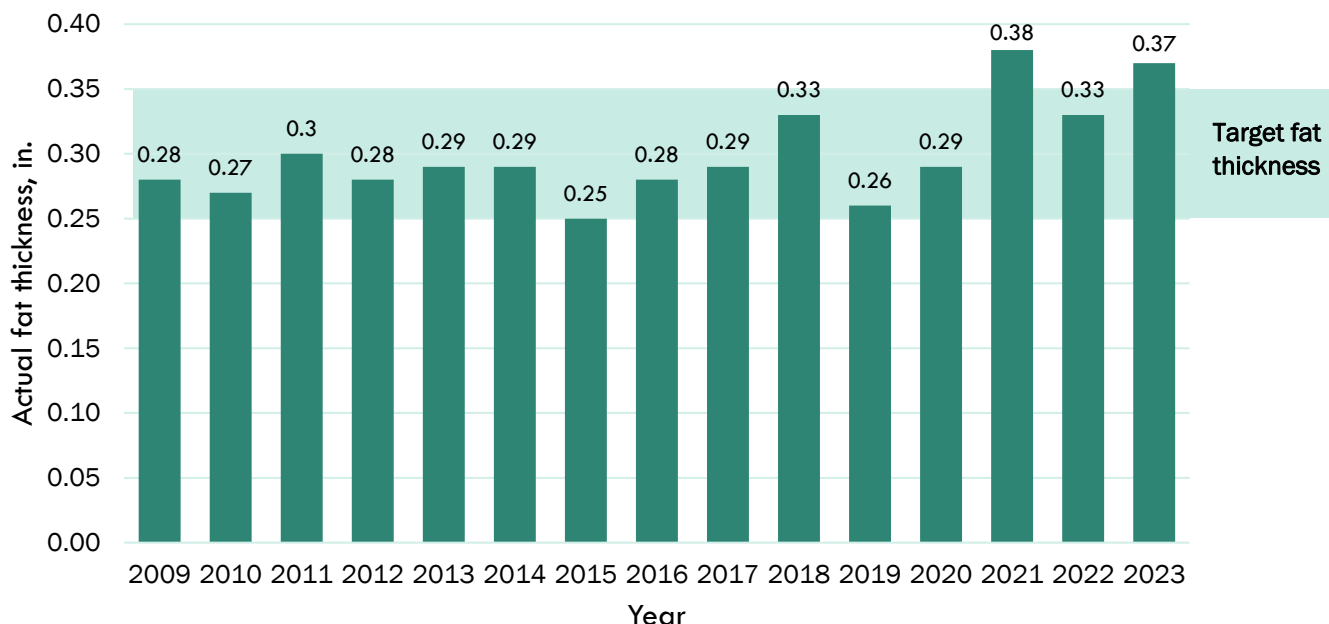
	n	Farm		Evaluation measures						Ultrasound, 365-d			
		Act. BW	Adj. WW	Initial wt.,	Final wt.,	ADG, lb/d	WDA, lb/d	Frame score	Scrotal cir, cm	Pelvic cm <sup>2</sup>	Fat, in	REA, in <sup>2</sup>	IMF, %
<b>Senior</b>													
Angus	13	81.1	747	1254	1712	4.09	3.29	5.6	35.8	227	0.16	11.7	3.36
P.Hereford	1	86	647	1233	1748	4.60	3.37	5.9	35.8	223	0.28	15.3	1.49
Charolais	1	78	733	1285	1538	2.25	2.97	6.4	–	–	0.21	15.3	1.28
Simmental	5	80.2	718	1186	1661	4.24	3.18	5.9	34.4	224	0.14	12.6	1.82
<b>Junior</b>													
Angus	40	80.7	661	818	1236	3.74	3.27	5.3	36.3	207	0.40	12.4	3.86
Red Angus	7	81.1	718	745	1110	3.26	3.13	5.3	35.6	191	0.35	12.3	2.36
Charolais	1	76	793	783	1085	2.70	3.31	6.1	–	–	0.32	13.5	2.06
Simmental	21	80.0	700	839	1278	3.92	3.25	5.4	36.2	216	0.29	12.9	2.73
<b>All bulls</b>	<b>89*</b>	<b>80.6</b>	<b>694</b>	<b>911</b>	<b>1337</b>	<b>3.80</b>	<b>3.25</b>	<b>5.4</b>	<b>36.0</b>	<b>213</b>	<b>0.32</b>	<b>12.5</b>	<b>3.21</b>

