

AHA Rules and Regulations

SECTION I: MEMBERSHIP

A. Membership Types

1. Life membership
2. Annual (recording) membership
3. Junior membership

B. Life membership

Life memberships that were purchased in the past will continue to be recognized by the Association. Life members only pay member service fees and do not pay dues. Life members may attend all meetings of the Association. They have voting rights at all official membership meetings as long as they are active members (have registered at least one animal in the previous calendar year). Life members receive member rate fees for registering and transferring Hereford cattle.

C. Annual (recording) membership

Recording memberships are annual memberships issued by the Association in the name of an individual, farm or ranch, partnerships or corporation. To remain active, the recording member must pay annual dues on the anniversary date of their joining as a recording member. Recording members may attend all meetings of the Association. They have voting rights at all official membership meetings as long as they are active members (have registered at least one animal in the previous calendar year). Recording members receive member rate fees for registering and transferring Hereford cattle.

D. Junior membership

Junior membership in the Association is available to anyone under 22 years of age. The fee for junior membership is \$15, assessed annually on September 1. The junior membership is available until the holder reaches his or her 22nd birthday. At that time, he/she may acquire an adult (life or recording) membership. Junior members have all of the privileges of recording members (except voting) including member rate fees for registering and transferring Hereford cattle, as well as participating in junior activities and scholarships.

E. Annual member service fee

Lifetime, recording and junior memberships require an annual member service fee of \$100 (\$20 for junior members) in order to register an animal during the current fiscal year. The fiscal year is September 1 through August 31. If this service fee is paid by November 1, new members will receive a \$20 credit immediately at any point in time during the fiscal year. Each paid member service fee will generate a one-year subscription to the *Hereford World* magazine (except in the case of a junior membership). This fee is used to offset the costs of several under-funded services offered active registry accounts.

F. Membership herd designation

The Association has two different tiers or levels that members can participate in when registering and transferring Hereford cattle. The mechanisms for billing of services and services available are different between each of the tiers; therefore, each membership account must be designated as to which tier or level the member's herd will participate in. Each membership can have only one participation level designation. The two tiers and a brief description of each are as follows:

Pedigree registry: This participation level is designed for breeders who wish to register and transfer purebred Hereford cattle but are not interested in maintaining and reporting performance data to AHA. Pedigree registry breeders can submit registry and transfer applications on a per head fee basis established by the Board of Directors. Pedigree breeders choose to waive performance recording on their animals and, therefore, waive the production of EPDs on their herd.

Performance registry: This participation level is structured and oriented to simplify the billing and reporting of performance testing herds. Registry and transfer fees are assessed at the same rate as for pedigree breeders. Performance

registry breeders are also required to maintain an accurate and up-to-date female inventory, listing all females currently in their breeding herd with AHA. Performance registry breeders are required to annually report calving ease and weaning weight information on the produce of every female in the inventory. Additional measures including birth and yearling weights, as well as carcass traits, can be reported but are not required. EPDs will be printed on the certificate.

EPDs will only be reported on registered animals. Non-registered animals or genetic material will not be provided EPDs.

G. All memberships in the Association, of any kind, including lifetime memberships are non-transferable.

SECTION II: AHA RECORDS, RULES AND POLICY

Application for registration of your calves is a part of the record keeping requirement of Hereford cattle. Extra careful attention to detail in submitting applications for registration will save time for you and your Association. Be sure all information is supplied and that information is accurate and legible. Applying for registry of your calves when they are still young (four months or younger) is important, **SINCE IT REDUCES THE RISK OF ERROR AND SAVES YOU BOTH TIME AND MONEY.**

There is one basic form used by the Association for registration application. Breeders participating at the pedigree registry level should disregard the fields of information used to submit birth performance data. Reports generated from the processing of registration applications will be appropriate for the breeder's level of participation.

Tattooing calves:

Tattoos are a requirement for registry in the American Hereford Record. Hereford breeders were the first to adopt the ear tattoo as a requirement for registry.

A tattoo outfit consists of a pair of specially designed pliers with rows of digits numbered 0 to 9 and a bottle of India ink. Such equipment may be purchased from most livestock supply stores.

Select the desired number by rotating the digits in the ear marker. Before punching the animal's ear, assure yourself that everything is in order by punching a piece of cardboard.

Next, restrain the calf's head so as to prevent violent movement while applying the tattoo. Select a spot in the center of the ear and clean thoroughly with a cloth and rubbing alcohol. Avoid placing the tattoo over one of the ribs of the ear but rather place the tattoo between the ribs of the ear. Place the ear between the jaws of the pliers with the numbers or letters on the inside of the ear. Close the pliers quickly and firmly and then release. Use a finger or toothbrush to smear ink over the punctures made by the tattoo and rub thoroughly until ink is worked into each of the holes. Make a written record of the marks placed in the ear. It is strongly advised that breeders place the tattoo in both ears to enhance the chances that a complete tattoo identity can be established.

Herd Book of the American Hereford Association

Rule 1. OFFICIAL RECORD: The official record of the Association shall be the American Hereford Record. Such record shall be maintained in the AHA office.

Rule 2. HERD BOOK: Entries in the American Hereford Record shall contain the registration number, name, sex, tattoo, date of birth, name and registry number of the sire and dam and the name of the breeder.

