



Bull Evaluation Centre Report

201722 Silversprings Simmental Group #2 (End of Test)

Test Date: **24 Mar 2017** Days on Test: **113**

Centre Manager: **JAMES MCKINLAY**

Start of Test Date: **01 Dec 2016**

Phone #: **519-599-6236**

End of Test Date: **24 Mar 2017**

EMail: **jmckinlay@bmts.com**

Pick Up Date:

Address: **609027 SIDEROAD 12,R.R. #1 , RAVENNA , ON , N0H 2E0**

Ration Statement:

Note: 1. Check the information on your BULL(s) to ensure the pedigree, birth date, tattoo, and weaning data is complete and accurate.

2. For best results clients need to submit complete herd data with complete weaning weights on all their calves to bioTrack, our Herd Evaluation Service. Calves with incomplete herd data will not receive genetic evaluations nor BIO Economic Indexes. If no data is submitted to BIO, then the calves in the bull evaluation centre will be regarded as UNOFFICIAL. Unofficial calves will not receive genetic evaluations, BIO Economic Indexes nor certificates and may not eligible for awards that are offered from time to time.

3. If you have questions on data submission, please contact our office.

A Guide to BIO's Bull and Heifer Evaluation Reports and BIO's Genetic Evaluations

Report Features

- Objectively Compare all animals using our across breed comparisons -ABCs - Allows you to compare all the bulls in the group for their genetics, regardless of their breed. Bulls are listed on the report by the tag number.
- Quickly know where an animal ranks for a trait using the percentile ranking. Our percentile rankings range from 1 (lowest) to 99 (highest) tells you how an animal ranks for the trait you're looking at. All animals are ranked for each trait! The rankings compare all animals evaluated over the past 3 years for that trait.
 - Across breed Percentiles (%AB) allow you to compare purebred, crossbred, and composite animals across breeds.
 - Within breed Percentiles (%WB) allow you to compare purebred animals within its breed.
- Example: A bull or heifer that has a percentile of 99 (99th percentile) is in the top 1% of all animals evaluated for that trait or index; a bull in the 80th percentile is in the top 20%, etc.
- Most current genetic evaluations - The Herd Recording traits (CE, BW, WG, MILK) are updated on the 84-day and End-of-test reports, to reflect the added information of weights taken on test. The End-of-test evaluations use the animal's on-test performance and all related performance data in the database to calculate the ABC and are therefore the most current evaluations in the industry.

Features of BIO's Genetic Evaluations (ABCs) and Economic Indexes

- Genetic Evaluations - the most accurate method to express genetic ability of an animal. They are adjusted for environment and can be used to compare animals across herds and evaluation centres.
- ABC - Across Breed EPD or Comparison - Estimate of how future progeny of an animal are expected to perform in each of the traits. Comparisons can be made within breeds and across breeds. For example, a bull or heifer with a Yearling Gain ABC of +85 will produce progeny that are on average 50 pounds heavier than progeny from a bull with a Yearling Gain ABC of +35.
- Accuracy - Measure of the amount of information used to calculate the ABC. Ranges from 1 (least) to 99 (most). Evaluations based on pedigree information only are noted as 'PE' (pedigree estimate).
- BIO\$: This is an index that considers several traits in determining better bulls when mated to average cows and is aiming at efficient lean meat production for a market focused on AA carcasses between 775 and 900 pounds. Use the BIO\$ index to identify top prospect bulls and then look at specific ABC's within that group for traits that you value in your operation.
- ABCs (Across Breed EPDs) for all animals evaluated by BIO are on a fixed base. The base is a multi-breed average of animals born 1995-1998:

Trait	CE	BW	WG	MILK	PWG	YG	FAT	REA	%IMF	SC	BIO\$
Base	0	0	+30	+15	+20	+50	0	0	0	0	+2000

Report Definitions and Legend

Herd Measurements (BIO believes in Whole Herd Recording)

CE - Calving Ease - The ease or difficulty with which the animal was born. The categories are unassisted (U), easy pull (E), hard pull (H), surgical (S) or malpresentation (M).

BW - Birth weight (lbs) of the animal.

AWW - Adjusted Weaning Weight (lbs) - The on-farm weaning weight of the animal adjusted to 200 days of age. Adjustments are made for age of dam and sex of calf.

WI - Weaning Index - Within-herd index based on adjusted weaning weight. Use to compare calves in the same pre-weaning management group. A minimum of five calves in a management group is required to receive an index. ET indicates an embryo transplant calf.

