BULLS OF SUPERIOR GENETIC QUALITY

WHAT IS A BULL OF SUPERIOR GENETIC QUALITY?

To be considered of superior genetic quality, a bull must be purebred and have a Canadian registration certificate. It must also test negative for BVD immunotolerance by immunofluorescence and be identified using a chip tag affixed to one of the animal's ears and a bar code tag to the animal's other ear, in accordance with the *Regulation respecting the identification and traceability of certain animals*. Both tags must bear the same number. Also, all bulls must have a post-weaning weight test and have an adjusted yearling scrotal circumference measurement equal or superior to the minimum threshold for their breed.

The bull must also have evaluation results equal or superior to the value established for those of its peers for station tests, home tests or for Expected Progeny Difference (EPD).

BULLS EVALUATED AT A TEST STATION IN QUÉBEC

Bulls from complete groups whose indexes have been published and which have met the minimum threshold requirements shall automatically be recognized as being of superior genetic quality.

Traits	Minimum in-station threshold
Global value (combined index) (1)	96
Gain index	91
Weight per day of age index	91
Adjusted yearling scrotal circumference (2)	Breed threshold
Conformation (3)	
➢ muscling (score)	4
➢ feet and forelegs (score)	4
➢ feet and hind legs (score)	4

(1) Bulls with a global value of less than 91 cannot obtain an attestation from any source.

(2) A bull disqualified only by the adjusted scrotal circumference could obtain an attestation with the station data if the re-measurement of the scrotal circumference is qualifying and done before 15 months of age.

(3) The highest score is 9.5; bulls with a score of less than 4 for a conformation trait cannot obtain an attestation from any source.

At stations, the owner or the co-owner of bulls having an error or not conforming pedigree will have a memo in their file for a period of 36 months. If a second pedigree is in error or not conforming and there is an overlapping period between the two memos, the producer will be required to provide DNA tests for all bulls registered in stations and for all requests for an attestation of superior genetic. This obligation will apply as long as a minimum of two memos are overlapping.

BULLS EVALUATED ON HOME TEST

When EPDs are available, minimum accuracy shall be required for a trait to be considered. According to the source, if the base of the EPD is different from zero, one would calculate the net EPDs for the subject by subtracting from the respective EPD the corresponding average EPDs for the calves within the breed. In addition to this calculation, no trait shall have a net value equal to or less than the disqualification established thresholds, refer to the table below. These thresholds apply at all times, regardless of the version used.

- **After these conditions have been met, for animals evaluated with the non supervised version of the program or by breed evaluation, only the EPDs for birth-weaning and for milk will be used for qualification of the bull, and both these traits must be improving. The animals registered on the supervised version can be also attested by these two traits.**

- **A bull evaluated on the supervised version of the Programme d'analyse des troupeaux de boucherie du Québec (PATBQ) which has two of four direct improving traits shall obtain an attestation. A bull with an EPD for birth weight or for direct calving ease and at least one of the two maternal traits (maternal milk and maternal calving ease), provided that these are improving traits, shall obtain an attestation.**

TRAITS	MINIMUM ACCURACY		Minimum thresholds for EPDs (2)	Net EPD to be considered improving (3)
	Canadian method	American method (1)		
Direct traits:				
Birth weight	35%	20%	----	1 kg and -
Birth to weaning gain	35%	20%	< or = - 4 kg	0 and +
Post-weaning gain	35%	20%	< or = - 4 kg	0 and +
Direct calving ease	20%	11%	< or = - 7 % (4)	0 and +
Maternal traits:				
Maternal milk	20% (5)	11%	< or = - 5 kg	0 and +
Maternal calving ease	20%	11%	----	0 and +

<: less than

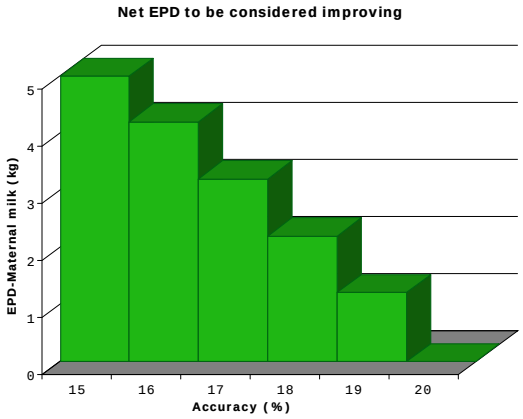
(1) Accuracy levels for the American method correspond to those of the Canadian method.

