

AHA's DNA Policy for Walking Herd Sires

In November 2010 the American Hereford Association (AHA) Board implemented a new policy requiring DNA on all future walking herd sires.

The policy states: The AHA will require all Hereford sires born after Jan. 1, 2011, to be DNA genotyped at the official AHA DNA laboratory before their progeny can be registered.

This policy was adopted to improve the quality control of pedigrees. Numerous times during the year AHA staff identify pedigree mistakes, and the discovery comes at times when it is very difficult to make a determination

of correct parentage of an animal. Genotyping walking herd sires will be very beneficial toward minimizing this issue in a cost-effective manner.

The following are some frequently asked questions and answers about the policy.

What is the purpose of the new DNA Sire Policy?

The seedstock industry estimates that there is anywhere from a 5% to a 15% error rate in pedigrees, most of which are due to sire misidentification. There are a host of reasons for such mix-ups;

frankly, it's easy to do. The new policy is designed to make quick corrections in pedigrees through DNA evidence that can quickly give us an accurate answer as to who the correct sire is on a mislabeled pedigree.

How does this policy differ from what AHA has required in the past?

From the beginning of the registered pedigree livestock business, the AHA has relied solely on the record keeping of individual breeders to determine the accuracy of pedigrees. The AHA has, in the past, only required artificial insemination (AI) sires to be confirmed back to parents through blood typing and in recent years DNA profiling.

As AI and embryo transfer (ET) use has increased over the last decade, breeders and AHA staff have found a significant error rate in pedigrees that are, for the most part, corrected once they have an understanding of the sire possibilities. If the probable sires have DNA profiles on file then the problem can be resolved very quickly. Many times AHA cannot determine the correct sire, which causes a great deal of marketing problems, particularly if a bull has been used across more than one owner. Having every walking herd sire on file will solve nearly all of the questions regarding pedigrees once an error has been detected.

What is the difference between a DNA profile and parentage verification?

A DNA profile is simply one test on an individual animal that identifies the unique DNA markers that basically fingerprint the animal. A parentage test would create a DNA profile that would confirm or deny the accuracy of the pedigree not only on an individual animal but also on the sire and dam of the individual. The new policy does not require parentage verification but only an individual DNA profile on the herd sires.

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How to submit samples for DNA testing

Maxxam Analytics is the American Hereford Association's (AHA) official DNA lab.

The cost for DNA testing for less than 50 samples submitted at one time is \$32/head for hair or \$37/head for semen, blood or tissue. If a breeder submits more than 50 samples at one time, the fee is \$19/head.

To start the process, call the AHA office, 816-842-3757, to request a DNA test kit. You will need the animal's registration number.

AHA will send the producer a DNA Genetic Marker Test form. The form has a bar code specific to the animal. Producers cannot alter the form for another animal.

Collect the sample and submit it to Maxxam.

Instructions for obtaining samples

Breeders can submit hair or semen samples for testing. Here are some tips for collecting hair samples:

- Pull hair samples above the tail switch. Do not cut the hair. The hair root contains the material needed for DNA testing.
- Pull 20-25 hairs evenly and directly from the tail so the hair does not break. The switch must be dry and brushed clean of all debris. The lab suggests wrapping the hair around a pencil and then pulling.
- Place the hair in a straight line across the center of the form from the AHA for DNA testing. Keep the hair together with the roots to the left as noted on the form. Do not curl hair. Attach the center hair shafts to the form with tape.
- Fold the form as you would a business letter. Each sample has an individual envelope for mailing. If you have several to mail, put each sample in its individual envelope and then mail all the envelopes in one big envelope to save on postage. The address is located on the bottom of the form.
- It is important to only include hair from one animal in each kit. The lab cannot detect cross contamination of samples.

The same form can be used for semen straw samples. Semen does not have to be frozen. Put the semen straw in a ballpoint pen casing, capped and taped on the form where it indicates to put the hair shafts. This procedure prevents the semen straw from breaking while being mailed.

For more information about DNA testing procedures for Hereford breeders, call the AHA at 816-842-3757 and ask for Beverly Kincaid. **HW**



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Will every bull calf that is registered be required to have a DNA profile on file?

No. This is the most misunderstood fact of the new policy. Only bulls that will become herd sires and thereby sire registered calves will be required to be DNA profiled.

What about the range bulls I'm selling to commercial cattlemen?

Range bulls will not be required to be tested if they are simply going into a commercial herd. However, if that range bull is pulled out of a commercial herd and used as a sire to produce registered progeny, then he will be required to be DNA profiled.

When will the new policy take effect and what age of animals will be required to be DNA profiled?

Only bulls born after Jan. 1, 2011, in other words bulls being born this spring calving season and beyond that become seedstock herd bulls will be required to

be DNA profiled. All bulls born prior to Jan. 1, 2011, are grandfathered in and will not be required to be DNA profiled unless they become permitted AI sires. Bull calves born today will likely not be in production for at least a year, and their calves are at least two years away from being born, so the AHA has provided some lead time.

What will this cost a breeder?

Today, the cost for a DNA profile is \$32. This includes a status report for all three known genetic abnormalities.

Has any other breed association adopted this policy?

The Canadian Hereford Association (CHA) adopted this policy five years ago. Today, reports from CHA management and breeders confirm that the policy has made life much easier for breeders by effectively resolving pedigree mistakes in a rapid and very inexpensive manner.

What other benefits might come from this policy?

As DNA technology advances in the coming years, DNA tests may be adopted to enhance the current Pan-American Cattle Evaluation. The AHA is collaborating with scientists to discover gene markers that might add accuracy to the expected progeny differences (EPDs) of different economically relevant traits. If this comes to fruition, then having DNA samples on file will make it easier for breeders to go back and retest herd sires for various informative DNA markers.

For more information, contact Jack Ward at 816-842-3757 or jward@hereford.org. **HW**