SECTION III: REGISTRATIONS

Rule 1. PRIVILEGES OF REGISTRATION: Applications for entry will only be accepted from members. Non-members must become members in order to register an animal.

Rule 2. ELIGIBILITY: To be eligible for entry in the American Hereford Record, an animal must be the offspring of registered

parents, both of which have been previously recorded in the American Hereford Record. Both horned and polled Herefords are eligible for entry into the record.

Herefords registered in other associations (members of the World Hereford Council) can be entered in the American Hereford Record, thereby making their offspring eligible for registration.

Rule 3. APPLICATION FOR ENTRY: Application for entry should be made on the official application form (FORM 1) or through an official AHA approved electronic software system.

Rule 4. AGE OF SIRE: There is no minimum or maximum age specified for a Hereford sire or his progeny to be eligible for entry. However, applications indicating the sire was less than nine months of age at time of service will be questioned for accuracy.

Rule 5. AGE OF DAM: There is no minimum or maximum age specified for a Hereford dam or her progeny to be eligible for entry. However, applications indicating that the dam was less than nine months of age time of conception will be questioned for accuracy.

Rule 6. 283-DAY RULE: A calf born less than 283 days after the birth of its dam's previous calf will be questioned. The breeder must then provide an explanation for the early delivery and a ruling will be made as to whether the entry will be allowed.

Rule 7. 21-DAY RULE: Females exposed to one bull must not be exposed to another bull in less than 21 days after such exposure. Avoiding double or multiple exposures will help provide positive identification of the service sire. Exposure to a second bull in less than 21 days might mean the correct service sire cannot be positively identified, requiring DNA typing of both sires, the dam and the calf.

Rule 8. DNA TYPING:

- All Hereford bulls born after Jan. 1, 2011, are required to be DNA typed at the official AHA DNA laboratory before their progeny can be registered.
- Whenever the eligibility for registration of any animal is in doubt because of uncertain or unknown parentage, DNA typing by the Association shall be required.

Rule 9. MULTIPLE BIRTH: Twins or other multiple birth calves are eligible for registration. The application for registry, however, should specify such at birth.

Rule 10. TATTOO: Calves must be tattooed before application for registry is made. Each breeder may devise his own plan or system of tattoo identification using either numbers or letters or a combination of both. Any marks other than numbers or letters, however, are not permitted — meaning brand marks, symbols, etc. cannot be used. Duplication of tattoos within your herd is strongly discouraged as tattoos are frequently used by breeders as a primary form of identification. Duplication can lead to much confusion for breeder and the Association office alike.

The tattoo in one ear shall be limited to a maximum of eight characters. If the tattoo should become illegible, the same marking shall be placed in a different area of the ear. No attempt shall be made to alter or over-imprint the old tattoo. The association must be notified when an animal is re-tattooed.

Rule 11. NAMING HEREFORDS: It is the responsibility of the owner to select names for his cattle. The name must not be more than 30 spaces long, counting spaces between words. For example, PRINCE DOMINO ADVANCE JUNO 133 is exactly 30 spaces long. Brands, symbols and commas cannot be used. Avoid duplicating names as no two Herefords should be named the same. It is the breeder's responsibility to avoid using names and prefixes that are being used by other breeders. Names should be appropriate for the gender of the animal and it is recommended that names reflect the line of breeding where possible. Embryo transfer calves will carry the designation embryo transfer (ET) at the end of their name, accounting for three spaces.

The Association reserves the right to change the name assigned to an animal on an application for registry if the name submitted is deemed to be inappropriate.

Rule 12. CHANGING NAMES: The name of a Hereford may be changed, provided the animal has no registered offspring. The name may be changed only once in the lifetime of an animal. All owners must agree to the name change in the case of a partnership owned animal. Letters must be submitted from the first and all current owners requesting the change of name along with the certificate and required fee.

Rule 13. JOINT OWNERSHIP (BREEDING INTEREST): No application for registration or transfer of an animal which shows more than four owners shall be accepted for entry in the American Hereford Record.

Rule 14. DUPLICATE CERTIFICATES: If original certificates are lost or destroyed, the owner may secure duplicates from the Association by providing the sex, registry number and tattoo of each animal. If the registry number is not available, the registration number of the dam, name of the person who registered the animal, and the sex, age and tattoo of the animal in question must be provided.

The fee for duplicate certificates for member and non-members is available from the AHA Records Department.

Rule 15. CORRECTION OF CERTIFICATES: It is recognized that occasionally errors are committed in registering cattle, and these should be corrected. If an error is discovered, it should be reported to the Association immediately and the incorrect certificate returned with a letter of explanation.

Corrections are made without charge if done within six months of the issue date or if the Association made the error. The fee for making corrections after the six-month period is available from the AHA Records Department.

Rule 16. ARTIFICIAL SERVICE: Calves may be registered that were produced through artificial insemination (AI) provided they comply with the rules governing AI as discussed in Section 5 ARTIFICIAL INSEMINATION.

Rule 17. ELIGIBILITY FOR EMBRYO TRANSPLANT CALVES: Registration of offspring resulting from Embryo Transplant (ET) shall be made on an Application for Registration (Form 1). Certificates issued shall be designated by ET following the name of the calf. The name must be no longer than 30 characters long including the ET designation.

