

## **American Milking Shorthorn Society DNA/Genotype Policy**

In an effort to maintain the most accurate and useful genetic information on Milking Shorthorn cattle the AMSS has enacted the following DNA Testing Policies, effective on January 1, 2012. These are an attempt to improve the genetic database we have available as a breed registry, as well as furthering the integrity of our breeders. Updated section 2f is already in effect, but is being included here for completeness. Updated section 2g became effective July 1, 2015. Updates to sections 2b, 2f, 3a, 4c, 5d, 6b, 6c, 6d and 6e became effective July 1, 2016. Updates to sections 3a became effective December 6, 2019. Updates to section 2c became effective January 1, 2020. Updates to sections 2fi became effective January 1, 2023. Updates to section 2g became effective June 20, 2023.

1. All matters of identification and parentage will be accepted as official as determined by the designated laboratory.
  - a. Genotype and DNA results must meet ISAG standards of parentage affirmation for animals typed through a laboratory retained by AMSS.
  - b. As of January 1, 2011 AMSS, working in conjunction with the Holstein Association, USA; the Brown Swiss Cattle Breeders Association of the USA; the American Guernsey Association and the U.S. Ayrshire Breeders Association, has retained the service of Maxxam Laboratories, Guelph, Ontario, Canada for all DNA typing and parentage issues.
  
2. Testing can be initiated by
  - a. Breeder Inquiry: Any breeder/owner can request a test kit from AMSS for testing of animals in their herd. These results will be kept on file with the AMSS. All expenses to be paid by the breeder/owner.
  - b. Random: Every 100<sup>th</sup> female registered with AMSS will be genotyped or DNA typed. If the sire and/or dam have not been genotyped or DNA typed they will be tested as well. All expenses to be paid by AMSS.
  - c. Bulls: All bulls must be genotyped and DNA typed before a registration paper is returned to the breeder/owner. The owner of the bull will be responsible for all expenses for meeting these requirements.
    - i. If the bull is to be used for Artificial Insemination any living parent must have genotyping or DNA testing completed.
    - ii. There is no requirement, at this time, that the parents be genotyped or DNA typed if the bull is used for natural service.
  - d. Executive Secretary: Any animal sold, or exhibited, as registered by the American Milking Shorthorn Society can be genotyped or DNA typed at the discretion of the Executive Secretary. All expenses to be paid by AMSS.
  - e. Breeder Protest: If the Executive Secretary is requested, by a party other than the owner, to test an animal for any reason, the person requesting the examination must first post a \$100 bond with the Executive Secretary. All expenses to be paid by AMSS.

- i. If the parental identification of the animal tested does not match registration records the bond is returned to the person requesting the test.
  - ii. If the parental identification of the animal tested matches registration records the bond is forfeited and deposited in the general fund of the AMSS.
- f. Embryo Transfers:
  - i. All cows used as embryo donors must be genotyped and DNA typed before the offspring can be registered. The owner of the cow will be responsible for all expenses for meeting this requirement.
  - ii. One in every 25 female ET calves registered with AMSS will be genotyped or DNA typed. All expenses to be paid by AMSS.
- g. National Show Champions: Animals winning one of the following titles at an AMSS National Show must be genotyped and/or DNA typed to maintain their title. This includes both Junior and Open divisions. All expenses to be paid by AMSS.
  - i. Junior Champion
  - ii. Reserve Junior Champion
  - iii. Intermediate Champion
  - iv. Reserve Intermediate Champion
  - v. Senior Champion
  - vi. Reserve Senior Champion

### 3. Sampling Process:

- a. To ensure accuracy of samples and to protect both AMSS and the breeders/owners the following requirements will be adhered to:
  - i. Breeder Inquiry, Bulls & Embryo Donors: Samples may be collected by breeder/owner or their chosen representative.
  - ii. Random and ET Females: Samples may be collected by breeder/owner or their chosen representative.
  - iii. Executive Secretary, Breeder Protest: Samples must be collected by a veterinarian, show/sale superintendent, other breed Executive Secretary or breed representative in the presence of an AMSS representative.
  - iv. National Show Champions: Samples must be collected by a veterinarian, show superintendent, other breed Executive Secretary or breed representative in the presence of an AMSS representative.