\*Bulls that completed the 112-d evaluation period

**Figure 1. MCA-MSU Bull Evaluation Program: Growth performance by pen (2022-23)**



**Figure 2. MCA-MSU Bull Evaluation Program: Spring ultrasound actual rib fat thickness (15-year summary)**



All bulls eligible for sale passed a breeding soundness exam (BSE), including semen evaluation according to the Society for Theriogenology standards. Bulls born between February 1 and March 31, 2022, had to meet all requirements of a BSE, except, the normal sperm morphology requirement was lowered to 50%, compared to 70% for those born before February 1. **Table 4** shows the BSE results for bulls born February 1 and later that passed the BSE and passed at the lowered morphology threshold. Seven bulls received a second BSE before the sale. This included five rechecks for white blood cells (WBC), one for penile warts, and one for extension failure. Five of the seven bulls passed the recheck BSE (except 1 with WBC, and 1 with warts) and were offered for sale. **Table 5** outlines a historical summary for causes of sale ineligibility. Twenty-three bulls were ineligible to meet all sale criteria.

**Table 4. MCA-MSU Bull Evaluation Program: BSE results for Feb. and Mar. born bulls (4-year summary)**

Breeding Soundness Exam category	Program year			
	2019-20	2020-21	2021-22	2022-23
Passing, total	37	29	38	17
Passing, 50-69% normal morphology	6	5	5	2
Deferred or failing, total	1	8	7	5
Deferred or failing for semen quality	1	4	6	4

**Table 5. MCA-MSU Bull Evaluation Program: Causes for sale ineligibility (5-year summary)**

	Program year				
	2018-19	2019-20	2020-21	2021-22	2022-23
Number of bulls	92	78	100	98	90
Number ineligible for sale	29	15	36	26	23
Reason for ineligibility					
ADG	4	3	6	6	5
ADG-WDA%	5	0	12	--	--
BSE	17	5	10	15	9
Semen quality	12	4	7	14	7
No semen	2	0	1	0	0
Insufficient scrotal	0	0	0	0	0
Genital warts	1	1	2	1	1
Repro structure	2 (testicle edema)	0	0	0	1 (missing testicle)
Structure/feet	0	2	1	3	7
Temperament	1	1	2	0	1
Injury	0	3	2	2	1
Consignor request	1	0	1	0	0
Mortality	0	0	0	0	0
Lethal genetic defect	1	1	2	0	0

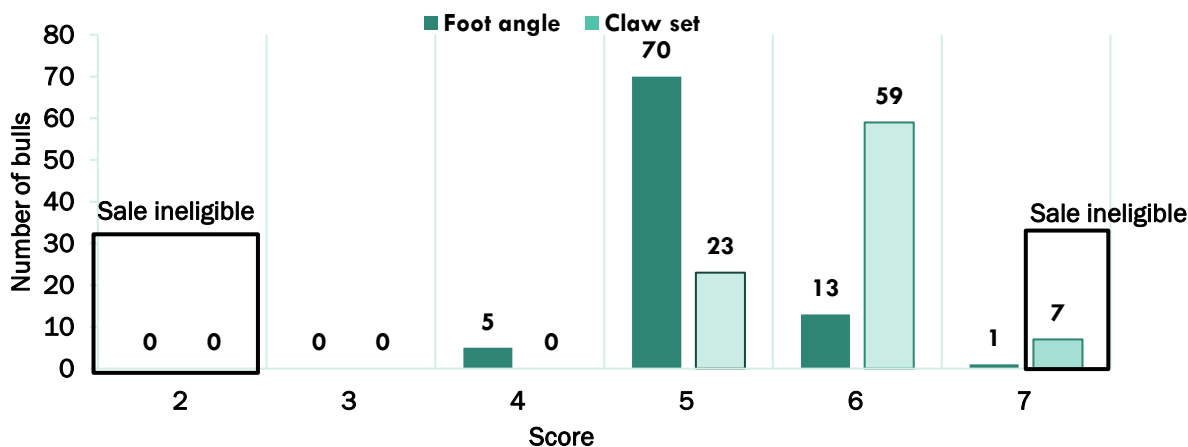
Bulls were scored for foot structure to eliminate bulls from the sale that had a likelihood of future impaired movement and reduced longevity. Bulls were visually screened for extremes in foot angle, claw set, or leg conformation upon delivery to the station. Near the final day of evaluation (d 111) 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 for that trait was scored. The distribution of foot angle and claw set scores are shown in **Figure 3**. At scoring, seven bulls were removed due to claw set. One bull was removed during the test for poor temperament. **Table 6** presents the historic averages for the percentage of sale eligibility by bull birth month.

