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to order, or visit NEOGEN.com

The Advantage of Tissue Sampling Units (TSUs)



One simple step opens a whole world of insightful predictions

FAST Loading the applicator, taking the sample and recording the animal ID can take as little as ten seconds per head.

EASY With one squeeze, a DNA sample is taken, sealed and preserved in a uniquely barcoded vial.

CLEAN Unlike blood or hair, TSUs have little chance for cross-contamination. The vial protects the sample from weather and grime.

FLEXIBLE Take DNA while handling young calves or during routine animal-health protocols.

Allflex Tissue Sampling Units (TSU) are a rapidly growing sample type for DNA testing in livestock. This technology, while highly advanced, makes it easy to take DNA samples during routine cattle-handling processes while providing high-quality samples for genomic testing. NEOGEN® has worked closely with Allflex to enhance the convenience and reliability of DNA testing in the field.

Why TSUs?

- Faster, easier, and cleaner
- Less hassle, more weather proof
- Sample at any age, even a day-old calf
- Uniquely barcoded, preserves high-quality DNA

More benefits with TSUs:

More data from one sample

- Tissue in the vial can be used for multiple tests
- Screen samples for BVD PI and run genomic tests
- Store at the lab or breed association for future testing

Integration with animal ID

- Match with visual tags and/or EID tags using the same identifier
- Integrate with other record keeping or data collection
- RFID readers and downloadable CSV files are available from Allflex
- A new handheld device from Allflex combines a barcode scanner and EID reader for chute-use. (See more at AllflexUSA.com)
- As export markets look to U.S. beef producers, the needs of ID change. Your ID and TSU system can meet your needs both in marketing and DNA testing

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The Do's and Don'ts of TSU Sampling

The Do's

- Sample calves as soon as possible for the earliest results
- Wipe off any excess dirt with water and towel
- Position cutter approximately 1 inch from the edge of the ear, avoiding veins
- Squeeze handles together in one swift, fluid, motion with enough force to pierce the ear
- Check to ensure sample is present and submerged in buffer and that excess hair isn't protruding from the top
- Remove cutter by pulling handles apart
- Store samples in dark, temperature controlled room for up to 12 months
- For long term storage (over 12 months), place samples in deep freezer without auto-defrost capability

The Don'ts

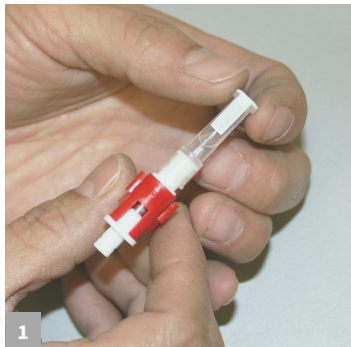
- Sample "wet" calves – the placenta and fluid could cause a failed sample
- Use chemicals to clean off the ear – bleach degrades DNA
- Position cutter over any tattoo ink
- Squeeze handles together with excess force (shouldn't take as much as ear tagging) that would damage the TSU
- Place TSU in box without ensuring sample is present
- Use pliers to remove cutter
- Place samples in direct sunlight or heat
- Store samples in auto-defrost freezers – such as the one in your kitchen

IGENITY® TISSUE SAMPLE INSTRUCTIONS

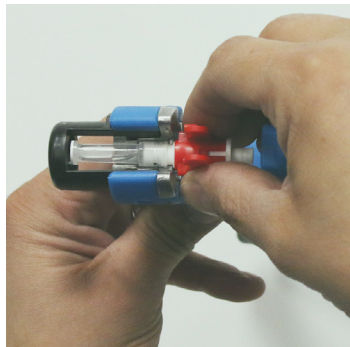
PLEASE READ KIT INSTRUCTIONS COMPLETELY BEFORE PERFORMING TEST.



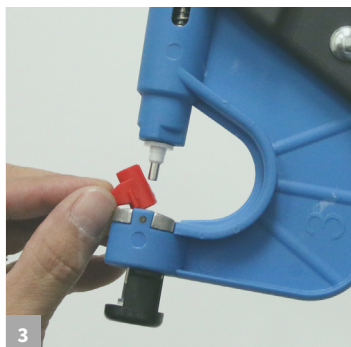
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1
Remove TSU punch from the packaging. Punches should be assembled as one piece; if they have come apart, reassemble. Align the groove of the punch with the chamber at the base of the applicator.