Registry of offspring resulting from ET may be implemented only after the following steps have been taken:

- DNA profile of sire and donor dam must be recorded with the Association. DNA profile kits are available from the Association. The names and registry numbers of the animals to be tissue sampled must be supplied.
- Non-Owner AI Certificates of Service must accompany the application for each calf when the sire is not in the same recorded ownership as the donor dam.

Rule 17A. NEW EMBRYO TRANSFER POLICY:

For ET calves there will no longer be an ET certificate required for registration. The new requirement for registering an ET calf will be the reporting of the recovery date of the embryo at the time of registry. ET calves will be charged an additional \$10 per head over and above the normal registry rate.

Rule 18. LEASING HEREFORDS: Herefords may be leased, provided a statement of lease is on file with the Association. If a lease statement is on file listing each animal being leased by name and registration number, the lessee can register calves sired by the bulls or produced by the cows as if he were the actual owner, provided there are no more than three owners already listed. At the end of the lease period, unless extended, registration privileges revert back to the recorded owner.

In order to make this process more efficient and less confusing, the Association will adopt the following policies regarding leasing Hereford cattle.

- The required information needed by the Association for leasing animals will be communicated using one consistent and common lease form to be used by all members wishing to participate in this type of practice. The lease form will

contain only the required information for the Association's needs and is to be used expressly for that intent. The lease form should not be construed as a binding agreement between the lessor and lessee. The Association shall in no way be involved in or assume liability for the lease, terms of the lease of registered Herefords, or the passage of legal rights thereto.

- All lease periods must include a beginning and ending date; no open-ended leases will be accepted.
- All animals involved in the lease shall be included on the lease form(s) by their registration number and name.
- The lease form must be submitted by the lessor with his/her signature. A lease fee equal to the current transfer fee for registered Herefords will be charged to the lessors account for each animal involved in the lease.
- Should the lessor and lessee agree to extend the lease, documented notification will be required in the Association's office should the birth dates of any calves being registered out of sire or dams involved in the lease not coincide with the time period of the lease.
- If the lessor or lessee wishes to lease additional or different animals, then an additional lease form(s) should be completed with all required information and submitted by the lessor.

Rule 19. IMPORTED HEREFORDS: Herefords imported from another country must be recorded in the American Hereford Record if their calves are to be registered.

Registration of imported cattle must be accomplished within one year from the date of purchase of imported cattle. See section for the procedures for recording imported cattle or semen interests in bulls from another country.

Rule 20. REGISTRATION OF HEREFORDS OVER TWO YEARS OF AGE: Application for registration of an animal received by the Association after two years from the date of birth shall be considered for registration only when accompanied by a written statement from the applicant setting forth the reason application was not submitted within the generally accepted registration period. These applications and required fees must be approved by the Board of Directors.

Rule 21. REGISTRATION FOR THE ESTATE OF A DECEASED PERSON: In the event of the death of one who normally would apply for registration of cattle, the Association requires there shall be filed in its office all documents necessary to prove the person requesting registration is legally authorized to do so.

Rule 22. REGISTRATION BY AFFIDAVIT: In case of neglect or refusal by the seller to register a calf sold at side of dam, registration may be approved by the Board of Directors on the basis of the facts furnished to substantiate the claim.

Each affidavit must be accompanied by proof of a sale and payment in full of the purchase price and evidence of whether the dam's breeding was natural or artificial.

Rule 23. REGISTRATION ACCURACY: Accurately kept private records are essential, and in any case where an application is regarded as questionable, the burden of the proof with regard to same shall belong to the applicant, who must sustain his claims by a preponderance of evidence.

Whenever the accuracy of data contained in an application to register an animal is challenged, the matter may be referred to the Board of Directors for investigation.

Rule 24. MISREPRESENTATION OR FRAUD: If an animal's registration has been obtained through misrepresentation or fraud, or if the date of birth, tattoo number, sire, dam or service information or any other fact regarding the animal has been misrepresented, the Board of Directors or the executive committee of the Board may take such actions and impose such sanctions as it deems necessary.

SECTION IV: TRANSFER OF REGISTRATIONS

Rule 1. RESPONSIBILITY: It is the responsibility of the seller of registered Herefords to execute properly the official transfer of ownership to the buyer. Every change of ownership of an animal used for breeding purposes must be recorded by official transfer on the American Hereford Record.

No entry on the face of the certificate of registry shall be made except in the office of the Association and any unauthorized entry shall render a certificate null and void, subject to issuance of a replacement certificate at an additional fee.

Rule 2. IDENTIFICATION: It shall be the duty of the seller, before offering a registered Hereford for sale or applying for transfer, to verify that the animal carries legible tattoo marks matching those entered on its certificate.

Rule 3. APPLICATION FOR TRANSFER: Application for transfer shall be made either electronically through AHA's online service or in hard copy form on the reverse side of the registration certificate and signed by the seller or an authorized agent. The application should be legibly completed and must specify name and location of the buyer and date of delivery. For bred females, service information is also required.

Rule 4. COWS WITH CALF AT SIDE: When a cow is transferred with a calf at side, the calf must first be registered to the individual, partnership or corporation in whose name the cow was registered on the date of birth of the calf. A separate transfer of the calf is then required to the new owner. This is often referred to as a "transfer on entry." (See backside of registration application.)

