CSA Genetic Evaluation

Contents

Breed Average

	CE	BW	WW	YW	MCE	Milk	MWW	STAY	DOC	CWT	REA	FAT	MARB	API	TI
Current	7.7	3.6	76.8	111.5	4.1	26.0	64.1	15.2	10.6	25.4	0.87	-0.100	-0.05	110.4	70.9
Sires	7.8	3.5	75.8	109.8	4.1	26.2	63.9	14.7	10.4	24.7	0.86	-0.100	-0.05	109.1	70.2
Dams	6.7	4.0	74.2	107.0	3.7	26.0	62.9	15.5	10.0	23.3	0.84	-0.101	-0.05	107.8	68.6

Current Population – all calves born in the last 2 years (2022-2023)

Active Sire – any sire with a calf reported in the last 2 years (2022-2023)

Active Dam – any dam with a calf reported in the last 2 years (2022-2023)

Percentiles

Percentiles show where an animal stands within the Simmental population. The following percentiles are based on CSA current calves (2022-2023).

PCTL	CE	BW	WW	YW	MCE	Milk	MWW	STAY	DOC	CWT	REA	FAT	MARB	API	TI
Avg	**7.7**	**3.6**	**76.8**	**111.5**	**4.1**	**26.0**	**64.1**	**15.2**	**10.6**	**25.4**	**0.87**	**-0.100**	**-0.05**	**110.4**	**65.5**
Min	-7.4	-6.9	31.8	36.2	-10.6	5.2	33.0	1.8	-16.5	-19.5	-0.10	-0.169	-0.54	53.0	36.8
Max	22.8	14.1	119.9	175.9	14.6	47.9	92.4	27.1	25.6	70.4	1.56	0.048	0.79	187.4	100.9
SD	3.59	2.04	9.20	15.83	2.78	6.12	7.04	2.65	2.86	8.96	0.151	0.0220	0.109	11.67	4.99
1	16.4	-1.6	99.7	149.3	10.5	39.7	80.4	21.2	17.1	47.2	1.22	-0.143	0.27	140.1	86.4
2	15.3	-0.9	96.8	145.1	9.7	38.6	78.5	20.5	16.2	44.4	1.17	-0.139	0.22	136.3	84.4
3	14.6	-0.4	95.0	142.1	9.2	37.9	77.3	20.0	15.6	42.7	1.14	-0.137	0.18	133.9	83.1
4	14.1	-0.1	93.6	140.0	8.8	37.3	76.5	19.7	15.2	41.5	1.12	-0.135	0.16	132.1	82.1
5	13.7	0.1	92.5	138.4	8.5	36.8	75.8	19.4	14.9	40.4	1.10	-0.133	0.14	130.5	81.2
10	12.3	1.0	88.8	132.3	7.5	34.9	73.3	18.5	13.9	36.9	1.05	-0.127	0.09	125.4	78.6
15	11.4	1.5	86.2	128.1	6.9	33.4	71.6	17.9	13.3	34.6	1.01	-0.123	0.05	122.3	76.9
20	10.6	1.9	84.3	124.8	6.3	31.9	70.2	17.4	12.8	32.8	0.99	-0.119	0.03	119.8	75.6
25	10.0	2.3	82.7	121.9	5.9	30.4	69.0	17.0	12.4	31.2	0.96	-0.115	0.01	117.8	74.5
30	9.5	2.6	81.3	119.5	5.5	29.0	67.9	16.6	12.0	29.9	0.94	-0.111	0.00	116.0	73.6
35	9.0	2.9	80.0	117.2	5.2	27.8	66.8	16.3	11.6	28.6	0.92	-0.107	-0.02	114.4	72.8
40	8.5	3.2	78.8	115.1	4.8	26.7	65.9	15.9	11.3	27.4	0.90	-0.104	-0.03	112.8	72.0
45	8.1	3.4	77.6	113.0	4.5	25.8	64.9	15.6	11.0	26.3	0.89	-0.101	-0.05	111.4	71.2
50	7.6	3.7	76.5	111.0	4.2	25.0	64.0	15.3	10.7	25.2	0.87	-0.099	-0.06	110.0	70.5
55	7.2	3.9	75.4	109.0	3.8	24.3	63.1	15.0	10.3	24.1	0.85	-0.097	-0.07	108.5	69.8
60	6.8	4.1	74.3	107.0	3.5	23.5	62.1	14.7	10.0	22.9	0.83	-0.094	-0.08	107.2	69.1
65	6.3	4.4	73.1	105.0	3.1	22.8	61.2	14.3	9.7	21.7	0.82	-0.092	-0.10	105.7	68.4
70	5.8	4.7	71.9	103.0	2.7	22.2	60.2	13.9	9.3	20.5	0.80	-0.090	-0.11	104.2	67.7
75	5.3	4.9	70.6	100.7	2.3	21.5	59.2	13.5	8.9	19.3	0.77	-0.087	-0.12	102.6	66.9
80	4.7	5.3	69.2	98.2	1.8	20.7	58.1	13.1	8.4	17.8	0.75	-0.084	-0.14	100.8	66.1
85	4.0	5.6	67.5	95.3	1.3	19.8	56.7	12.5	7.8	16.2	0.72	-0.081	-0.15	98.8	65.1
90	3.2	6.1	65.4	91.7	0.5	18.7	55.1	11.8	7.1	14.1	0.68	-0.076	-0.18	96.2	63.9
95	1.9	6.8	62.2	86.2	-0.6	17.1	52.8	10.7	5.9	11.0	0.62	-0.066	-0.21	92.2	62.0
Num	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422	83,422