Sixty-seven qualified bulls were freeze branded with the Bull Evaluation Program brand and fitted. Sale order was determined by the 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

<sup>2</sup> American Angus Association. n.d. Foot score guidelines. Available: <https://www.angus.org/Performance/Documents/footscoreposter.pdf>

when less than 20%], marbling, and ribeye area), and evaluation percentile rank for ADG and WDA (within combined senior and junior bulls).

**Figure 3. MCA-MSU Bull Evaluation Program: Foot angle and claw set score frequency (2022-23)**



**Table 6. MCA-MSU Bull Evaluation Program: Historic sale eligibility by birth month (3-year detail and 10-year average)**

2020-21					2021-22				
B. Month	No.	Out	Eligible	% Eligible	B. Month	No.	Out	Eligible	% Eligible
Sep	3	1	2	67%	Sep	10	3	7	70%
Oct	7	1	6	86%	Oct	3	1	2	67%
Nov	6	3	3	50%	Nov	5	0	5	100%
Dec	7	2	5	71%	Dec	5	2	3	60%
Jan	41	13	28	68%	Jan	33	8	25	76%
Feb	24	7	17	71%	Feb	21	8	13	62%
Mar	12	9	3	25%	Mar	21	4	17	81%
<b>Total</b>	<b>100</b>	<b>36</b>	<b>64</b>	<b>64%</b>	<b>Total</b>	<b>98</b>	<b>26</b>	<b>72</b>	<b>73%</b>

2022-23					10 Year Average (2013-14 to present)				
B. Month	No.	Out	Eligible	% Eligible	B. Month	No.	Out	Eligible	% Eligible
Sep	24	7	17	71%	Sep	66	19	47	71%
Oct	0	0	0		Oct	41	8	33	80%
Nov	2	0	2	100%	Nov	30	7	23	77%
Dec	5	0	5	100%	Dec	58	19	39	67%
Jan	30	6	24	80%	Jan	311	79	232	75%
Feb	16	3	13	81%	Feb	245	65	180	73%
Mar	13	7	6	46%	Mar	172	67	105	61%
<b>Total</b>	<b>90</b>	<b>23</b>	<b>67</b>	<b>74%</b>	<b>Total</b>	<b>941</b>	<b>267</b>	<b>674</b>	<b>72%</b>



## ADVERTISING AND COMMUNICATION

The MCA staff managed advertising in print and online trade publications **Table 7**, and a Facebook campaign on the MCA Facebook account shown in **Table 8**.

**Table 7. MCA-MSU Bull Evaluation Program: Trade publication advertising**

Communication	Issue
West Branch Feeder Cattle Sale, lunch	Oct
MCA Information Exchange	Dec, Jan, Feb
U.P. Ag Connections	Feb, Mar
Michigan Cattlemen's Magazine	Winter/Spring
Michigan Farm News	Feb × 2
Farm World/The Farmers Exchange	Feb, Mar
American Agriculturalist	Feb
Open house/sale post card	Feb
BULLPEN App (See Fig. 5)	Mar
Angus Journal	Dec, Jan, Feb, Mar, Apr