Rule 5. CALF TRANSFERRED AT TIME OF REGISTRATION: As described above, a calf must first be registered in the membership name of the dam's owner at the time of birth. Then a separate transfer to the new owner is required.

Rule 6. TRANSFER BY AFFIDAVIT: In the event of neglect or refusal by the seller to apply for transfer of registration, transfer may be recorded if approved by a majority of the Board of Directors on the basis of the facts furnished to substantiate the claim. Each affidavit must be accompanied by proof of sale and payment in full of the purchase price of the animal.

Rule 7. TRANSFERS CONSIGNED TO PUBLIC SALE: Sale managers or their representatives may fill in the buyer's name on the application for transfer of animals consigned to public sales, and if authorized by the consignor, sign such transfers in his stead. Such applications must indicate the name of the sale manager or agent representing the consignor. Applications executed under this rule are subject to Rule 12 of this section.

Rule 8. TRANSFER FROM THE ESTATE OF A DECEASED PERSON: In the event of the death of the owner of Hereford cattle, the Association requires that there should be filed in its office, documents showing the person requesting transfer is legally authorized and entitled to request such transfer. Applications executed under this rule are also subject to Rule 13 of this section.

Rule 9. TRANSFER OF EXPORTED ANIMALS: Application for transfer of an animal exported to another country shall be made with a regular Transfer Application.

Rule 10. RESPONSIBILITY OF LEGAL TITLE: A transfer of registration on the records of the American Hereford Association is not to be construed as the conveyance of legal title by the Association. The Association shall in no way be involved in or assume liability for the purchase, sale or terms of the sale of registered Herefords or the passage of legal title thereto.

Rule 11. JOINTLY OWNED ANIMALS: No animal shall be transferred to more than four owners of record at any one time. A "syndicate" or similar type entity consisting of one or more individuals, firms, etc. may be listed as one or more of the four designated owners of record.

Rule 12. MISREPRESENTATION OR FRAUD: If an animal's registration has been transferred through misrepresentation

or fraud, the Board of Directors or the executive committee of the Board may take such actions and impose such sanctions as it deems appropriate as provided in Article IX of the Bylaws, including, without limitation, suspension of the animal's registration and any registrations of descendants of such animal and refusals of the Association to receive subsequent application of any kind from any person implicated in the misrepresentation or fraud.

Rule 13. AUTHORIZED SIGNATURE: A certificate of registry does not establish legal ownership of cattle but simply reflects the name in which cattle are registered on the books of the Association. The Association will usually make any requested change or transfer of cattle registration upon the presentation, to the Association, of the Registry Certificate covering the cattle and purporting to be signed with the name in which the Registry Certificate is issued. Due to the large number of transfers, it is impractical for the Association to verify signatures or require proof that the person signing the Registry Certificate and requesting change or transfer is in fact authorized to do so. Accordingly, a Registry Certificate should be kept in a safe place to insure against its falling into the hands of an unauthorized person who could then cause change or transfer of registration on the Association's books and the issuance of a new Registry Certificate.

If the Association receives conflicting instructions regarding any change or transfer of registration, the Association will, unless restrained by appropriate court order, honor the request of the person presenting the appropriate Registry Certificate.

SECTION V: ARTIFICIAL INSEMINATION

Rule 1. DNA PROFILING: All bulls used in an artificial insemination program must be DNA profiled and a record of their DNA profile must be filed with the Association before calves sired artificially by such bulls shall be eligible for registration or before Non-Owner AI Certificates may be purchased. The official policy of the Association is to use DNA only for parentage verification as of December 2002.

Rule 2. AI BULL PERMIT: The breeder using a bull for artificial breeding purposes must have received an AI bull permit issued by the Association. The Association must have on file a DNA profile report for the bull and his parents before the AI bull permit will be issued.

Rule 3. DEATH OF BULLS: Calves conceived after the death of a bull shall be eligible for registration under the same conditions and provisions governing the eligibility of calves conceived by AI. The Association may request that calves sired by deceased bulls be parentage verified. Ownership of a deceased bull may be transferred if they are AI permitted.

Rule 4. LABELING OF SEMEN: Semen must be properly identified by name and registration number of the bull and the date of collection. Unlabeled or mislabeled semen should not be used to produce calves for registration in the American Hereford Record. It shall be the responsibility of the owner of record or each co-owner of record of a bull used artificially to require each person or organization collecting, processing and freezing semen to identify the semen before freezing.

Rule 5. WITHIN HERD USE: No Non-Owner AI Certificates of Service are required to register the resulting offspring when both cow and bull are in the same recorded ownership. When the cow and bull are not in the same recorded ownership, Rule 6 below applies.

Rule 6. OUT-OF-HERD CALVES BY NON-OWNED SIREs: All sires used in AI service must be DNA profiled. Bulls that are DNA profiled after January 1, 1986, must also have both parents' DNA profiles on file with AHA to qualify for Non-Owner AI Certificates. A DNA profile may be obtained by sending the appropriate hair samples to AHA's official DNA lab for processing. DNA profiles from eligible animals, which originate in the official DNA lab of other Hereford associations, will be accepted for processing by AHA. Those sires for which a parent is not available for DNA profiling may only be used for AI service in the herds

of the recorded owners, unless such bulls qualify for analysis to provide a derived type for the dead parent. (Contact AHA for further information on this special ruling.)