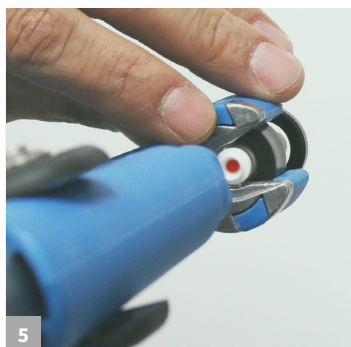
2
Rotate the black chamber to lock the punch into the device. Carefully squeeze the applicator handles together, guiding the punch tip into place if necessary. When the gun bolt rests flush against the red plastic clip, release the handle.



3
Remove the red plastic clip by pulling it outward. Be careful as the metal cutter above the clip is very sharp. Ensure the applicator is loaded with an unused green punch (if the red plunger is visible, the punch is used and should be replaced with one that is unused).



4
Slide the applicator over the animal's ear and position the metal cutter one inch from the edge of the ear, making sure to avoid any obvious veins or ridges. Squeeze handles together to take a sample and then release to free the ear. Try to do this in one swift, fluid, motion.



5
Reopen the chamber and remove the punch from the applicator. Check that sampling has been successful (red plunger is visible, sample is in fluid in punch). Remove the used cutter from the applicator by pulling the handles apart. Discard carefully as the cutter is very sharp.



IGENITY HAIR SAMPLE INSTRUCTIONS



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1 Pull (do not cut) hair from the tail switch, not tail head. Pull hair in the opposite direction from which the hair is laying. This results in less breakage than pulling straight out from the tail.



2 Make sure hair is free of fecal material and dirt. Save the hair roots (follicles), which contain the DNA.



3 Roots must be clearly visible. Approximately 30 hair roots are needed. For animals with finer hair, a minimum of 50 to 60 hairs is desired. For animals younger than three months, TSUs are recommended since hair roots will likely not be visible.



4 Open the collector and peel back the plastic cover. Insert the root end of hairs in the middle of the collector. Seal the plastic cover over the hair roots and then close the collector cover tab.



5 Trim excess hair extending from the collector. Write animal ID and other information in the spaces provided (do not cut off follicles, which contain the DNA).



6 Properly record animal IDs on the collector cards and correctly enter that information on your order form to match the DNA to the animal.



IGENITY® BLOOD SAMPLE INSTRUCTIONS

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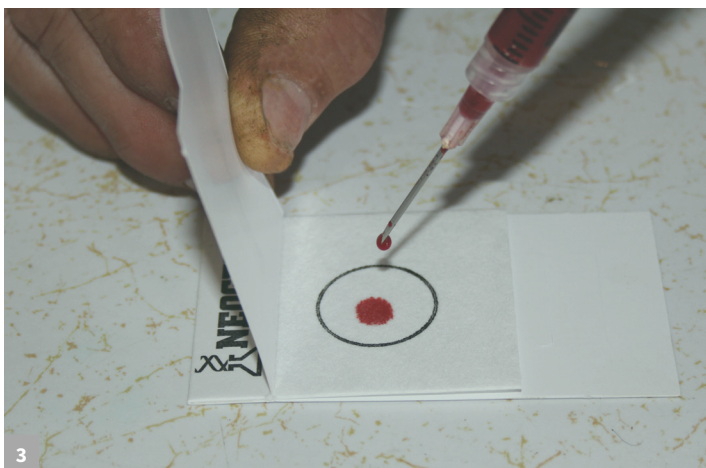
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Appropriately restrain the animal. Locate a blood vessel, visually or by feel. Clean the area so the sample is not contaminated with dirt or manure. Use a clean needle or lancet for every animal.



Blood can also be sampled with a syringe or blood tube from the vein on the underside of the tail. This may be easier than sampling blood from an ear vein that is covered with long, thick hair.



Collect two to three drops of blood on the collector portion of the collection card by allowing the blood to drip or squirt onto the card. Do not wipe the needle, ear or tail on the collection card. Discard the needle in an appropriate disposal container.



Before placing blood drops on blood cards, write an accurate name and animal ID in the spaces provided. Let the cards sit open and air dry before closing cover flap. If blood is sticky and gets on the top of the card, the sample is not useful.