Test Evaluation Measurements (based on the animal's performance in the evaluation centre)

SOT - Start of Test Weight (lbs)

EOT - End of Test Weight (lbs)

ADG - Average Daily Gain (lbs/day) - The regressed average daily gain during the animal evaluation period. All monthly weighings are used in determining the adg.

WPDA - Weight Per Day of Age (lbs/day) - Weight taken at weigh period divided by days of age and includes birth weight.

HH - Hip Height (inches) - Height of the animal over the hip bones at EOT.

FRAME - Frame Score - A 1 to 10 scale calculated using hip height and age, according to Beef Improvement Federation guidelines.

FAT - Backfat (mm) - Measured ultrasonically between the 12th and 13th ribs (grading site) at the end of the test.

REA & AdjREA - Rib Eye Area (square inches) - Measured ultrasonically between the 12th and 13th ribs (grading site) at the end of the test. The AdjREA is adjusted to 365 days of age.

%IMF & Adj%IMF - Percent Intramuscular Fat (Marbling) - Measured ultrasonically between the 12th and 13th ribs (grading site) at the end of test. NR indicates the animal had too little %IMF to measure. Adj %IMF is adjusted to 365 days.

GRADE - %IMF expressed as marbling grade (A, AA or AAA) - PD indicates practically devoid, which is less than 1.86 %IMF. Animals near the border of a category are shown as a combination of the two categories (i.e. A-AA).

SC & AdjSC - Scrotal Circumference (cm) - End of test measure of scrotal circumference. Indication of the semen producing ability of the bull. 'ABN' indicates abnormal testicles (size, shape, injury) and no measurement is taken. AdjSC is adjusted Scrotal circumference and is adjusted to one year of age.

Genetic Evaluations - Across Breed EPDS (ABCs)

CE - Calving Ease ABC - is a genetic prediction of the increase (+) or decrease (-) in percent unassisted calvings if the bull is mated with heifers that are an average size and have average calving ability.

BW - Birth Weight ABC (lbs) - The effect the animal will have on the birth weight of their calves.

WG - Weaning Gain ABC (lbs) - The ability of the animal's calves to grow from birth to weaning.

MILK - Milk/Mothering ability ABC (lbs of calf at weaning) - The ability of a animal's daughters to provide their calves with milk and mothering ability.

PWG - Post-Weaning Gain ABC (lbs) - Indicates the ability of an animal's calves to grow from weaning to yearling.

YG - Yearling Gain ABC (lbs) - Indicates the ability of a animal's calves to grow from birth to yearling.

FAT - Backfat thickness ABC (mm) - The ability of a animal's progeny to deposit backfat (finishing ability), adjusted to a common age.

REA - Rib Eye Area ABC (square inches) - Predictor of the differences in progeny ribeye area (muscling), adjusted to a common age.

%IMF - Intramuscular Fat ABC (Marbling) - The ability of a animal's progeny to deposit marbling fat, adjusted to a common age.

SC - Scrotal Circumference ABC (cm) - Indicates the ability of a bull to transmit scrotal size to male progeny. It is a partial indicator of daughter's age at puberty.

Bull Evaluation EOT Report

201722 Silversprings Simmental Group #2



Genetic Evaluations (04 Apr 2017)

Tag 0033	Pen	Tattoo	JJMC 3D
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Contact **JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS**
 HC/Breed **1/2 RED ANGUS 15/32 SM 1/32 XX** 519-599-6236
 Birthdate **21Mar2016** Colour
 SireSire **RED SIX MILE GAME FACE 164Y**
 Sire **BBP 20C**
 Dam **ROBSON ACRES WINKA**
 DamSire **ANKONIAN RED CAESAR**

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$						
%ab	90	93	34	85	9	15	57	40	59	40	20						
ABC Acc	5 22	-5.1 52	36 41	29 14	16 45	51 43	.12 49	.07 43	.07 43	.35 62	2495						
%wb																	
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	83	587	89	725	1165	3.74	3.17	50.3	5.6	4	15.0	14.9	1.81	1.80	PD	38.5	38.4

Tag 003D	Pen	Tattoo	RAD 3D
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Contact **JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS**
 HC/Breed **RED ANGUS** 519-599-6236
 Birthdate **30Mar2016** Colour
 SireSire **RED STALBURN RUSTY 4R**
 Sire **RED RAVENNA 12U**
 Dam **LDS 10Y**
 DamSire **RED LJC MISSION STATEMENT P27**