The following requirements shall apply to register calves conceived artificially when the recorded owner of the female is not the recorded owner or one of the recorded owners of the sire at the time of conception:

Option A:

- A bull may enter the Non-Owner AI Sire Program, which allows the owner(s) of a bull to sell semen without the need of an AI certificate for registration of the offspring of the bull. Calves born on or after December 1, 2006, are eligible for registry under this program.
- For a bull to be entered into this program, an agreement must be signed by all owners of the bull and kept on file at the AHA. If the bull is owned by a syndicate, the owners listed on the certificate will need to sign the agreement along with the designated representative of the syndicate.
- For a bull to be entered into this program, he must have an AI permit issued (see Rule 2).
- There is a one-time fee of \$250 to enter a bull into this program. Once a bull is entered into the program, he will not be allowed to switch back to the certificate program (Option B).

Option B:

- The breeder (recorded owner of the female at time of conception) must obtain a Non-Owner AI Certificate of Service for each calf to be recorded from the individual or firm supplying the semen and such certificates must accompany the application for registration of the resulting offspring.
- The recorded owner of the bull from which the semen was sold is obligated to supply the number of Non-Owner AI Certificates of Service contracted for at the time the semen was purchased.
- Non-Owner AI Certificates of Service may be obtained from the Association by active members of the Association who are the recorded owner or co-owners of the bull at a fee established by the Board of Directors. It is the responsibility of the owner of the dam at the time of service to complete the Non-Owner AI Certificate of Service.

Rule 7. LIMITATIONS: The Board may cancel the Non-Owner AI Permit for any bull which has been scientifically documented as being a carrier of a deleterious gene which produces an economically important genetic defect in his calves.

Rule 8. LIMITATIONS: The Board may restrict or limit the number of Non-Owner AI Certificates for an individual bull if, in the judgement of the Board and based on scientific information, such bull is being used so excessively as to cause irreparable damage to the breed's genetic base.

Rule 9. NON-OWNER SEMEN CERTIFICATE ALLOCATION FOR MULTI-OWNER SIREs: To obtain AI Certificates from a multi-owned sire, one must be a recorded owner or co-owner of the sire. Certificates will be issued on request to any recorded owner. Contractual agreements regarding certificate privileges among multi-owners are the responsibility of those owners.

In the instance where a recorded owner of the sire is a multi-owner group, it is the responsibility of the owner group's designated spokesman to handle the distribution of non-owner AI semen certificates. Individual members of the multi-owner group, not otherwise recorded as one of the four recorded owners of record of the sire, will be required to secure Non-Owner AI Certificates of Service from a recorded owner in order to register offspring of the sire from their recorded dams.

The American Hereford Association (AHA) will provide a service whereby an AHA member can participate in a "Breeding Share Agreement" for bulls. When members participate in a "Breeding Share Agreement," they can be individually invoiced for AI certificates when calves are registered.

Rule 10. SEMEN DONATIONS TO COLLEGES AND UNIVERSITIES:

The Association will make donated AI Certificates of Service available for use by colleges or universities when a breeder makes a donation of semen from a qualified bull. The semen certificates will be issued to the college or university at no cost to the breeder. The following rules must be complied with:

- The semen must be a donation to the college or university.
- The breeder must apply for the donation certificates in the form of a letter to AHA indicating the institution to which the donation is made.
- The bull must qualify under the current rules for Non-Owner AI Certificates of Service.
- The certificates and semen must be used by the institution that received the donation. Applications for registry from any other party will not be accepted.
- Upon approval by the Association, donated AI Certificates of Service will be issued directly to the college or university.

Rule 11. LIABILITY: The issuance of Non-Owner AI Certificates of Service by the Association should in no way be construed as guaranteeing conception, or that the resulting calf shall be eligible for registration. There shall be no refunding of fees paid to the Association for these certificates.

SECTION VI: IMPORTING OF REGISTERED HEREFORDS

Rule 1. EXPORT CERTIFICATE: Registration of an animal originally recorded in the Herd Book of a member of the World Hereford Council shall be accepted only if a registry certificate is issued by the recognized registry organization of the country of origin.

Rule 2. APPLICATION FOR REGISTRATION: Registration may be applied for within one year by the breeder importing an animal originally recorded in the Herd Book of another member of the World Hereford Council and whose name appears as purchaser on the export certificate. The registry fee must accompany the request for registration.

Rule 3. REGISTRATION OF CALVES IMPORTED IN DAM: If a cow was bred prior to importation and a record of service does not appear on the export certificate, the owner of the sire on the date of service must certify to the particulars of service through the recognized registry organization of the country of origin.

When the imported cow was bred by artificial insemination there must be on file with the recognized registry organization in the country of origin a blood type or DNA profile of the service sire.

When the imported dam was bred artificially by a bull owned by a breeder in the U.S. and where no semen interest is owned by the breeder in the exporting country, a Non-Owner AI Certificate of Service must accompany the application for registry of the resulting progeny.