Statistics from the Dec 27, 2023 BOLT Evaluation

For Canadian Users of Simmental Genetics

The BOLT genetic evaluation was conducted by ASA and uses a North American multi-breed dataset that includes data from Canadian Simmental, American Simmental, American Red Angus, Canadian Angus and American Gelbvieh, among other breeds. Evaluation results for most traits are directly comparable between participating breeds. The evaluation represents over 21 million animals.

Evaluation Highlights

The evaluation was conducted using the BOLT (BioMetric Open Language Tool) software that directly combines pedigree, performance and DNA information on all available animals. The evaluation is conducted weekly and breed averages and percentiles are updated each week. While they will change very little overall, individual animals may change as they add data or DNA information, which is updated in each weekly evaluation. Breed averages may appear slightly different, so it is important to familiarize yourself with the new results, and to examine the percentile rank information that shows where the animal fits within the Canadian Simmental population for the trait of interest.

The new evaluation includes updated methodologies for both growth and carcass evaluations, including new breed adjustments and improved handling of external EPD. Users may notice some differences in EPD of individual animals, however the correlations between the previous evaluation and this one little reranking of animals.

Accuracy values are calculated directly, rather than estimated. This provides an accurate reflection of the actual information contained within the EPD for the animal of interest and is thus a much more effective risk management tool.

Both an All-Purpose Index (API) and a Terminal Index (TI) are included in the evaluation results. Both API and TI are designed to summarize EPD information for commercial users of Simmental genetics. It is important when looking at a selection index that it describes a similar situation to that in which the genetics are being used. With each index, a higher value indicates animals that are more suitable for the scenario described. As well, it is important to consider other factors as well such as conformation, or specific EPD traits. For example, two bulls may have identical API values, however if it is known that the sire is to be used on replacement heifers, you may wish to put additional emphasis on calving ease.

API – The API (All Purpose Index) is used to rank animals based on their relative merit for a situation where Simmental sires are used on an Angus based cowherd. Replacement females are retained into the herd from the calf crop and the remaining calves are fed and sold on a value based marketing grid that rewards carcass grade and yield.

TI – The TI (Terminal Index) ranks animals based on their relative genetic merit for a situation in which Simmental sires are mated to a mature Angus cow herd. All calves are placed on feed and sold on a value based marketing grid that rewards carcass grade and yield.

Other changes include the addition of new data as contributed by CSA members, as well as membership from other contributing breed associations.