### 4. DNA Sample Results:

- a. All matters of identification and parentage as determined by the designated laboratory will be accepted as official.
- b. Positive Parental Identification:
  - i. No action necessary – registration confirmed.
- c. Negative Parental Identification:
  - i. Parentage Known: Adjust registration type (herdbook level) as necessary of tested animal and offspring to accurately reflect true parentage.

1. Awards and show winnings retained if new registration type is eligible.
  2. Awards and show winnings revoked if new registration type is ineligible. Animals following in rank order all move up one placing. Notification made by AMSS.
  3. If the animal in question has a registered name which includes the name of the negative parent relation, the registered name must be updated to prevent misleading, or confusion, of other breeders.
  4. All registration paper corrections needed (animal and any offspring) will be paid for by the breeder.
- ii. Parentage Unknown: Registration paper revoked and registration of any offspring adjusted with tested parent listed as Grade Shorthorn.
    1. Awards and show winnings revoked. Animals following in rank order all move up one placing. Notification made by AMSS.
    2. If the animal in question has a registered name which includes the name of the unknown parent relation, the registered name must be updated to prevent misleading, or confusion, of other breeders.
    3. All registration paper corrections needed (animal and any offspring) will be paid for by the breeder.
5. Genotype Sample Results:
- a. All matters of identification and parentage as determined by the designated laboratory will be accepted as official.
  - b. Positive Parental Identification:
    - i. No action necessary – registration confirmed.
  - c. Negative Parental Identification:
    - i. Identical to DNA (Section 4c)
  - d. Negative Grandparent (MGS, etc...) Identification:
    - i. Any live parents tested immediately.
    - ii. Parentage Known: Adjust registration type (herdbook level) as necessary of tested animal, parent and any relations to accurately reflect true parentage.
      1. Awards and show winnings retained if new registration type is eligible.
      2. Awards and show winnings revoked if new registration type is ineligible. Animals following in rank order all move up one placing. Notification made by AMSS.
      3. If the animal in question has a registered name which includes the name of the negative parent relation, the registered name must be updated to prevent misleading, or confusion, of other breeders.
      4. All registration paper corrections needed (animal and any offspring) will be paid for by the breeder.

- iii. Parentage Unknown: Tested animal's registration type (herdbook level adjusted). Registration paper of grandparent revoked and registration of any offspring adjusted.
  1. Awards and show winnings retained if new registration type is eligible.
  2. Awards and show winnings revoked if new registration type is ineligible. Animals following in rank order all move up one placing. Notification made by AMSS.
  3. If the animal in question has a registered name which includes the name of the unknown parent relation, the registered name must be updated to prevent misleading, or confusion, of other breeders
  4. All registration paper corrections needed (animal and any offspring) will be paid for by the breeder.

#### 6. Negative Result Follow-Up Actions

- a. Correction of registrations and offspring as stated above.
- b. If actual parentage can be confirmed in a timely manner no follow-up actions will be pursued.
- c. If actual parentage is not determined in a timely manner, then a maximum of 5 additional animals bred by the breeder/herd unit will be DNA typed.
- d. If a breeder/herd unit has 2 or more negative parentage issues within a five-year period, the issue will be brought to the AMSS Board of Directors for additional action (Breeder inquiry exempt). Follow up actions may include:
  - i. Testing of all animals registered in the following 12–24-month period,
  - ii. Random testing of additional animals from the breeder/herd unit,
  - iii. Complete testing of all animals bred by the breeder/herd unit, and/or
  - iv. Elimination of registration and loss of membership as indicated by the Amended By-Laws.
- e. All follow up testing (including additional tests to confirm parentage) to be paid by the breeder/herd unit.

#### 7. Non-Cooperation of Breeders

- a. If a breeder refuses to adhere to the above policies, and no progress can be made by the Executive Secretary, Article XV of the Amended By-Laws will be invoked.
  - i. This may lead to elimination of registrations and loss of membership.