

DNA Sample Types — Tips and Tricks

DNA testing provides vital and important information, which helps drive beef cattle improvement. The American Hereford Association (AHA) requires all Hereford bulls born after Jan. 1, 2011, to be DNA typed before their progeny can be registered. Donor dams must also be DNA tested before their embryo transfer (ET) calves can be registered.

Samples should be sent with the corresponding DNA submission form for the specific animal. These forms must be obtained from the AHA before sending the samples to the lab. DNA requests can be made online through MyHerd or by calling or emailing the AHA Customer Service Department. If samples are received at the lab without the proper AHA paperwork, the samples will not be processed.

What's your type?

The AHA allows several different sample types for testing. To ensure you are using the best practices when gathering and submitting your DNA samples, follow these tips for each sample type.



Hair

When using a hair sample, collect the hair from the tail switch of the animal. Be sure to pull the hair sample; do not cut it. Each sample should include 80–100 hairs. This may seem like a lot, but hair is easily broken, may not have a good follicle attached or could be contaminated. To make sure the lab can get a result, send 80–100 hairs. Try to make sure the hair is clean and not contaminated with manure, mud, bodily fluids, etc.

When using hair samples for DNA testing, it is best to wait until the animal is at least weaning age before collecting the sample. Hair samples taken from young calves often do not have enough follicles and results may be inconclusive.



Blood Card

Blood cards may be purchased from AHA for 50 cents per card — minimum order of 10. Blood can be drawn from any method deemed desirable. Be sure to fill the blotting paper section of the blood card with blood and saturate it just enough to fill the circle, but not enough to make the card soggy. Do not over-saturate the blood card, as this could cause a “bad sample” result from the lab. Insert the blood card lid into the top slit, so there is room for air to get in. Leave the card in a clean area to dry at room temperature. Do not use a heating source for drying. Once dry, open the lid and insert it into the bottom slit for storage or shipping.

Blood card samples can be collected at any age, so these are a better option when testing young calves. Please do not use a blood sample to DNA test an animal that is or was a twin. The blood samples will fail because the calves share blood in utero.



Semen Straw

Semen straws can be used as a DNA sample for bulls. They can be room temperature and do not need to be refrigerated when shipped. However, semen straws break easily. When shipping, place the straw in something protective. An ink pen easily keeps the straws from breaking. Simply pop open an ink pen, pull the ink tube out, and slide the semen straw down in the pen. The hard plastic of the pen provides protection for the straw in the mail. It is best to use a padded envelope to send the semen samples even when the straw is in a pen or some other protective casing.

DNA testing step by step process

1. Make DNA request on MyHerd or call the AHA office.
2. If requested on MyHerd, go to “pending transactions” and pay for DNA request.
3. The DNA sample submission form is emailed or mailed to you.
4. If emailed, open DNA sample submission form from AHA and print it.
5. Collect DNA sample.
6. Mail DNA sample submission form with DNA sample attached to GeneSeek.
7. GeneSeek processes DNA, generates results and returns data to the AHA.
8. DNA results are made available on *MyHerd.org* the same day, or you will receive a results statement via email or mail.



Tissue Sample Unit (TSU)

A TSU is a great way to take a sample, but like all other sample methods, is not fail proof. The proper equipment (tissue sample tubes and a tissue sampling applicator gun) is needed to collect TSUs. Order these products from Allflex or through the AHA by filling out the order form found on Hereford.org/hwp-content/uploads/2021/01/AHA-Ear-Tag-Order-Form.pdf and emailing it to eartags@hereford.org. TSUs can be collected at any age. However, the sample should not be taken immediately after birth. The calf could still have fluids on it that would contaminate the sample. Give the calf at least a few hours to dry off.

When collecting a tissue sample, be sure to wipe the ear clean. Do not use any cleaning products to clean the ear because these could contaminate the sample. Use a dry cloth or paper towel to wipe the ear. Try to collect the sample from a portion of the ear that does not have a tattoo. The tattoo ink could cause the sample to be contaminated and fail testing. Be sure the white cap is pressed down firmly on the tube, ensuring the sample and liquid cannot escape.

When shipping TSUs, like semen straws, it is important to protect them properly. Do not ship TSUs in a regular envelope, as they puncture the envelope and fall out. Send them in a padded envelope or some other form of protective casing.

Happy to help

Having trouble navigating MyHerd? Visit Hereford.org/member-services to view more than 20 tutorials of MyHerd or contact AHA Customer Service at 816-842-3757. To sign up for MyHerd, email your member number to myherd@hereford.org.

Remember, the AHA does weekly evaluations. This means the genomic-enhanced expected progeny differences (GE-EPDs) have the ability to change frequently. Therefore, they are no longer printed on the DNA results statement. However, the GE-EPDs can be found online through MyHerd or the EPD/Animal Search function. GE-EPDs will not appear until two weeks after the DNA results are received at the AHA. For example, if a DNA result is received at the AHA on Oct. 1, the GE-EPDs would not appear until Oct. 11.

Order tags and TSUs early

As seasonal testing volume increases, please consider placing TSU and DNA orders sooner rather than later so you can have results available when you need them. TSU order forms are available at hereford.org/genetics/dna-testing. DNA requests can be made online through MyHerd or by calling or emailing the AHA Customer Service Department. **HW**

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DNA test prices

- Genomic profile: \$42
- Full package (Genomic profile plus H/P test): \$58
- Add-on H/P test: \$30
- MD testing: \$20 for stand alone, \$13 if done in combination with a profile
- TSU credit: \$4