

# The SHORTHORN ADVANTAGE PROJECT

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The Canadian Shorthorn Association is pleased to be offering Phase II of the SHORTHORN ADVANTAGE PROJECT which will collect, summarize, and communicate genetic data on 13 important beef cattle traits gathered from Shorthorn animals in Canada. Individual data will be provided solely to the breeders who submit samples on their own animals. It is important that we collect as much proven data attached to our breed as we possibly can because that is the future. In every walk of life we all now depend heavily on vast cross sections of easily accessible data in order to make everyday decisions. Cattle buyers and breeders are no different.

As a Shorthorn breeder you KNOW you have a great breed and many of your customers do too, because they have been coming back again and again for those traits they can count on - docility, marbling and fertility to name a few. We want to reinforce the advantages of the Shorthorn as a 'beef cow' in the cattle industry and further promote the efficiency and practicality our breed can bring to today's cow herds. In this day and age of hyper technology we would be remiss if we did not take advantage of the abundant tools available to us to prove the trait advantages we have. Specifically, the science behind DNA technology is now well beyond testing. The application of genomics technology as an important decision making tool is widely embraced and used by many progressive beef cattle and dairy breeds. We know we have the advantageous traits - we need to show proof of them and communicate them.

## SO WHAT IS THE SHORTHORN ADVANTAGE PROJECT?

Phase I, which many CSA members participated in 2014/2015, concentrated on testing established bulls and those results became a part of the North American Shorthorn population used to establish the baseline data for producing genomically enhanced EPD's. More simply stated, genomics from DNA will be added to EPD's produced from breeder submitted data, thereby creating a more accurate prediction, called a GE-EPD. It is expected that these will be available later in 2016.

Phase II will collect more SNP DNA data which is needed to produce GE-EPD's through a genetic test called the GGP-LD Assay. The other advantages of the GGP-LD Assay are that using SNPs for parentage verification or genetic defect testing is cheaper and much more accurate than microsatellite and can be done without the need for resubmitting another sample. Most importantly, the GGP-LD Assay captures tens

of thousands more genetic markers than the old method. In addition, the Igenity Profile of 13 traits will be useful to compare animals within your herd, and coupled with existing EPD data, will add tools to your decision making when it comes to cattle selection. These 13 traits have been widely documented as among the most important and sought after traits by cattle buyers and breeders. A list of the traits is on the order form for your reference. Test your sire(s) and some sire progeny; a proven or ET dam and her progeny; or the fresh new genetics you are developing.

We are very pleased that Delta Genomics again is working with our Association to make this project a success. The Canadian Beef Breeds Council and Delta Genomics have obtained government funding to help associations like ours further transition to SNP technology which is the new, vastly improved and expanded DNA processing standard already widely adopted worldwide. The CSA will receive a subsidized cost for our GGP-LD and 13 trait IGENITY profile. Delta Genomics will be facilitating the processing of our samples by extracting the DNA and interfacing with IGENITY Agrigenomics in the US who actually perform the trait measurements. Finally, Delta Genomics will be summarizing all of our results from IGENITY and this will be the basis of the material the CSA will publish for members and use in advertising and promotional material.

## ADDED BONUS:

DNA parentage tests which may be needed to meet CSA registration requirements CAN be done at this time, with the same sample, and at NO ADDITIONAL COST, provided a SNP profile of the sire/dam is on file. If the sire/dam sample is available in the Biobank, currently being assembled at Delta Genomics, the test can also be done for a SMALL additional FEE. If you need a DNA parentage test on one of the animals you are submitting under the Advantage Project, contact CSA at 306-757-2212 for details on how to get this test completed. ('Regular' parentage tests will still be completed under the same process as normal – contact CLRC and give them the information on the animals and they will send you the test kit.)

## HOW DO I PARTICIPATE?

First, here are some details you need to know:

- \*all current CSA members are eligible and "encouraged" to participate

- \*the normal cost of each GGP-LD and 13 trait profile per animal is \$65

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\*the CSA is subsidizing \$12.50 of the cost and through the Canadian Agricultural Adaptation Program, the Canadian Beef Breeds Council and Delta Genomics are providing an additional \$32.50 subsidy, therefore, the cost to participating members is only \$20 (plus postage and sample kits where applicable)

\*You can use one of 3 sample methods:

a) sample hair cards (\$1 each) or tissue sample kits (\$3 per tag & \$45 for the tissue collection applicator) can be ordered on the form that follows.

b) a straw of semen can be sent on an eligible Shorthorn bull you are currently using in your AI program (straw must be wrapped in stiff material ex. cardboard or plastic to prevent breakage in the mail; it does not need to be sent in a coldpac)

c) a hair sample may be sent in a clean/plain white envelope, clearly marked with the member's name and the animal's tattoo and registration #

\*a maximum of 15 animals per member will be subsidized. If we do not reach our goal by the November 30 deadline, additional samples will be accepted from members who wish to test over the 15 animal maximum. Please let the CSA office know if you are interested in this option as soon as possible

\*each animal must be CSA registered and bulls must be a minimum of 93.8% pure and females must be a minimum of 87.5% pure

\*deadline for submitting samples for this project is November 30, 2016

Here are the 3 Easy Steps to participating in the SHORTHORN ADVANTAGE PROJECT:

1) If you need sample kits the order form follows, or go to the CSA website [www.canadianshorthorn.com](http://www.canadianshorthorn.com), click on SHORTHORN ADVANTAGE PROJECT and print off the order form.

2) After you receive your sample kits or if you are using white envelopes, collect your samples and complete the 3 page SHORTHORN ADVANTAGE PROJECT form and mail along with samples and payment to:

Canadian Shorthorn Association - Box 3771, Regina, SK, S4P 3N8

3) You should receive your individual results from Delta Genomics in approximately 4 weeks from when they receive the samples. It is important for you to know that only the CSA member who submits the sample and Delta Genomics will have access to individual results and they will not be disseminated in individual form at any time, even to the CSA.

NOTE: If you wish to test at the same time for any of the current genetic defects (TH, PHA, DS) please complete the optional services section and send payment as indicated.

If you have any questions about this project, please contact:

• Dale Asser 705-444-0386

[hillhavenshorthorns1@gmail.com](mailto:hillhavenshorthorns1@gmail.com)

• Belinda Wagner, 306-757-2212

[office@canadianshorthorn.com](mailto:office@canadianshorthorn.com)

• For specific technical questions (ex. sampling, genetic defects) please contact Michelle Miller at Delta Genomics at 780-492-2538, or [michelle.miller@deltagenomics.com](mailto:michelle.miller@deltagenomics.com)

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