Rule 4. REGISTRATION OF CALVES IMPORTED AT SIDE: Registration of a calf imported at side of its dam shall be accepted only if the calf is also registered in the same recognized registry organization and a registry certificate has been received by the American Hereford Association (AHA).

Rule 5. SEMEN INTEREST IN A BULL DOMICILED IN A FOREIGN COUNTRY: To use semen or to sell Non-Owner AI Certificates of Service, the bull must be recorded in the American Hereford Record by a member of the American Hereford Association who resides in the US. All DNA profile rules apply.

Rule 6. REGISTRATION OF CALVES RESULTING FROM EGGS IMPORTED FROM A FOREIGN COUNTRY will require a DNA profile match of the subject animal, the sire and the dam on file with the Association.

SECTION VII: DNA PROFILING

Rule 1. DNA PROFILING: Over a period of years a vast amount of technical information has become available and DNA profiling is now a useful tool for Association members. DNA has been proven to be more accurate than blood type in proving parentage.

Applying for the DNA profile of an animal requires a request to AHA for a DNA profile kit for each animal to be tested. The request must include the name and registry number of the animal to be tested.

The kit will contain all the necessary instructions for securing a hair sample and the shipping instructions to send the sample to the designated AHA laboratory. Hair is the tissue sample of choice for the DNA profile. When pulling hair, it is best to pull at least 80 hairs from a clean area above the switch. The hair must have a visible follicle attached at the base of the root in order to produce enough DNA for validation.

Rule 2. AI SIREs: The rules of the Association require all sires of calves conceived artificially to be DNA profiled before their calves are eligible for registration. It is wise to have all herd bulls hair sampled early in life to make sure that the semen can be used after their death.

Rule 3. DNA PARENTAGE VERIFICATION OF AI AND ET BORN CALVES:

Starting December 1, 2006, the AHA will parentage verify every 250th calf registered with a service type of artificial insemination (AI) or Embryo Transfer (ET). If a calf is selected for verification under this program, the registration of the calf will be held until the parentage verification is complete. If the calf is from a mating of an AI sire and its dam is not available for sampling, the next calf registered will be selected without interruption of registration. The AHA will assume the DNA lab cost of parentage verification of the calf and DNA profile work on the dam (if required).

Rule 4. ALL ANIMALS: The Association may require that any animal for which entry application is received or which has been registered by the Association be subjected to a DNA profile test to verify breed purity and accuracy of the recorded parentage.

The Executive Committee of the Board of Directors or the Board of Directors or the Executive Vice President may require that a DNA profile be made, by such agencies as it or he may designate, of any Hereford animal which has been alleged to have been incorrectly recorded or for any animal for which tissue analysis is deemed advisable.

It shall be the duty of the owner or owners of record of any animal in question and the owner or owners of record of the purported sire and dam to afford the Association or its representatives reasonable opportunity to secure DNA samples from the animals involved in the investigation.

The Executive Committee of the Board of Directors is empowered to determine who shall pay the costs of any investigation, including laboratory fees assessed under the provisions of this rule.

Rule 5. REFUSAL: If the owner of record shall refuse reasonable opportunity to the Association or its designated agents to secure DNA samples as set forth in Rule 3 of this Section, the Board of Directors or the Executive Committee of the Board may take such actions and impose such sanctions as it deems appropriate as provided in Article IX of the Bylaws, including without limitation the suspension of the registration of the animal in question.

Rule 6. NON-REGISTERED ANIMALS: The Association may collect and maintain DNA profiles on animals other than registered animals. The Association may, from time to time, compare the DNA profiles of registered animals and the DNA profiles of animals with respect to which applications for registration have been submitted with the DNA profiles of non-registered animals. The Association may deny registration to, or revoke the registration of, any animal based on this comparison.

SECTION VIII: RULES REGARDING CLONES

Rule 1. ONLY REPLICATION CELL-CLONED animals shall be eligible for registration.

Rule 2. THE CELL DONOR animal must be DNA-marker typed.

Rule 3. THE BREEDER of the cell-donor animal must be identified as the breeder of the cell-cloned offspring.

Rule 4. THE OWNER OF RECORD of the cell-donor, on the date of biopsy removal, will be identified as the first owner, unless the calf is the result of a pregnant recipient, purchased embryo — fresh or frozen — in which case the purchaser may be identified as the first owner.

Rule 5. DNA MARKER typing of the cell-cloned animal, or recipient dams, may be required by the Association.

Rule 6. CALVES CONCEIVED AFTER DEATH of cell-donor animals shall be eligible for registration under the same conditions and provisions governing the eligibility of calves prior to the death of said animal.

Rule 7. REGISTRATION OF CELL-CLONED transplants shall be made on a special form, provided by the Association, at the regular fee, plus an additional fee as determined by the Board of Directors.

Rule 8. REGISTRATION CERTIFICATES issued for cell-cloned transplants shall be so designated. The registration number of the animal, which is being cell-cloned, shall also be stated on the registration certificate.

Rule 9. NOTHING SET FORTH herein should be construed as an indication that the Association takes any position as to the ownership rights, if any, of retained cell material. That is a separate matter reserved for discussion and/or negotiation between the buyer and seller.

Rule 10. INITIAL BREEDING VALUES – EXPECTED PROGENY DIFFERENCES (EPDs) generated from National Cattle Evaluation for a cloned animal shall be the same values as the cell-donor animal. All data of future progeny from a cloned animal will be pooled with the cell-donor progeny data for genetic evaluation.