Statistics from the Dec 27, 2023 BOLT Evaluation

Trait Abbreviations

Abbrev.	Description	Units
CE	Calving Ease	% Unassisted
BW	Birth Weight	Pounds
WW	Weaning Weight	Pounds
PWG	Post-Weaning Gain	Pounds
YW	Yearling Weight (WW + PWG)	Pounds
MCE	Total Maternal Calving Ease	% Unassisted
BWM	Birth Weight Maternal	Pounds
Milk	Milk	Pounds
MWW	Maternal Weaning Weight	Pounds
Stay	Stayability	% Probability
Doc	Docility	% Probability
CWT	Carcass Weight	Pounds
REA	Carcass Rib-Eye Area	Square Inches
Fat	Carcass Fat Thickness	Inches
Marb	Carcass Marbling	Marbling Score Units
API	All Purpose Index	Index Units
TI	Terminal Index	Index Units

Accuracy and Possible Change

Every EPD is presented with an associated accuracy value. Accuracy values reflect the amount of information available on the animal and it relatives for use in genetic evaluation. As we obtain and use more information in evaluating an animal's genetic merit, the accuracy value will increase. Accuracy values can range from 0.00 and 1.00 with a higher value representing greater accuracy.

Because accuracy indicates available information, they are extremely valuable as a risk management tool. The higher the accuracy the more certain we are of an animal's genetic merit and thus, the less risk there is in using the animal. The table shows the possible change (plus or minus) in the EPD of an animal, based on its' accuracy. Any EPD changes are expected to fall within this range (EPD plus and minus the possible change) 95% of the time.

Acc	CE	BW	WW	YW	MCE	Milk	MWW	Stay	CW	REA	Fat	Marb
0.00	7.8	3.0	16.3	25.7	7.9	11.9	12.1	7.1	19.3	0.43	0.04	0.26
0.10	7.0	2.7	14.7	23.1	7.1	10.7	10.9	6.4	17.4	0.39	0.04	0.23
0.20	6.2	2.4	13.0	20.6	6.3	9.5	9.7	5.7	15.4	0.34	0.03	0.21
0.30	5.4	2.1	11.4	18.0	5.5	8.3	8.5	4.9	13.5	0.30	0.03	0.18
0.40	4.7	1.8	9.8	15.4	4.7	7.1	7.3	4.2	11.6	0.26	0.02	0.16
0.50	3.9	1.5	8.2	12.9	3.9	6.0	6.1	3.5	9.7	0.22	0.02	0.13
0.60	3.1	1.2	6.5	10.3	3.1	4.8	4.8	2.8	7.7	0.17	0.02	0.10
0.70	2.3	0.9	4.9	7.7	2.4	3.6	3.6	2.1	5.8	0.13	0.01	0.08
0.80	1.6	0.6	3.3	5.1	1.6	2.4	2.4	1.4	3.9	0.09	0.01	0.05
0.90	0.8	0.3	1.6	2.6	0.8	1.2	1.2	0.7	1.9	0.04	0.00	0.03
1.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00

