

UF-Gainesville Beef Cattle News Corner

Tips for collecting a good sample for DNA

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Once you have decided to invest in genomic testing of your cattle, it is important to make sure you get a good quality sample for DNA to insure you're making the most of your investment. Below are some tips for the most common methods of collecting samples for DNA.

Hair Samples. There are two key steps in getting a good hair sample: making sure that you have enough follicles (roots) and keeping the sample free of manure. At least 30 roots are needed to get a good sample but collecting 50-60 is recommended to insure that there is enough material to collect DNA. This is also recommended when collecting horse hair samples for AQHA or other breed associations.

Collecting hairs from the switch (long hairs at the end of the tail) rather than the tail head usually results in more hair follicles. Pulling the switch hair back towards the animal instead of straight down from the tail can also help to get a better sample. Hair can be pulled by hand or with pliers. When collecting from the switch, it can be more difficult to make sure the hair is free of manure. Manure contains small amounts of DNA from many sources and can contaminate your sample. Whether pulling the hair by hand or with pliers, it is also important to avoid transferring manure from one cow onto all of the following samples. This can lead to lots of contamination and make it hard to analyze the samples.

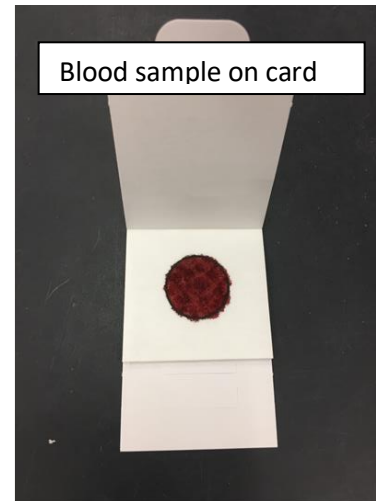
When placing the hair sample in the card be sure to place the root end of the hairs into the card and seal with the plastic cover. If the hair hangs out over the card you can trim the ends off. Be sure to check that you have placed the root end in the card before trimming. Close the cover tab. Always make sure that the cards are correctly labeled. Hair samples are typically the easiest to collect but cannot be collected in animals under 3 months old because the hair follicles will not yet be developed enough.



Trimmed hair sample placed in card



Blood Samples. Unlike hair samples, blood samples can be collected even from newborn calves. Blood can be collected from the ear, tail or jugular veins. Only a few drops of blood are required. It is important to make sure the area where the blood is collected from is free of dirt and manure, especially when collecting tail blood. Remember, manure will contaminate your sample. Also, always use a new needle for each animal. Reusing needles between animals will contaminate the sample. Once the blood is collected, drip or squirt a few drops on the card, filling the circle. Do not wipe the needle on the card, this can also cause contamination. Be sure to let the card sit open and air dry before closing. If the card is closed too soon and the blood sticks to the top of the card the sample will not be useable. Always check that the card has been correctly labeled.



Ear notches. Special ear notches, also known as tissue sampling units, can also be used to collect DNA. Unlike the traditional ear notch used at marking and branding, this requires a special applicator and keeps each ear notch in its own bar-coded vial. This means the samples are immediately labeled and can even be ordered to match with the ear tag number. There is also very little chance of contamination with this system compared to hair or blood samples. However, because it requires its own applicator it is also more expensive.



Whether you are collecting samples for DNA from hair, blood or ear notches, always be sure to label your samples correctly and avoid contamination in order to get the best possible sample and the most accurate results.