SECTION IX: GENETIC DEFECT POLICY

Procedures for collecting abnormality data and reporting the information to the AHA membership:

Physical and functional abnormalities are present in all breeds of cattle. In order to monitor abnormalities in Hereford cattle, the American Hereford Association requests the collection of abnormality information from AHA members on a voluntary basis.

Specialist, Dr. David Steffen, veterinarian for the University of Nebraska Veterinary and Biomedical Science Department, has worked closely with many breeds in the area of genetic abnormalities. The AHA will be working with him to diagnose abnormalities as being genetic or non-genetic in origin.

Not all abnormalities are genetic in origin. Some defects can be attributed to sickness or nutrition. Dr. Steffen works to determine the root cause of the defect.

All AHA members are invited to read the procedures for reporting genetic abnormalities.

A. Reporting Physical Abnormalities to AHA

Any AHA member who becomes aware of a possible physical or functional abnormality in an AHA-registered animal shall immediately notify the AHA Director of Breed Improvement at 816-842-3757.

Upon receiving notification of a possible physical functional abnormality, the AHA Records Department will take the following steps to confirm the abnormality and determine if it is genetic in origin:

- Provide the member with an abnormality report form, which the member shall promptly complete and return to the AHA:
- Provide the member with instructions for collecting and submitting for analysis as deemed appropriate blood and tissue samples from the animal in question.

The reporting member shall promptly comply with all AHA instructions regarding the gathering and submission of tissue and blood samples.

B. AHA Genetic Consultant

The AHA will refer confirmed physical abnormalities to a genetic consultant for analysis. The genetic consultant shall be chosen by the AHA Board. Currently the genetic consultant is David Steffen, DVM PhD, from the University of Nebraska. The AHA genetic consultant is responsible for determining if sufficient evidence exists to establish a definite cause of a particular physical abnormality. All AHA members shall cooperate fully in any investigation necessary to such determination. The genetic consultant will advise the Board of diagnostic criteria for established genetic diseases and will evaluate evidence to determine if diagnostic criteria are met. Dr. Steffen will perform these evaluations as a pathologist for the Nebraska University Diagnostic Center.

C. Notification to Owners of Affected Animals and Owners of Parents of Affected Animals

Once a physical abnormality has been confirmed and parentage has been verified, all owners of record of the abnormal animal and owners of record of the parents of the abnormal animal will receive the following information from the AHA:

- A description of the physical abnormality in question.
- The recorded sire and dam of the abnormal animal.
- Whether as a preliminary matter the abnormality appears to be genetic in origin.
- If the abnormality appears to be genetic, what steps are planned to determine whether the parents of the abnormal animal are carriers of the physical abnormality.

D. Notification to AHA Membership

Upon confirmation that an AHA-registered animal has produced a sufficient number of abnormal progeny (at least two confirmed, parent-identified cases or a single positive DNA test — see Section E), the AHA will immediately notify by certified mail the owners of record of the confirmed carrier of the AHA's intent to designate their animal as a confirmed carrier of a genetic defect. Such designation will become final 30 days after mailing of the certified letters.

Any AHA member who may be aggrieved by the AHA's proposed designation of a particular animal as a confirmed carrier of a genetic defect may file a complaint with the AHA Executive Committee at any time prior to the time the designation becomes final. The filing of such a complaint will stay the confirmed carrier designation until the completion of the Executive Committee proceedings and, if necessary, any further proceedings before an arbitrator or the AHA Board. A finding of no probable cause by the Executive Committee shall operate to make the confirmed carrier designation final.

An animal that has been designated as a confirmed carrier of a genetic abnormality shall be placed on a confirmed carrier list, which will be printed as scheduled in the *Hereford World* and which will be available upon request. Animals born before Jan. 1, 1975, will not be included in the list.

If an animal is determined to be a confirmed carrier of a specific genetic abnormality, the AHA shall add a special code to the animal's registration to indicate this fact.

The AHA will not give notice of confirmed or suspected genetic abnormalities to any AHA member or to any owners of related AHA-registered animals except as specifically set out in these rules. Any other notification is the sole responsibility of the owner(s) of the confirmed or suspected carrier parent.

E. DNA Genetic Abnormality Testing

In the case the AHA identifies a gene marker test for a genetic abnormality, animals may be tested to determine carrier status by an AHA approved laboratory. If breeders wish to officially confirm an animal free of a genetic abnormality and designate it as such on the animal's pedigree, then the following guidelines must be met:

- The breeder must request the DNA test kit from the AHA Records Department.
- The results of the test must be returned directly to AHA from the official lab.

