COLLECTING SAMPLES FOR DNA TESTING IN SWINE

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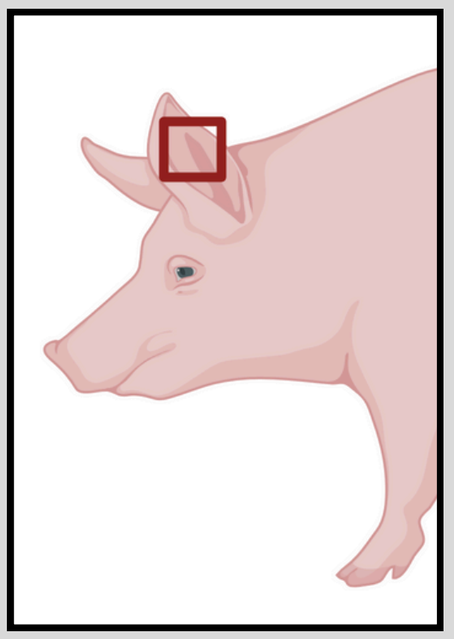
There are three major sample collection methods for DNA testing in swine: tissue, blood, and hair bulbs. Ease and flow of sampling, storage of materials before and after collection, and cost are all important considerations for determining which method to use.

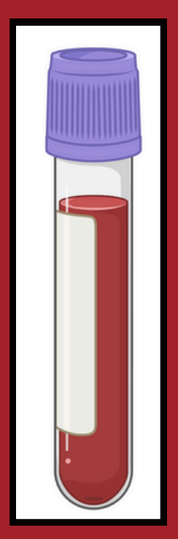
TISSUE SAMPLING UNITS (TSU)

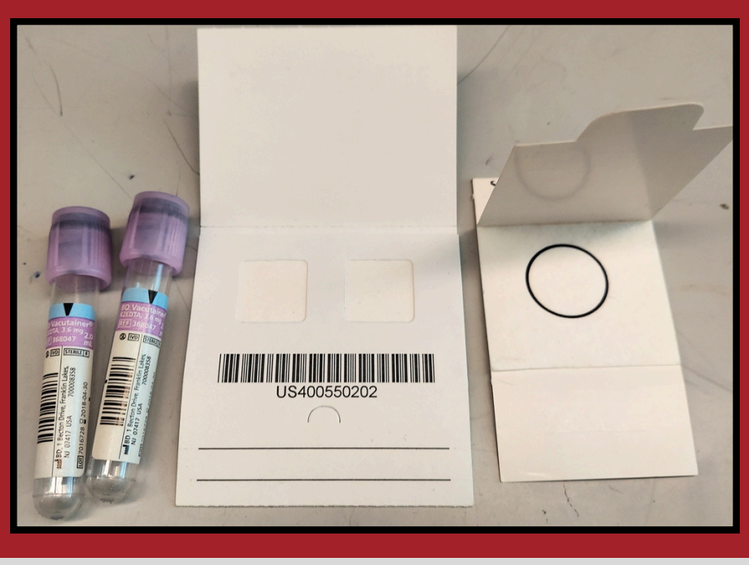
- Tissue sampling units, or TSUs, punch a small tissue sample from the ear into a tube with preservation solution.
- This sampling procedure can be combined with tagging, when the sample is taken at the same time as the tag is inserted into the ear.
- TSUs can be stored at room temperature in a cool, dry place before shipping at room temperature.



WHOLE BLOOD & BLOOD CARDS

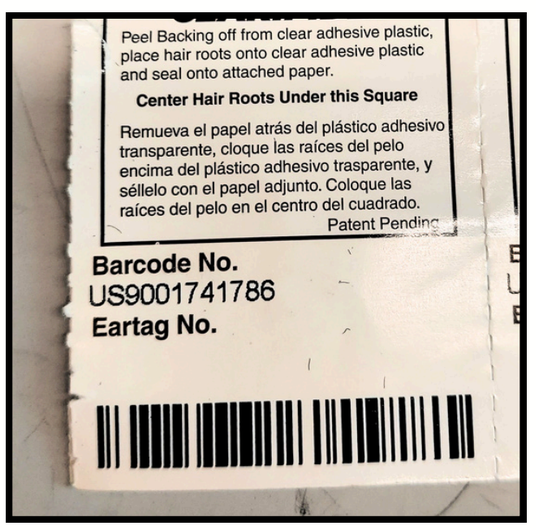
- Blood can be collected from a tail or jugular draw into a purple top tube (containing EDTA to prevent clotting).
- Whole blood should be stored in the fridge and shipped within a few days on ice packs.
- Blood can also be spotted onto a FTA blood card covering the entire circle or square on the card, and be sure to let the card dry before storing in a cool, dry place.
- Blood cards can be shipped at room temperature.

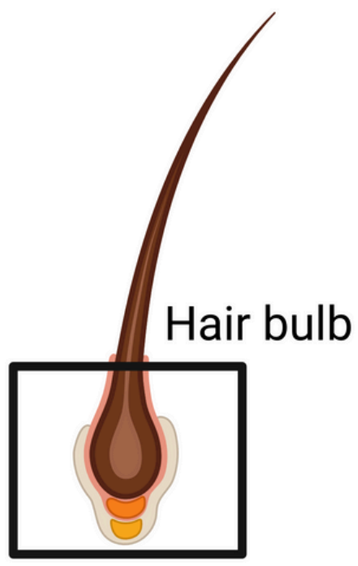




HAIR BULBS

- Hair should be pulled and not clipped from the animal. First, comb out dirt and loose hairs from the area.
- Use a clean tool such as pliers to pull 20-30 hairs from the poll or neck area.
- Make sure to get the hair bulbs or roots, as these contain the DNA. Hair can be placed in hair cards with adhesive, stored in a cool, dry location and shipped at room temperature.





SAMPLING TIPS

- Keep detailed and clear records during sampling to prevent duplicated or skipped animals.
- Make sure samples are not contaminated with manure, dirt, and debris.
- Clean sampling tools between animals to prevent cross-contamination of DNA.
- Store samples out of sunlight and heat, and ship accordingly to prevent DNA degradation.

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REFERENCES AND ADDITIONAL RESOURCES

- DNA collection brings value to cattle producers. Scott Holt, Merck Animal Health. https://www.merck-animal-health-usa.com/species/cattle/cattle-insights/beef/value-of-cattle-dna-collection.

- DNA sample collection. Megan Rolf, Oklahoma State University and eBEEF.org. https://beef-cattle.extension.org/wp-content/uploads/2019/09/2015-2_DNA_Sample_Collection_Arial.pdf.

- DNA testing: News you need to know. Doug Newcom, National Swine Registry. https://nationalswine.com/resources/docs/DNA_testing_story.pdf.

- Pig DNA collection. UC Davis Veterinary Genetics Laboratory. https://vgl.ucdavis.edu/sample-collection/pig.

- SOP: Blood collection in swine. Virginia Tech University Veterinarian & Animal Resources. https://ouv.vt.edu/content/dam/ouv_vt_edu/sops/large-animal/sop-swine-blood-collection.pdf.

- Tissue sampling unit DNA collection. Neogen. https://www.neogen.com/neocenter/blog/tsu-dna-collection/.

For more information, visit: https://wpnetwork.extension.wsu.edu/animal-genomics/

QUESTIONS? CONTACT US!

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