Required Testing

**Genotyping:** The ADCA requires that the DNA Genotype of all bulls used for breeding be on file in its Registry Office before calves sired by those bulls can be registered. This is true for AI bulls (post 2003) as well.

Genotyping is a means of ensuring the purity of the Dexter Cattle breed. If there is a parentage question on a calf, the genotype of the bull will already be on record and can be used to determine the sire of the calf. Many breeders are beginning to genotype all of their animals. If both the sire and the dam have been genotyped, then the offspring can be parentage verified at the same time its genotype is done. However, at this point, it is not mandatory to genotype the dam.

**Color Testing for Red:** If a red calf is born of parents that are not red (one or more of the parents is dun or black), then the calf must be color tested for red in order to be registered as red. If the calf is not tested in this instance, then it will be registered as dun by default.

Voluntary Testing

**Chondrodysplasia:** Some Dexter Cattle carry a genetic mutation called Chondrodysplasia. This gene is dominant to the non-mutated version, causing defective bone growth which results in short-legged, heavy bodied animals when the animal inherits one normal gene and one mutated gene from its parents. Many people find this short legged animal to be quite appealing. However, the gene will be lethal to a fetus that inherits the Chondrodysplasia gene from both parents. This homozygous inheritance produces a “bulldog” calf – grossly deformed and dead. To avoid any possibility of producing a “bulldog” calf, always breed a Chondrodysplasia carrier with a non-carrier.

Here are the probability statistics involved in breeding Chondrodysplasia Positive Dexters:

Breeding two non-carriers:
- 100% chance of producing a non-carrier calf
- 0% chance of producing a carrier calf
- 0% chance of producing a “bulldog” calf

Breeding a carrier to a non-carrier:
- 50% chance of producing a non-carrier calf
- 50% chance of producing a carrier calf
- 0% chance of producing a “bulldog” calf

Breeding two carriers together:
- 25% chance of producing a non-carrier calf
- 50% chance of producing a carrier calf
- 25% chance of producing a “bulldog” calf
In order to be better informed so that a breeder can establish successful breeding decisions, it is recommended that animals be tested for Chondrodysplasia if there is any suspicion or possibility that the Dexter may be a Chondrodysplasia carrier. When an animal’s Chondrodysplasia status is genetically known, the possibility of producing a “bulldog” calf can be avoided altogether.

Chondrodysplasia testing is not mandatory, therefore test results are not required to be reported to the ADCA for registration purposes.

**PHA (Pulmonary Hypoplasia with Anasarca):** Some Dexter Cattle carry a genetic disease called PHA. This gene is recessive and produces no symptoms in an animal that inherits only one PHA gene from its parents. However, the gene will be lethal to a fetus that inherits the PHA gene from both parents. A calf that inherits the PHA gene from both parents will have undeveloped lungs (pulmonary hypoplasia) and will accumulate excessive fluid in its tissues and body cavities (anasarca), thus becoming grossly swollen. Often, this calf is so swollen with fluids that the dam may not be able to successfully deliver it and will require veterinary intervention to preserve her life.

Here are the probability statistics involved in breeding PHA Positive Dexters:

Breeding two non-carriers:
- 100% chance of producing a non-carrier calf
- 0% chance of producing a carrier calf
- 0% chance of producing an affected (dead) calf

Breeding a carrier to a non-carrier:
- 50% chance of producing a non-carrier calf
- 50% chance of producing a carrier calf
- 0% chance of producing an affected (dead) calf

Breeding two carriers together:
- 25% chance of producing a non-carrier calf
- 50% chance of producing a carrier calf
- 25% chance of producing an affected (dead) calf

In order to be fully informed so that a breeder can make responsible and successful breeding decisions, it is recommended that animals be tested for PHA if there is any suspicion or possibility that the animal may be a PHA carrier. When a Dexter’s PHA status is genetically known, the possibility of producing a PHA affected calf can be avoided altogether. Breeding only non-carriers always produces non-carriers.

**Special Note:** PHA and Chondrodysplasia are two separate genetic conditions. They have no relationship to one another. Dexters may carry none, one or even both of these genes. It is possible for a Chondrodysplasia carrier to be a PHA non-carrier. Conversely, a PHA carrier could be a non-carrier of Chondrodysplasia. The only way to know a Dexter’s PHA and/or Chondrodysplasia status is by knowing that the parents are non-carriers or by genetically testing them.
**Milk Testing:** Of the protein found in cow's milk, about 1/3 of it is made up of a protein called Beta Casein. There are two Beta Casein variants: A1 and A2. There are ongoing studies to determine if the A2 variant is more beneficial to humans than the A1 variant. A cow with only one of these variants (A1A1 or A2A2) will only produce that protein in her milk. If a cow has both proteins (A1A2), then she will produce both proteins in her milk. This test is for breeder use only. Results are not reported on the pedigree or the Certificate of Registration by the ADCA. This test is licensed to the ADCA approved labs by the a@ Milk™ Company.

**Polled Testing:** Both ADCA approved labs offer a test for polledness. The test is not mandatory to provide that a Dexter is polled. It is useful, however, to determine if the animal is heterozygous polled or homozygous polled.