Statistics from the Dec 27, 2023 BOLT Evaluation

EPDs are directly comparable, regardless of the accuracy, and they are also the most reliable reflection of an animal's genetic merit. Accuracies, simply reflect potential risk.
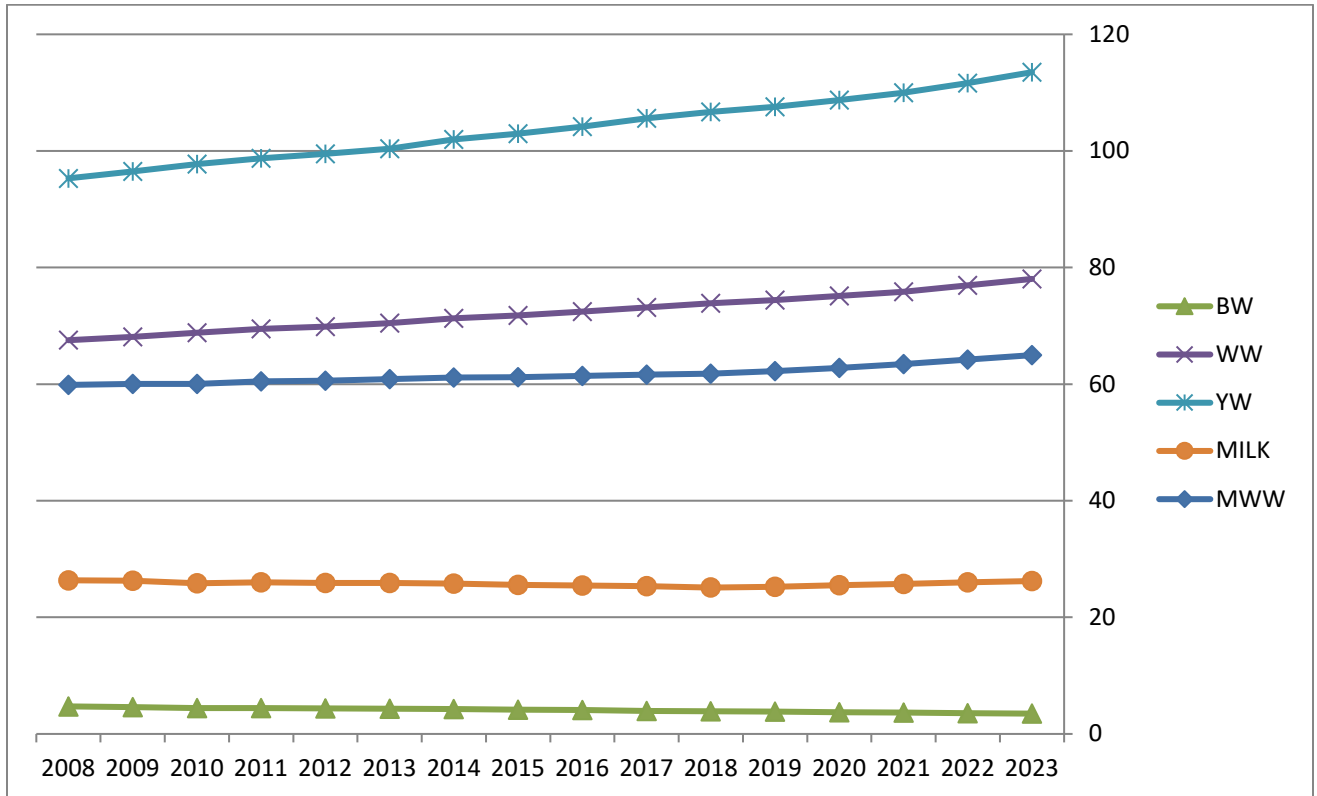
Genetic Trend

Year	CE	BW	WW	YW	MCE	Milk	MWW	Stay	CWT	REA	Fat	Marb	API	TI
2023	8.0	3.5	78.0	113.5	4.3	26.2	65.0	15.3	26.2	0.88	-0.100	-0.05	111.7	71.8
2022	7.7	3.6	76.9	111.6	4.1	26.0	64.2	15.2	25.4	0.87	-0.100	-0.05	110.6	71.0
2021	7.5	3.7	75.9	110.0	3.9	25.8	63.4	15.1	24.8	0.86	-0.100	-0.05	109.4	70.2
2020	7.4	3.7	75.1	108.7	3.9	25.5	62.8	15.0	24.3	0.85	-0.099	-0.05	108.6	69.6
2019	7.1	3.8	74.4	107.6	3.8	25.3	62.2	15.0	23.9	0.84	-0.099	-0.05	107.6	68.9
2018	7.0	3.9	73.9	106.7	3.7	25.1	61.8	15.0	23.5	0.84	-0.100	-0.06	106.7	68.3
2017	6.8	4.0	73.1	105.6	3.6	25.3	61.6	15.0	23.0	0.83	-0.100	-0.05	106.5	67.9
2016	6.4	4.1	72.4	104.2	3.5	25.5	61.4	15.1	22.1	0.82	-0.101	-0.05	105.6	67.2
2015	6.3	4.2	71.8	103.0	3.5	25.6	61.2	15.2	21.5	0.81	-0.102	-0.05	105.3	66.8
2014	6.0	4.3	71.3	102.0	3.3	25.8	61.2	15.3	21.1	0.81	-0.103	-0.05	104.8	66.3
2013	5.8	4.3	70.5	100.4	3.3	25.9	60.9	15.4	20.5	0.80	-0.103	-0.05	104.4	65.8
2012	5.7	4.4	69.9	99.5	3.4	25.9	60.6	15.2	20.2	0.79	-0.104	-0.04	103.8	65.5