(2) Minimum thresholds are those below which a bull would not receive an attestation even though requirements as to the number of EPDs were met. These thresholds apply at all times, regardless of the version used.

(3) Net EPD in relation to the breed average required to be considered improving.

(4) This value applies to PATBQ calving ease. Otherwise, a corresponding value is established if necessary.

(5) A bull with accuracy below the threshold of 20%, will be considered improving in the case where as for each 1% missing accuracy will be compensated by 1 kg of additional EPD. This compensation will be applied only for a decrease in accuracy to 15%. For a better comprehension, please consult the diagram below.



The normal correspondence for the measurement unit (lb) and the American accuracy calculation method would apply by respecting the same principal level. This change permits promising bulls to compensate for the lack of accuracy by higher performance level.

- For bulls active on PATBQ, EPD breed averages are equal to zero.

Bulls which qualify in the top 20% for the post-weaning gain index are qualified for superior genetic. Individuals evaluated for their post-weaning gain index must be part of a group of ten or more bulls of the same breed. This approach is independent of the qualification base on the EPD.

BREED EVALUATIONS IN QUÉBEC AND INDIVIDUALS EVALUATED OUTSIDE QUÉBEC

Operations active on PATBQ that use the evaluation system of their Canadian breed association may use either breed or PATBQ data.

Bulls from herds that are not active on PATBQ must, in addition to meeting the above requirements, display at least one trait with an EPD ranked in the upper 20% for their breed for which minimum accuracy is achieved.

EMBRYOS

When EPDs are used to qualify embryos, the embryos may receive an attestation of genetic superiority without EPD accuracy, until they are 2 years old, provided they meet the conditions described above.

BULLS USED FOR ARTIFICIAL INSEMINATION

The semen of pure-bred bulls with a Canadian registration certificate shall be recognized as genetically superior. The semen provider or the breed association must identify the bulls to register in the PATBQ bull data bank.

BULLS EVALUATED UNDER THE SUPERVISED VERSION OF PATBQ

Bulls from a herd active on the supervised version of PATBQ and that qualify by virtue of their PATBQ EPD or post-weaning gain index or that are in a Québec test

station shall be issued a “gold” attestation with the mention "supervised," and the others, a blue attestation.

SCROTAL CIRCUMFERENCE

Young bulls must have had the scrotal circumference measurement taken between the age of 10 months (304 days) to 15 months (456 days) by a veterinarian using a Reliabull tape measure and have an adjusted yearling scrotal circumference equal or superior to that of the breed threshold to be eligible for an attestation. Another on-farm measurement under the same conditions is permitted.

BREED STANDARD FOR PRE-WEANING AVERAGE DAILY GAIN (ADG) AND ADJUSTED YEARLING SCROTAL CIRCUMFERENCE

Breed	Adjusted ADG (kg/d)	Yearling threshold (cm)
Angus	0.92	32
Blonde d’Aquitaine	0.92	29
Charolais	1.10	32
Gelbvieh	0.92	31
Hereford	0.92	31
Highland	0.72	29
Limousin	0.92	30
Maine-Anjou	0.92	32
Salers	0.92	30
Shorthorn	0.92	31
Simmental	1.10	32
Other breeds	0.92	29

Note 1: A bull of at least 2 years old that qualifies according to one of the recognized methods (EPD or post-weaning gain index) is not required to have an adjusted ADG, post-weaning weighing or scrotal circumference measurement.

Note 2: Adjusted ADG is equal to real ADG for progeny if born and raised as a single from adult cows.

PROCEDURES FOR NATURAL SERVICE BULLS, EXCEPT BULLS EVALUATED AT GENETIC EVALUATION STATIONS IN QUÉBEC

The producer should provide the MAPAQ adviser with the following:

- the Canadian registration certificate;
- the negative test result for BVD immunotolerance by immunofluorescence;
- the bull’s identification number recognized pursuant to the *Regulation respecting the identification and traceability of certain animals*;
- the general and clinical exam sheet of the reproductive system signed by a veterinarian, including real scrotal circumference;
- the adjusted pre-weaning average daily gain and the post-weaning weight;

- performance results (EPD and accuracy or post-weaning index and rank).

When the information is complete, accurate and consistent with the various information sources, the MAPAQ adviser verifies whether requirements have been met and issues an attestation for the bulls that satisfy these conditions.

The above requirements come into effect on January 1st, 2011. However, since that date, the use of a superior genetic bull is no longer a requirement of La Financière agricole du Québec to benefit from the Farm Income Stabilization Program for the Cow-Calf production.