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$						
%ab	97	97	58	93	83	76	79	2	88	68	36						
ABC Acc	7 38	-6.5 59	41 49	32 23	41 51	82 50	.87 53	-.63 49	.50 49	.85 64	2989						
%wb	90	93	57	92	62	63	19	7	49	63	32						
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	85	621	94	745	1155	3.94	3.22	52.5	6.8	6	12.2	12.4	2.98	3.03	A	39.0	39.2

Tag 004D	Pen	Tattoo	RAD 4D
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Contact **JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS**
 HC/Breed **RED ANGUS** 519-599-6236
 Birthdate **30Mar2016** Colour
 SireSire **RED STALBURN RUSTY 4R**
 Sire **RED RAVENNA 12U**
 Dam **LDS 18Y**
 DamSire **LDS 8W**

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$						
%ab	93	93	74	95	99	99	78	22	93	45	96						
ABC Acc	6 34	-4.9 55	46 47	34 23	76 51	122 49	.84 54	-.20 49	.58 49	.44 65	5046						
%wb	77	79	74	95	99	98	16	71	72	32	96						
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	85	621	94	745	1400	5.90	3.90	53.0	7.1	6	14.5	14.7	3.64	3.70	A-AA	37.0	37.2

Tag 027D	Pen	Tattoo	RAD 27D
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Contact **JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS**
 HC/Breed **23/32 RED ANGUS 1/4 SM 1/32 XX 0** 519-599-6236
 Birthdate **13Apr2016** Colour
 SireSire **HOOKS SHEAR FORCE 38K**
 Sire **NLDF YANKEE 319Y**
 Dam **RAD 26T**
 DamSire **RED GP CATALYST 025**

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$						
%ab	98	98	56	99	97	90	89	37	81	12	89						
ABC Acc	8 38	-7.3 61	41 51	39 32	53 53	94 52	1.20 54	.03 50	.42 50	-.44 65	4538						
%wb																	
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	80	580	88	660	1205	4.88	3.49	51.8	6.6	6	14.6	15.1	2.92	3.09	A	35.5	36.2

Tag 029D	Pen	Tattoo	JJMC 29D
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Contact **JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS**
 HC/Breed **1/2 SIMMENTAL 15/32 AR 1/32 XX 0** 519-599-6236
 Birthdate **31Mar2016** Colour
 SireSire **HOOKS SHEAR FORCE 38K**
 Sire **NLDF YANKEE 319Y**
 Dam **JJMC 29W**
 DamSire **RED STALBURN RUSTY 4R**

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$						
%ab	95	94	82	99	84	86	76	24	75	66	66						
ABC Acc	6 38	-5.2 58	48 50	40 32	42 52	90 51	.78 54	-.16 49	.33 49	.82 64	3728						
%wb																	
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	90	662	100	790	1270	4.31	3.55	52.0	6.6	6	13.1	13.2	3.05	3.11	A	40.0	40.3

Bull Evaluation EOT Report

201722 Silversprings Simmental Group #2



Genetic Evaluations (04 Apr 2017)

Tag 034D	Pen	Tattoo	RAD 34D
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Contact JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS
 HC/Breed 1/2 SIMMENTAL 1/2 RED ANGUS 519-599-6236
 Birthdate 04Apr2016 Colour
 SireSire WHEATLAND RED TEDDY 457P
 Sire JJMC 20A
 Dam Red Birchlawn Reba 8
 DamSire LDS 2T

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$	
%ab	98	98	50	95	88	76	75	26	75	85	70	
ABC Acc	8 30	-7.1 56	39 43	34 19	44 46	83 45	.73 47	-.12 41	.31 41	1.27 61	3847	
%wb												
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA
U	85	661	100	780	1250	4.62	3.53	52.5	6.9	7	14.7	15.1

Tag 045D	Pen	Tattoo	RAD 45D
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Contact JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS
 HC/Breed RED ANGUS 519-599-6236
 Birthdate 08Apr2016 Colour
 SireSire RED STALBURN RUSTY 4R
 Sire RED RAVENNA 12U
 Dam LDS 15U
 DamSire RED LJC MISSION STATEMENT P27