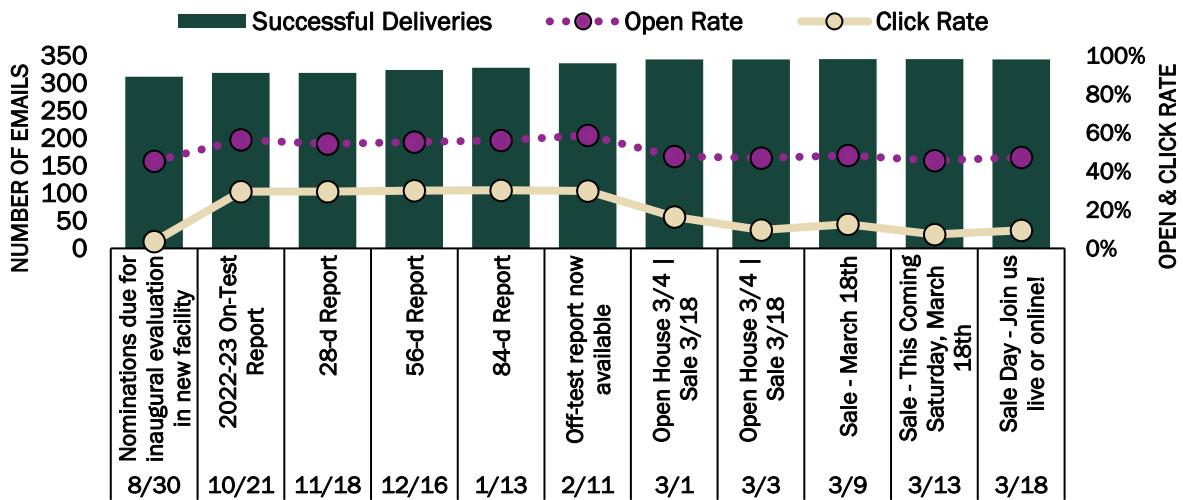
**Table 8. MCA-MSU Bull Evaluation Program: MCA Facebook campaign\***

Caption	Post Date	Reach	Engagement	Likes	Comments	Shares
Nominations	7/19	2788	206	12		9
MSU link nominations	7/27	4980	179	9		15
Nominations a month away	8/4	1948	81	10		6
New facility update	8/24	2538	335	54	1	6
Nominations 1 week	8/26	1599	48	7		6
Nominations due tomorrow	9/1	850	57	12		2
Nominations due today	9/2	414	8	3		1
Delivery day	10/7	5296	1026	84		11
Initial reports	10/29	2609	376	53	1	6
84 day report	1/16	1673	181	33	1	7
112 day report	2/11	2573	289	16		14
Open house facility post	2/26	11465	1031	38		51
Catalog and videos posted	3/1	7504	514	14		33
Sale post	3/8	3187	219	20	1	11
Sale 1 week	3/11	3720	190	20		28
Sale day flags	3/13	6246	172	12		27
Lots and video post	3/15	3063	237	20		15
Sponsors	3/16	2149	109	31		7
Sale post	3/17	857	35	11		3
Sale day video	3/18	635	34	1		4
Thank you	3/19	1593	85	25		3
<b>Total of 21 BEP-focused Facebook Posts:</b>		<b>67,687</b>	<b>5,412</b>	<b>485</b>	<b>4</b>	<b>265</b>

\*As of 4-29-23, 3,200 people follow the Michigan Cattlemen's Assoc. Facebook page