F. Classification of Genetic Abnormalities

The AHA currently recognizes the following physical abnormalities that have been confirmed by its genetic consultant to be genetic in origin under certain circumstances:

- **CLASS I (LETHAL)**
 Snorter Dwarfism
 Maple Syrup Urine Disease (Neuraxial Edema)
 Internal Hydrocephalus
 Idiopathic Epilepsy (IE)
- **CLASS II (NON-LETHAL)**
 Hypotrichosis
 Dermoid
 Alopecia/Dyserythropoiesis
 Color Dilutor

G. Description of Defects

• CLASS I (LETHAL)

Snorter Dwarfism

– Symptoms: Undersized, short-legged, short-bodied animal, usually potbellied with noisy breathing. Several different types include a broad-headed, bulging forehead, and a long- and mature-headed kind. X-ray of 10-day-old dwarfs may show abnormal lumbar vertebrae. Most cases are simple autosomal recessive; some forms are incomplete dominance.
 – Confirmation: Pathologic exam

Maple Syrup Urine Disease (Neuraxial Edema)

– Symptoms: Calves will be of normal size at birth. May not be able to get up or lift head. A sudden touch or loud noise may cause a vigorous extension of the legs and neck. Contraction (muscle spasms) may last one or two minutes and can be made to reappear. Simple autosomal recessive.
 – Confirmation: Histopath of nervous tissue or biochemical test

Internal Hydrocephalus (water head)

– Symptoms: Excess fluid is present in the brain which may result in a bulging forehead. Calves are usually born dead or die shortly after birth. Some cases may be environmental. Needs careful diagnosis. Simple autosomal recessive.
 – Confirmation: Gross pathologic exam

Idiopathic Epilepsy (IE)

– Symptoms: Age of onset (occurrence of the first seizure) can be variable, ranging from birth to several months of age. Occurrence and persistence of seizures may be influenced by environmental stressors such as temperature extremes (e.g., extreme cold during calving) or increased physical activity (e.g., processing at vaccination or weaning). Upon initial onset of seizure episodes individuals will typically lie on their side with all limbs extended in a rigid state. Manual flexing of the limbs is possible, but return to the extended position occurs after release. Seizure episodes may last from several minutes to more than an hour. Autosomal recessive.
 – No anatomic abnormalities or histologic lesions detected.
 – Confirmation: AHA approved expert

• CLASS II (NON-LETHAL)

Hypotrichosis (hairlessness)

– Symptoms: Partial to almost complete lack of hair. Affected calves are often born with very short, fine, kinky hair that may fall out leaving bare spots or areas particularly susceptible to rubbing. The condition may vary in expression as the animal matures and is usually less noticeable in older animals. The haircoat color will sometimes appear “frosted” or “silverish.” Tail switch may be underdeveloped. Simple autosomal recessive.
 – Confirmation: Megatrichohyaline granule skin biopsy

Dermoid (feather eyes)

– Symptoms: Skin-like masses of tissue occur on the eye or eyelid. Animals may become partially or completely blind. Polygenic inheritance.
 – Confirmation: Clinical diagnosis with photos or biopsy

Alopecia/Anemia, Dyserythropoiesis

– Symptoms: Short, curly hair, hair loss on neck and shoulder. Progressive generalized hair loss. White areas appear dirty and calves are anemic.
 – Confirmation: Blood test for anemia plus skin biopsy

Color Dilutor

– Symptoms: Carrier Hereford bulls or females when mated to black cattle can produce offspring with a haircoat that is gray, smokey or chocolate color.
 – Confirmation: Clinical diagnosis with photos

H. Lethal vs. Non-Lethal

A lethal genetic abnormality is a genetic abnormality which usually results in death of the animal or production of the animal is significantly impaired causing major economic loss.

Non-lethal abnormalities do not cause death, nor do they significantly affect production or commercial profitability. Non-lethals may, however, cause economic loss to seedstock producers.

I. Breeding to Avoid Abnormalities

Breeders that may have a problem with a simple recessive abnormality can make use of available DNA-based diagnostic tests or implement mating systems designed to reduce the frequency of the abnormal gene in their herds and the breed. Where a DNA-based test is available, breeders can directly test animals for the presence of a specific mutation causing the disease. Animals confirmed to be carriers should be used cautiously, and serious consideration should be given to their removal from the seedstock breeding herd. However, breeders should guard against carelessly throwing away good genetics because a sire or dam is a carrier unless that animal’s good characteristics remain available in the breed from another source. In the absence of a DNA-based test, mating systems should rely on the use of bulls known not to have produced affected calves. Sons of carrier animals can be used if they have been tested free of the abnormality through a series of special test matings. Mating a bull to seven affected females, 17 carrier cows or 35 of his own daughters with no abnormal offspring provides three ways to test for the presence of a recessive gene. With specific regard to non-lethal abnormalities, each breeder must assess the potential economic impact the abnormality may have on his operation.

J. Predicted Outcome of Certain Matings Using Hypotrichosis as an Example

Hypotrichosis (non-lethal) results from homozygosity of a simple autosomal recessive gene. This means that both parents must possess the hypotrichosis gene in order to produce an affected calf. Approximately 25% of the calves resulting from the mating of two carrier animals will be affected, while 50% will be normal appearing but carriers of hypotrichosis, and the remaining 25% will be normal and non-carriers. Possible matings and the predicted outcomes are shown in the table below:

Matings ¹	Affected Hypotrichosis	Unaffected Carrier	Unaffected Normal
hh × hh	100%	0%	0%
hh × Hh	50%	50%	0%
hh × HH	0%	100%	0%
Hh × Hh	25%	50%	25%
Hh × HH	0%	50%	50%
HH × HH	0%	0%	100%

¹hh-affected with hypotrichosis; Hh-carrier; HH-normal