Calving Ease Trend

Statistics from the Dec 27, 2023 BOLT Evaluation
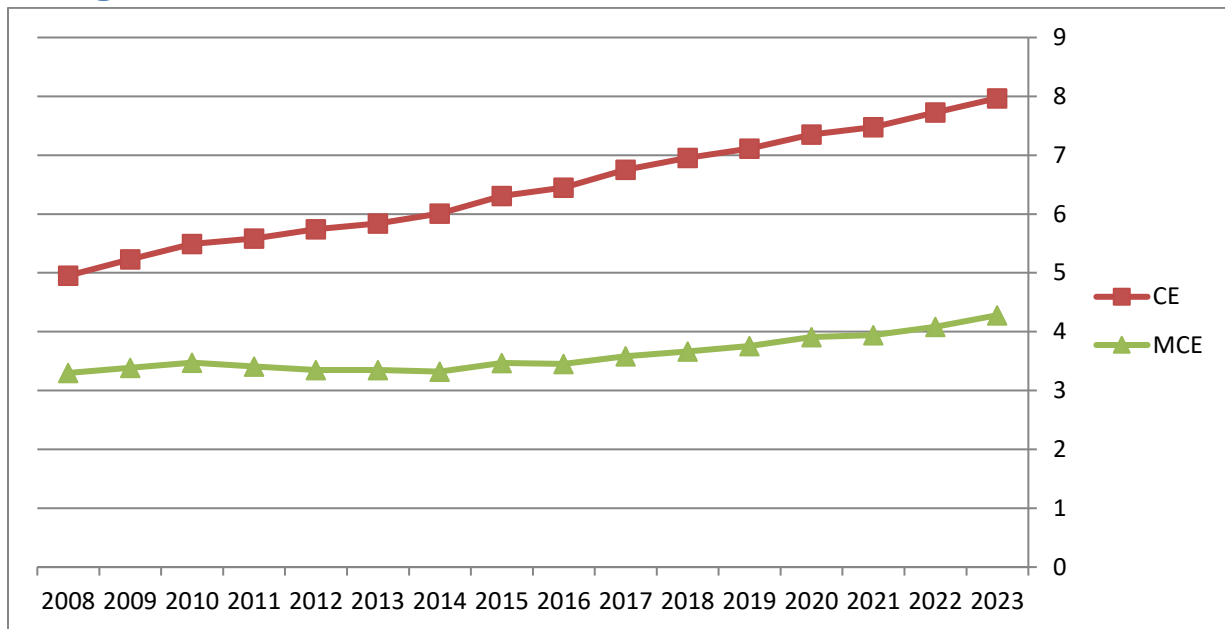
Growth Trend