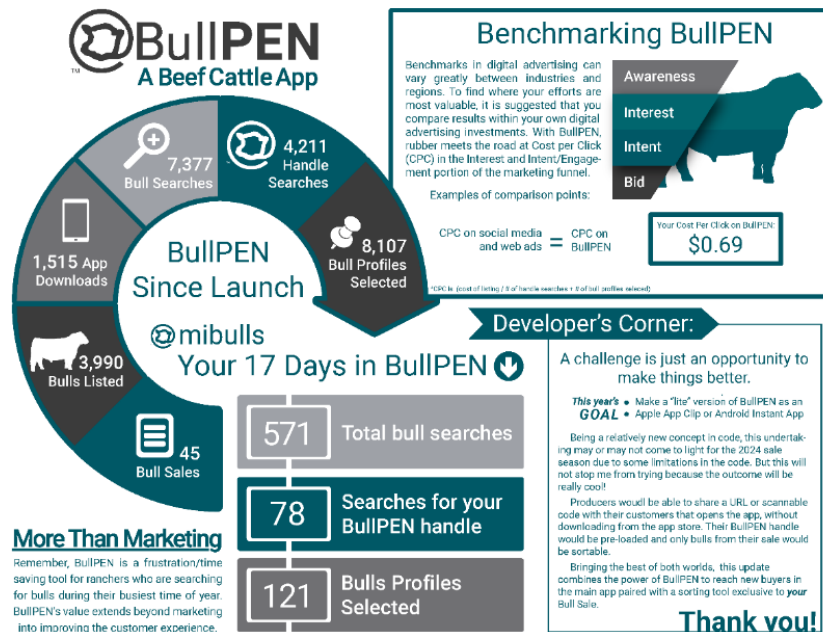
Data reports were published by MSU on MiBulls.com and communicated to buyers via email campaigns using a MailChimp account. **Figure 4** depicts the open and click rate for emails sent during the 2022-23 program. Three weeks prior to the sale, bulls were videoed individually and links to edited videos were published on DVAuction.com. The sale catalog was published on MiBulls.com, and sale data was posted within the BullPEN mobile app for sorting bull data (**Figure 5**).

**Figure 4. MCA-MSU Bull Evaluation Program: Email open and click rates (2022-23)\***



\*As of 5-1-23, the MCA-MSU Bull Evaluation MailChimp account contained 371 contacts.

**Figure 5. MCA-MSU Bull Evaluation Program: Use of BullPEN mobile app (2022-23)\***



## SALE RESULTS

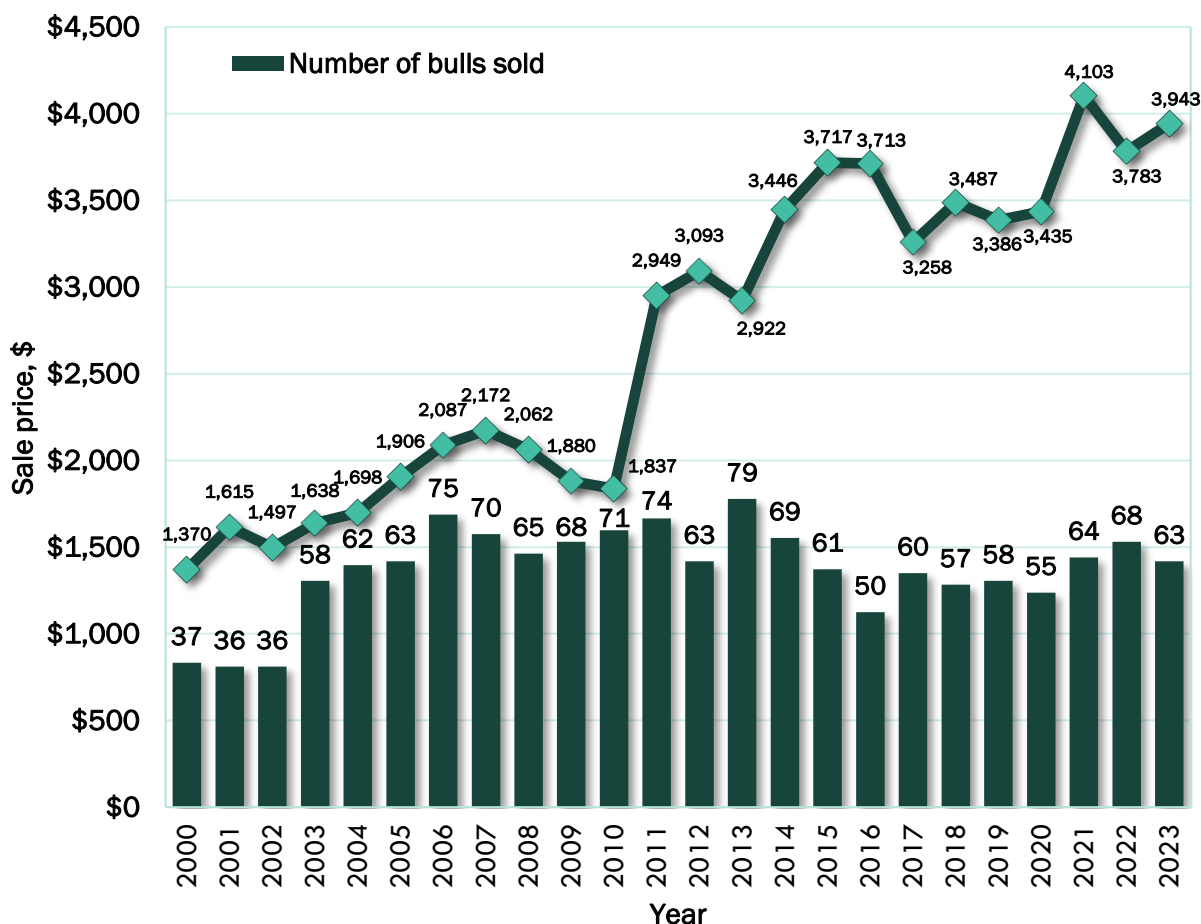
Approximately 70 potential buyers attended an open house on March 4, 2023, to view bulls and visit breeders before the sale. The culmination of the program was the auction of 67 eligible bulls, at the station on March 18, 2023. All pertinent information was published in the sale catalog, including consignor contact information, breed, breed percentage, hide color, horn status, registration number, 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, foot angle, claw set, 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), breed-specific EPD indexes, percentile ranks for each EPD, and a two-generation pedigree. All bulls were sire-verified and had genomically enhanced EPDs.