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$	
%ab	97	97	86	91	98	97	86	11	91	99	84	
ABC Acc	7 38	-6.6 59	50 50	31 25	56 53	106 52	1.12 57	-.37 52	.54 52	2.29 65	4307	
%wb	93	93	87	90	96	95	45	38	63	99	84	
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA
U	85	621	94	720	1295	4.96	3.70	52.8	7.1	7	13.2	13.6

Tag 049D	Pen	Tattoo	JJMC 49D
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Contact JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS
 HC/Breed SIMMENTAL 519-599-6236
 Birthdate 11Apr2016 Colour
 SireSire WHEATLAND RED TEDDY 457P
 Sire JJMC 20A
 Dam BRF 52W
 DamSire ROBSON ACRES TONKA

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$	
%ab	60	64	97	85	82	95	58	66	50	99	81	
ABC Acc	2 26	-2.0 49	61 37	29 15	41 43	102 40	.13 46	.37 41	.01 41	2.58 61	4202	
%wb	91	93	89	58	78	87	87	55	78	99	81	
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA
U	87	713	108	820	1340	4.65	3.86	52.5	7.0	5	15.2	15.7

Tag 062D	Pen	Tattoo	JJMC 62D
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Contact JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS
 HC/Breed 1/2 RED ANGUS 15/32 SM 1/32 XX 519-599-6236
 Birthdate 21May2016 Colour
 SireSire RED STALBURN RUSTY 4R
 Sire RED RAVENNA 12U
 Dam JJMC 62X
 DamSire SILVER SPRINGS THOMA

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$	
%ab	98	98	97	98	95	98	83	19	84	86	86	
ABC Acc	8 38	-6.9 57	60 48	39 23	50 51	110 50	1.03 53	-.23 48	.46 48	1.30 64	4394	
%wb												
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA
U	87	811	123	790	1310	4.68	4.27	53.5	8.1	8	12.9	14.5

Tag 063D	Pen	Tattoo	RAD 63D
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Contact JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS
 HC/Breed 1/2 SIMMENTAL 1/2 RED ANGUS 519-599-6236
 Birthdate 25Mar2016 Colour
 SireSire WHEATLAND RED TEDDY 457P
 Sire JJMC 20A
 Dam RAD 63Z
 DamSire RED STALBURN RUSTY 4R

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$	
%ab	94	94	94	93	98	98	77	43	80	97	95	
ABC Acc	6 31	-5.3 54	56 42	32 15	56 45	112 44	.82 47	.11 42	.41 42	1.91 61	4949	
%wb												
CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA
U	90	704	106	845	1465	5.53	4.02	53.3	7.1	7	15.8	15.8

The Symbol of Quality for Beef Production

Bull Evaluation EOT Report

201722 Silversprings Simmental Group #2



Genetic Evaluations (04 Apr 2017)

Tag	073D	Pen	Tattoo	JJMC 73D
Contact	JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS			
HC/Breed	SIMMENTAL			519-599-6236
Birthdate	04Apr2016		Colour	
Sire/Sire	WHEATLAND RED TEDDY 457P			
Sire	JJMC 20A			
Dam	RMHL 63Z			
DamSire	REMINGTON RED LABEL HR			

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$							
%ab	42	36	96	94	67	90	64	78	55	95	76							
ABC Acc	1 28	.0 53	58 41	33 14	36 44	94 43	.31 47	.49 41	.04 41	1.70 61	4028							
%wb	78	73	83	78	63	77	95	75	85	87	75							
	CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	93	717	108		830	1325	4.40	3.74	53.3	7.3	6	15.9	16.2	2.54	2.62	PD-A	40.5	40.9

Tag	074D	Pen	Tattoo	RAD 74D
Contact	JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS			
HC/Breed	RED ANGUS			519-599-6236
Birthdate	04Apr2016		Colour	
Sire/Sire	RED BRYLOR BIG ROCK 85T			
Sire	RED BBP ROCKY 7Z			
Dam	RAD 73Y			
DamSire	RED STALBURN RUSTY 4R			

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$							
%ab	93	95	47	73	55	53	76	59	79	27	71							
ABC Acc	6 32	-5.5 55	39 42	26 15	33 47	71 45	.76 50	.29 45	.39 45	.09 63	3866							
%wb	78	86	46	67	26	36	11	99	18	13	67							
	CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	85	611	92		720	1205	4.35	3.74	52.3	6.6	6	17.0	17.4	2.58	2.66	PD-A	36.0	36.4

