

RUM_030 Collection of tail hairs (for DNA/15N analysis)

I. OBJECTIVE

To describe a standard tail hair collection procedure in cattle for the purpose of DNA analysis.

II. DEFINITIONS

Competent - “the consistent application of knowledge and skill to the standard of performance required regarding the care and use of animals. It embodies the ability to transfer and apply knowledge and skill to new situations and environments.” (as per, Australian code for the care and use of animals for scientific purposes, 2013)

III. COMMENTS / RECOMMENDATIONS

- Try to select clean hair uncontaminated with dirt or faeces, as contaminants have the potential to negatively impact assay results. Minor contaminants may be trimmed away where the hair roots are enabled to remain intact.
- **IMPORTANT: ALWAYS PULL UP FROM THE SKIN WHEN REMOVING HAIR; PULLING DOWN CAN CAUSE PAIN FOR THE ANIMAL AND THERE IS INCREASED RISK OF BREAKING THE HAIR** (i.e. always pull against, or perpendicular to the grain of the hair, not in line with the grain of the hair)

IV. EQUIPMENT

- Suitable animal restraint equipment (e.g. cattle yards and crush)
- Hair sample collection bag, envelope, or card
- Permanent marker
- Personal Protective Equipment (PPE), as required, including protective gloves

V. PROCEDURE

1. Restrain animal using a head bail or crush
2. Grab the tail of the animal
Care must be taken when reaching through bars of the race/crush to avoid hands being crushed if the animal moves suddenly
3. Select long hairs from the tail. Wrap 10 to 20 hairs around your fingers and pull upwards with a short, sharp movement to remove the hairs.
The bulbous hair roots, plucked from under the skin MUST be included in your sample (these structures contain the cells from within the follicle bulb which contain DNA, not those in the hair shaft). These bulbous hair roots should be clearly visible at the end of the hairs.

If collecting hairs from multiple animals in succession, a pen, pencil or other similarly shaped cylindrical object may be used to secure and remove the hairs, instead of using the operators' fingers. This is done by wrapping the hairs around the object following a similar method to step 2. If using an object as such, it is critical that only 10-20 hairs are removed at one time, this is because of the potential for increased force applied when using an object (as compared to fingers).
4. Repeat step 3 until you have the desired number of hairs (approximately 20 for 15N analysis, 30 to 40 for DNA analysis).
5. Prepare the sample for laboratory submission. Labelling for which should include at least the date of collection and the animal number (i.e. a unique identifier which enables individual animal identification).

Conditions:

- Investigators named in an animal ethics application, relative to this SOP, must be competent to implement the SOP
- Any variation to this SOP must be described in the relevant animal ethics application
- If this SOP has not been reviewed and approved by a UQ AEC within the last three years it is no longer valid and cannot be used in animal ethics applications until reapproved (see “AEC Reviewed/Approved” date in this document’s header).

For hair sample bags and envelopes - tie a loose knot in the hair to keep them together and place them into a clearly labelled sample collection bag or envelope.

For hair sample cards – tape the sample to the clearly labelled sample card and trim the excess hair ends.

VI. REFERENCE INFORMATION

Zoetis, 2013. Fact sheet: How To Collect High-Quality Hair Root Samples. Available from:

https://www.zoetisus.com/locale-assets/mcm-portal-assets/products/publishingimages/genetics-images/dna-collection-guides/hairsamplecollection_06072013.pdf

Version #	Reviewing AEC (note: all other relevant AECs ratify the approval)	AEC Review Date	Approval To Date
2	PCA	16/03/2022	16/03/2022

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