DVAuction was used to offer an online bidding option to buyers. A minimum floor price of \$2,750 was established, and there were four bulls that did not bring the minimum bid. **Table 9** includes bulls sold and sale averages for bulls by breed. The number of bulls sold, and average sale price is shown in **Figure 6** compared to past sales. **Table 10** provides sale averages and number of bulls sold at regional bull test programs. **Table 11** provides historical details of viewers, bidders, and buyers. **Figure 7** displays the location of bull buyers from the 2022-23 sale.

**Table 9. MCA-MSU Bull Evaluation Program: Bull sale prices by breed (2022-23)**

Breed	Bulls sold	Sale gross	Average
Angus	34	\$136,000	\$4,000.00
Red Angus	4	\$14,250	\$3,562.50
P. Hereford	1	\$3,700	\$3,700.00
Simmental	24	\$94,450	\$3,935.42
<b>Total</b>	<b>63</b>	<b>\$248,400</b>	<b>\$ 3,942.86</b>

**Figure 6. MCA-MSU Bull Evaluation Program: Bulls sold and avg. sale price (2000-2023)**



**Table 10. Regional bull test sale averages (2023)**

Bull test	Sale date	Bulls				Avg. sale price
		Cataloged	Offered	Sold	No sales	
Western Illinois Univ. Bull Test, Macomb	Mar. 10	43	37	31	16%	\$3,445
Pennsylvania Perf. Tested Bull, PA Furnace	Mar. 31	78	78	74	5%	\$4,186
Wisconsin BIA Bull Test, Platteville	Apr. 1	69	69	61	12%	\$4,100
Indiana Bull Eval. Program, Bedford	Apr. 15	94	94	73	22%	\$4,292

**Table 11. MCA-MSU Bull Evaluation Program: Number of bidders and bulls purchased (5-year summary)**

Item	2019	2020	2021	2022	2023
Registered on-site bidders	67	31	99	55	60
New registered on-site bidders	29	12	n/a	n/a	42
Online viewers*	92	235	151	130	161 <sup>†</sup>
Online bids	46	210	89	98	111
Online active bidders	9	30	18	13	19
Bulls sold online	7	28	15	17	26
Total bull buyers	32	48	54	47	46

\*Viewers that were online for more than 10 minutes, prior to 2022, this was more than 5 minutes.

<sup>†</sup>Online viewers were from AL (2), GA(1), IA(6), ID(1), IL(3), IN(4), KS(1), KY(2), MI(106), MN(2), MO(4), MT(1), NC (3), ND(2), NE(8), OH(4), OK(2) SD(2), TN(2), TX(1), VA(1), WI(2); Canada: ON(1).

**Figure 7. MCA-MSU Bull Evaluation Program: Bull buyer location (2022-23)**