Tag	085D	Pen	Tattoo	RAD 85D
Contact	JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS			
HC/Breed	P RED ANGUS			519-599-6236
Birthdate	31Mar2016		Colour red	
Sire/Sire	RED LSF RAB COMMITMENT 2792Z			
Sire	RED BENCHMARK COMMITTED 29 14			
Dam	RED BENCHMARK LAKOTA 85 14			
DamSire				

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$							
%ab	81	74	41	49	16	24	86	16	85	23	11							
ABC Acc	4 15	-2.7 45	37 33	22 6	20 39	58 36	1.13 43	-.29 37	.47 37	-.02 58	2101							
%wb	44	36	39	37	3	11	46	54	38	10	8							
	CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	80	609	92		655	1080	3.84	3.02	50.5	5.8	7	14.0	14.2	3.35	3.42	A	36.5	36.8

Tag	101D	Pen	Tattoo	JJMC 101D
Contact	JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS			
HC/Breed	3/4 RED ANGUS 7/32 SM 1/32 XX			519-599-6236
Birthdate	26Mar2016		Colour	
Sire/Sire	RED 6 MILE FULL THROTTLE 171T			
Sire	LFL 23X			
Dam	JJMC 101Z			
DamSire	RAD 26W			

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$							
%ab	77	76	22	94	64	43	66	18	78	23	28							
ABC Acc	4 31	-2.9 56	32 43	33 19	35 47	67 45	.38 50	-.25 45	.37 45	-.03 63	2752							
%wb																		
	CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	90	622	94		740	1280	4.86	3.53	52.5	6.8	5	14.7	14.8	2.70	2.71	PD-A	37.5	37.6

Tag	114D	Pen	Tattoo	JJMC 114D
Contact	JAMES MCKINLAY - SILVERSPRINGS SIMMENTALS			
HC/Breed	1/2 SIMMENTAL 15/32 AR 1/32 XX 0			519-599-6236
Birthdate	04May2016		Colour	
Sire/Sire	HOOKS SHEAR FORCE 38K			
Sire	NLDF YANKEE 319Y			
Dam	JJMC 114Y			
DamSire	RED RAVENNA 12U			

	CE	BW	WG	Milk	PWG	YG	FAT	REA	%IMF	SC	BIO\$							
%ab	98	98	98	99	80	96	82	52	76	36	92							
ABC Acc	8 36	-6.9 55	64 47	44 26	40 50	104 49	1.00 53	.22 48	.34 48	.27 64	4700							
%wb																		
	CE	BW	AWW	WI	SOT	EOT	ADG	WPDA	HH	Frame	Fat	REA	AdjREA	%Imf	Adj%Imf	Grade	SC	AdjSC
U	85	795	120		835	1280	4.10	3.95	53.0	7.6	7	15.1	16.4	3.14	3.54	A	36.5	38.0



Breed Summary Averages

Breed	#	% U	BWT	AWW	SOT	28D	56D	84D	EOT	ADG	WPDA	Hip Height	Frame Score	Back Fat	REA	Adj REA	Adj %IMF	Adj %IMF	Scrotal
RED ANGUS	6	100	85	618	721	843	998	1127	1236	4.64	3.46	52.2	6.7	6	14.3	14.5	3.07	3.14	38.4
SIMMENTAL	2	100	90	715	825	960	1098	1225	1333	4.53	3.80	52.9	7.1	6	15.5	16.0	2.50	2.61	42.0
CROSSBRED	7	100	86	686	775	888	1041	1170	1278	4.55	3.71	52.3	6.9	6	14.5	15.0	3.03	3.24	39.3
Group Averages	15	100	86	662	760	880	1031	1160	1268	4.58	3.62	52.4	6.9	6	14.5	14.9	2.98	3.11	39.3

Provision and Use of Information Produced by BIO As part of the terms and conditions of Beef Improvement Opportunities (BIO) Beef Evaluation Services, it is understood that information provided by BIO including, but not limited to, genetic and carcass evaluations are produced using the very best knowledge available and are pursuant to generally accepted industry standards. The raw data and pedigree used in calculations is provided by the client. The intent of the information provided by BIO is for comparative purposes only for both the animal consignor and buyer. This information is provided for the purpose of general guidance only to beef producers. The purchaser and/or user of this information agrees to hold Beef Improvement Opportunities harmless for any losses or damages that may be incurred as a result of receipt of and/or reliance upon this general comparative information. This clause shall be a complete defense to any claim brought by the purchaser and/or user in relation to such services.