



By the Numbers

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A new tool for DNA collection

Collecting DNA has become a mainstream management procedure for many breeders. In order to save time when processing cattle through the chute, many have perfected their technique when collecting blood or hair samples. However, a new DNA collection method may make this process even more streamlined.

What is it?

A tissue-sampling unit, or TSU, collects an ear punch from an animal that can replace the tail hair, blood, semen or other sample type used for DNA testing. This collection method provides a quick and cost-effective way of collecting DNA to then be used for parentage verification, genetic condition testing, genomic profiling and even bovine viral diarrhea (BVD) diagnostics.

Fig. 1: Tissue-sampling unit



Fig. 2: Tissue-sampling applicator



How does it work?

Much like tagging an animal, the TSU has a special applicator gun. The applicator gun punches a small bit of ear into a specialized container. The tissue can be collected in seconds with a single squeeze motion of the tissue-sampling applicator with minimal stress on the animal. It is recommended the animal be restrained in a head lock when sampling. Ear punches should be extracted from the ear

approximately 1 inch (in.) away from the head and 1 in. away from the outer ear to ensure good sample collection.

Using a TSU helps to guarantee that enough genetic material is being captured each time and that the DNA remains clean and uncontaminated.

The DNA is

encapsulated in the TSU, which is filled with a specially designed preservative allowing the sample to be stored at room temperature for up to a year's time. Producers should keep the sample away from direct sunlight.

If storing the sample for longer than a year, it is recommended the sample be frozen.

Because one DNA sample collected via TSU can be used for both genomic testing and BVD diagnostics, breeders will be able to order BVD testing through AGI when using TSUs. Members will order BVD testing as an add-on to other genetic testing. This BVD testing must be completed and ordered at the first instance of testing. These diagnostics cannot be run on individual samples once they have been tested and archived.

Why now?

While this is not a new concept for some breeders, the technology has just been proven

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suitable for use in Angus seedstock testing. Prior to this, it was unknown if individual samples could be properly archived (or stored) in order to be used for additional future testing. Much work has been done by industry partner Allflex, and both contracted labs AGI works with to guarantee sample archival can take place.

Members can now order TSUs by logging into AAA Login. These devices can be purchased in a box of 10 for \$29.99. That's about \$2.99 per unit.

It is important to note breeders wanting to take advantage of this time-saving technology must send in an electronic spreadsheet to the AGI customer service representatives stating both the animal ID (tag, tattoo, etc.) and barcode associated with the DNA sample. This will ensure the correct tests are ordered for each individual animal and, more importantly, the correct test results are assigned to each animal.

AGI will still accept both blood and hair samples for genetic testing for members wanting to use them. Remember, when sending any DNA sample for testing, be sure to send samples directly to AGI at 3201 Frederick Avenue, Saint Joseph, MO 64506. Samples should never be sent directly to a contracted lab for any purpose. For more information on using TSUs for sample collection, visit www.angus.org/AGI/SubmittingSamples.aspx or call the office at 816-383-5100.

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