Carcass Trend

Statistics from the Dec 27, 2023 BOLT Evaluation
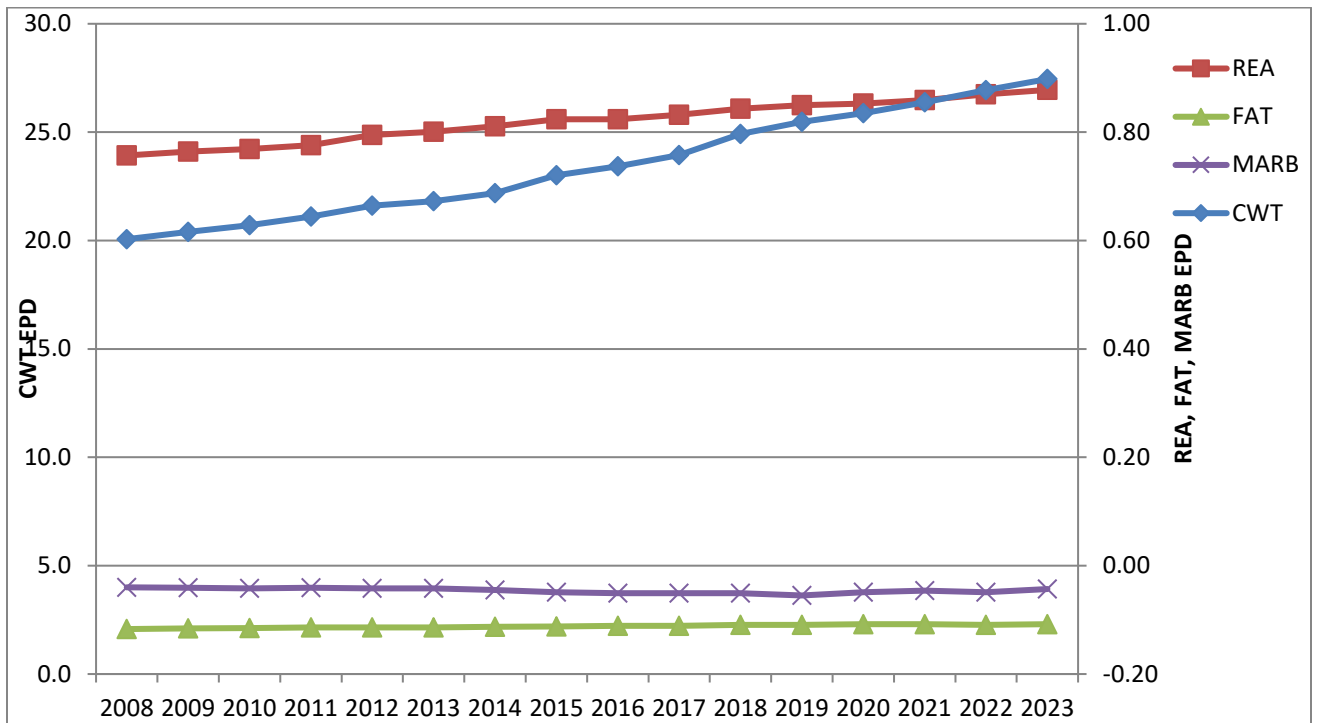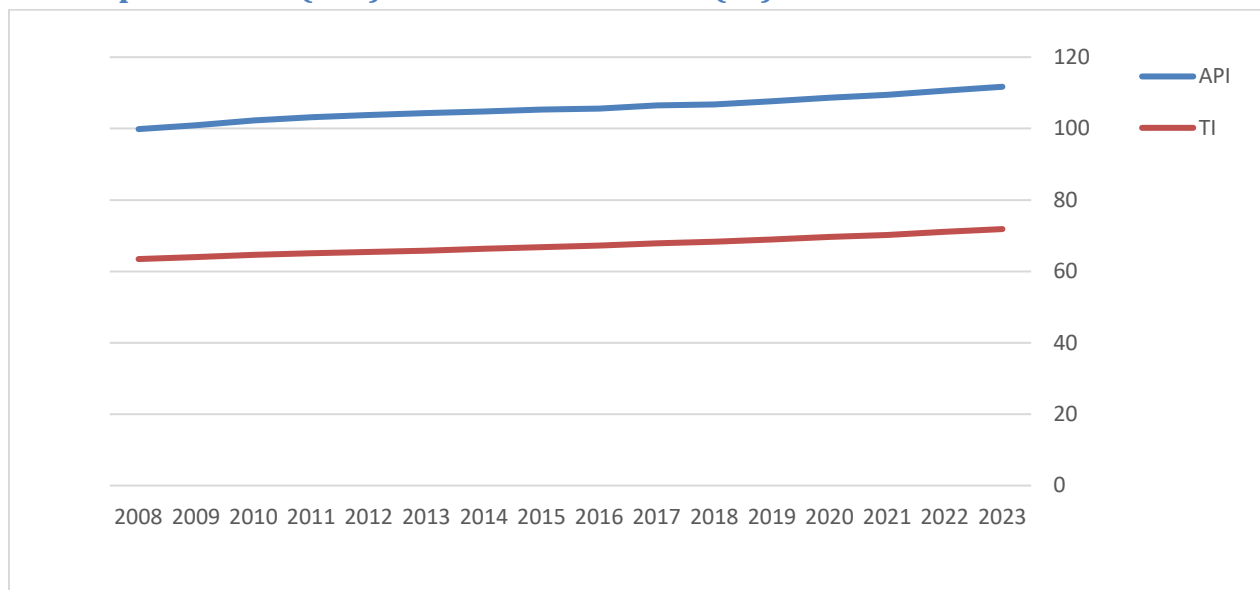
All Purpose Index (API) and Terminal Index (TI) Trend

