

DNA Sample Collection Basics

While DNA tests have advanced to a technology with endless capabilities, the entire process is dependent on a step that includes little, if any, science—a properly collected DNA sample. Although DNA technology and its associated DNA sample have become part of our general 'know how', it has been estimated that approximately 30% of samples don't meet quality control standards. The two leading causes for a sample to fail quality control standards: Insufficient DNA to perform the requested test; or, sample contaminated with foreign material such as manure. Application of the below information will increase your ability to deliver quality DNA samples.

Hair Sample

- The useable DNA is located in the hair follicle (hair root).
- Collect hair sample from the middle of the animal's tail switch (end of tail).
- Minimums of 20 to 30 follicles are needed per sample.
- Follicles on young calves contain reduced amounts of DNA; therefore, 40 to 50 follicles are needed per sample.
- Hair must be clean from manure, mud, etc. If necessary, wash foreign matter off the tail prior to collecting sample.
- Collected sample must be dry. Wet samples quickly deteriorate.
- Place hair sample into 'hair card' as soon as it's collected. Don't place in Ziploc bag chute-side.
- Keep collected sample out of direct sunlight and/or extreme temperatures.
- Hair samples can be shipped in a standard shipping box or padded envelope.
- Subject to \$1 lab processing fee.

FTA Blood Card (Recommended)

- Ideal sample locations include the animal's ear or the underside of the tail.
- Use a NEW needle or pricking device for each animal. DO NOT simply wash the needle/pricking device between each animal, as this does not prevent cross-contamination.
- Ensure that the location of the animal in which the sample will be collected is clean.
- Fill the entire pre-printed circle on the FTA card with blood, but don't flood the card.
- Allow collected blood to dry, not in direct sunlight, prior to storing the sample.
- Don't allow direct contact between collected FTA cards, as cross-contamination can occur.
- Keep collected sample out of direct sunlight and/or extreme temperatures.
- Blood samples can be shipped in a standard shipping box or padded envelope.

Semen

- The greatest risk with semen is samples damaged during shipment to lab.
- Carefully package semen straw in a protected manner. The preferred method is inside an ink pen with the cartridge removed. Another optional method is between pieces of cardboard in a padded envelope or wrapped in bubble wrap.
- Place each individual packaged semen straw in a Ziploc bag. This prevents cross contamination in the case that a straw leaks.
- Semen samples do not need to be shipping in liquid nitrogen; however, it is good practice to keep the semen in a deep freezer until shipped.

DNA Sample Submission Instructions

Order Form contains multiple 'Tabs' (found at the bottom of the screen). To select a specific Tab, simply place your cursor over the Tab name and single click left mouse button.

Step 1: Complete RAAA Parentage and Genetic Defect DNA Order Form

- Provide complete animal identification information.
 - For non-registered animals, include all identifying information such as Date-of-Birth(DOB), ID/Prefix, and Sex.
 - For Registered animals, include all identifying information DOB, ID/Prefix, and Sex.
- Barcode number can be found on the back of DNA Kit. Typically a 10 or 11 digit number.
- If semen is provided as the DNA sample, provide the NAAB Semen Code

Genetic Defect Tests:

- Indicate each requested genetic defect test by placing a Y in the respective column.

Parentage:

- Request parentage by placing a Y in the Parentage column.
- If sire/dam is not an RAAA registered animal, provide breed assoc. information with Reg#
Ex: Canadian Angus = CAN#####, American Angus = UAN#####, Simmental = USM#####
- If multiple sire/dam breeding groups were used, specify the sire group (single letter or number) for each progeny and complete the Multi-Sire Breeding Groups sheet. See Step 2.

Pricing

Scientific Name	Abbrev	Common Name	Price
Arthrogyrosis Multiplex	AM	Curly Calf	\$20
Contractural Arachnodactyly	CA	Fawn Calf	\$20
Alpha-Mannisodosis	MA	--	\$20
Neuropathic Hydrocephalus	NH	Waterhead	\$20
Osteopetrosis	OS	Marble Bone	\$20
Developmental Duplication	DD	--	\$25
Parentage (per sample)			\$15
All parentage will be performed using SNP technology.			
GGP-HD			\$90
Includes Parent Verification, OS, and MA testing			
GGP-LD			\$48
Includes Parent Verification, OS, and MA testing			
GGP-ULD			\$34
Includes Parent Verification			
* GGP-HD, LD & ULD require registration number for submission			
Neuropathic Hydrocephalus (NH) added to Genomic Merit testing			\$10
Bovine Viral Diarrhea (BVD) - Hair or Tissue Sample Only			\$7
Added to Parentage or Defect Test			
			\$4
Hair Sample Subject to Lab Processing Fee			\$2
*Rush Charges (per order) when applicable			\$50
*Rushed charges are only applied when workload requires an order be pulled			

Step 2: Complete Multi-Sire/dam Breeding Groups Sheet (if applicable)

- List ALL sires/dam who potentially parented the submitted offspring.
- Sires MUST be identified with a registration number. If reg# is not RAAA, include breed assoc.
Ex: Canadian Angus = CAN#####, American Angus = UAN#####, Simmental = USM#####

Step 3: Submit Order to RAAA:

Mail completed and signed Order Form and Samples to: or E-mail order form to DNA@RedAngus.org
RAAA ATTN: DNA Samples 4201 N. I-35 Denton, TX 76207

Multi-Sire/Dam Breeding Group Information

(Complete for Multi-Sire Pastures)

If sample is enclosed for sire/dam also list on Order Form and mark Parentage.

Breeding Group: _____

	Association	Reg #	Tattoo	Sample Enclosed?
Sire 1				
Sire 2				
Sire 3				
Sire 4				
Sire 5				
Sire 6				

Breeding Group: _____

	Association	Reg #	Tattoo	Sample Enclosed?
Sire 1				
Sire 2				
Sire 3				
Sire 4				
Sire 5				
Sire 6				

Breeding Group: _____

	Association	Reg #	Tattoo	Sample Enclosed?
Sire 1				
Sire 2				
Sire 3				
Sire 4				
Sire 5				
Sire 6				

Breeding Group: _____

	Association	Reg #	Tattoo	Sample Enclosed?
Sire 1				
Sire 2				
Sire 3				
Sire 4				
Sire 5				
Sire 6				

*This breeding group page can also be utilized for listing multiple dams.