Terms

Accuracy (ACC) – a measure of certainty regarding the genetic merit of an animal. Accuracy values are calculated for each EPD according to Beef Improvement Federation (BIF) guidelines and reported as a decimal number between zero and one. Larger values indicate greater accuracy.

Active Dam – a dam that has had a calf reported in the last 2 years.

Active Sire – A bull that has had a calf reported in the last 2 years.

API – All Purpose Index – The API ranks animals based on their relative genetic contribution to a commercial production system using Angus based cows, where offspring are kept for replacement females and all other non-replacement offspring are fed to finish and sold on a value based marketing grid.

Birth Weight – Calf weight at birth adjusted to a mature dam equivalent. Expected progeny performance is reported in pounds. The EPD value predicts the difference in average birth weight of a bull's calves, compared to calves of all other bulls evaluated. When comparing the birth weight EPDs of two sires, the larger EPD indicates a heavier average birth weight for calves sired by this bull.

Calving Ease – The ease with which a bull's calves are born to first calf heifers. A first calf heifer is defined as a female calving for the first time at 33 months of age or less. EPDs are reported as the expected difference in unassisted calvings. When comparing calving ease EPDs of two sires, the larger EPD indicates a higher percent of unassisted births for calves sired by this bull.

Carcass Weight – The hot carcass weight of a bull's progeny. Expected progeny performance is reported in pounds and adjusted to a slaughter age of 475 days. The EPD predicts the difference in average carcass weight of a bull's progeny, compared to progeny of all other bulls evaluated. A positive value indicates heavier than average carcass weights, while a negative value (-) indicates lighter than average carcass weights.

Current Population – all calves born in the last 2 years.

Docility – The docility of a calf at weaning. The EPD predicts the difference in the probability of a sire's calves scoring a 1 or 2 at weaning (very quiet/quiet). When comparing EPD a higher EPD represents calves that are expected to have a quieter disposition at weaning.

Expected Progeny Difference (EPD) – the expected difference in performance of an animal's progeny when compared to the average progeny performance of all evaluated animals. The EPD is a prediction of the animal's breeding value or its' genetic value as a parent.

Fat Thickness – The external fat thickness of a bull's progeny. Expected progeny performance is reported in inches and is adjusted to a slaughter age of 475 days. The EPD predicts the difference in external fat thickness of a

bull's progeny, compared to the progeny of all other bulls evaluated. A positive value indicates thicker than average fat cover compared to the progeny of other bulls evaluated, while a negative (-) value indicates less external fat cover.

Genetic Correlation – Correlations between two traits that arise because the same genes affect both traits. When two traits are positively correlated (e.g. weaning and yearling weight) selection for an increase in one trait, will result in an increase in the other trait. When two traits are negatively correlated (e.g. birth weight and calving ease) selection for an increase in one trait will result in a decrease in the other trait.

Heritability – The proportion of the variation observed in a trait that is due to heredity and is transmitted to offspring (e.g. additive gene action). Heritability varies from zero to one. The higher the heritability of a trait, the more rapid should be the response to selection.

Marbling Score – A subjective evaluation of the amount and distribution of intramuscular fat. Degree of marbling is evaluated in the rib-eye muscle between the 12th and 13th rib and is a major factor in determining USDA quality grade. Marbling scores range from 1 (devoid) to 10 (abundant). Expected progeny performance is reported in tenths of a marbling score and adjusted to slaughter age of 475 days. The EPD value predicts the difference in average marbling score of an animal's progeny compared to progeny of all other evaluated bulls. A positive value indicates higher than average marbling scores, while a negative value (-) indicates lower than average scores.

Maternal Calving Ease – The ease with which a sire's daughters calve as first calf heifers. A first calf heifer is defined as a female calving for the first time at 33 months of age or less. Expected progeny differences are reported as the difference in % unassisted calvings. When comparing the maternal calving ease EPDs of two sires, the larger EPD indicates a higher percentage of unassisted births for calves born to this sire's daughters. Maternal Calving Ease = ½ of the CE EPD + Maternal Calving Ease.

Maternal Milk – The maternal ability of an animal's daughters. Expected progeny performance is reported in pounds of calf weaning weight. The EPD value predicts the difference (due to maternal ability) in average 205-day weight of an animal's daughters calves, compared to calves of daughters of all other evaluated animals. When comparing the maternal milk EPDs of two sires, the larger maternal milk EPD indicates heavier average weaning weights due to the daughters' greater maternal ability.

Maternal Weaning Weight – The weaning weight of an animal's daughters' calves. Expected progeny performance is reported in pounds. The EPD value predicts the difference in average 205-day weight of an animal's daughters' calves compared to calves from daughters of all other animals evaluated. The evaluation reflects both the maternal ability of an animal's daughters and the growth potential of their calves. When comparing maternal weaning weight EPDs of two sires, the larger maternal weaning weight EPD indicates heavier weights due to daughters' ability to produce heavier calves.

Percentile Rank – An indication of where an animal ranks for a particular trait in relation to other animals in the evaluation. For example, a percentile rank of 10% indicates that the sire lies in the top 10% of the breed for that particular trait. If a bull has a percentile rank of 90%, this indicates that the sire lies in the top 90% of the breed.

Stayability – the probability that a sire's daughters will remain in the cow herd until at least 6 years of age, given that they become a dam. A higher EPD indicates a greater likelihood that daughters of a bull will remain in the cowherd.

TI – Terminal Index – The TI ranks animals based on their relative genetic contribution to a commercial production system where sires are mated to commercial Angus based mature cows, and all calves are fed to finish and sold on a value based marketing grid.

Weaning Weight – Calf weight taken between 160 and 250 days of age and adjusted to 205 days of age and a mature dam equivalent. Expected progeny performance is reported in pounds. The EPD value predicts the difference in average 205-day weight of an animal's calves compared to calves of all other animals evaluated. When comparing the weaning weight EPDs of two sires, the larger EPD indicates a heavier average weaning weight for calves sired by this bull.

Yearling Weight – Weight taken between 330 and 440 days of age and adjusted to 365 days of age and a mature dam equivalent. Expected progeny performance is reported in pounds. The EPD value predicts the difference in average 365-day weight of an animal's progeny, compared to the progeny of all other animals evaluated. When comparing the yearling weight EPDs of two sires, the larger EPD indicates a heavier average yearling weight for calves sired by this bull.

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Additional Services

The CSA works hard to provide genetic evaluation services to the membership. As part of this effort several services are available to members and their customers.

Users of Simmental genetics are encouraged to use the internet based tools at: http://search.simmental.com. There are various options available including EPD and individual animal searches.

The CSA also publishes a sire summary that lists active sires in the breed and their respective EPD. The sire summary is available at www.simmental.com.

Fullblood percentile reports are also available on request from the CSA office. These reports provide fullblood breeders with a tool to compare their cattle within the Canadian fullblood population.

EPD reports are also routinely furnished to THE members at weaning and yearling and sales agencies upon request. Members on the on-line system can access their most current EPD at any time. http://online.simmental.com

With the release of the BOLT system, data is transmitted to the evaluation weekly and new results are loaded weekly. This means that averages and percentiles are subject to ongoing change. Please use the CSA website for the most up to date and accurate averages and percentile rank information.

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