

# Maternal Shedding R&D Project

*Understanding the genetic variation in shedding characteristics of sheep to develop a shedding breeding value*

## Project Objectives

- Increase** the volume of genotypes and phenotypes for shedding sheep in LAMBPLAN
- Establish** scoring protocols to capture shedding characteristics to aid selection
- Research** the genetic architecture behind why shedding occurs
- Develop** genomically enhanced breeding values to help select for shedding sheep
- Quantify** the genetic relationships for shedding with production and key easy care characteristics

## Why are we interested?

- Provide** confidence in selection of sires to transition to a maternal shedding flock
- Allow** balanced selection for shedding so production gains are maintained
- Understand** the capacity to incorporate non-shedding genetics into a shedding flock
- Develop** easy care sheep that can service the prime lamb markets

## Project Timeline

**ASBV Scoring Protocols Released**

*End of 2024*

**Shedding RBVs for Industry**

*End of 2025*

**Shedding ASBVs for Industry**

*Aiming for Autumn 2027\**



**Providing tools to aid transitioning to a shedding flock**

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## What we know so far.....

Viability of sheep production systems can be impacted by the varying prices of commodities, such as labour and feed, and proceeds from wool and meat. This is becoming increasingly evident in the self-replacing maternal and terminal commercial flocks where the value of the high micron wool means that shearing and crutching are increasingly being observed as costs to the production system with the value of the fleece outweighed by the cost to remove it.

Recent growth in seed stock shedding composite lines throughout the Australian sheep industry has produced shedding animals which are considered easy-care, with reduced demand for shearing and preventative treatment practices to avoid fly strike and other welfare issues.

Current research across UK, American and Australian flocks has shown that shedding characteristics are heritable, with literature estimates ranging from 0.26 to 0.54<sup>1</sup>. With research indicating that the mode of inheritance in shedding characteristics matches that observed of a dominant major gene effect<sup>2</sup>.

Shedding in lambs have also been shown to be strongly genetically correlated with the same trait in adults with shedding also highly repeatable across shedding events in adult sheep<sup>3</sup>. Genetic correlations between shedding characteristics and production and welfare traits remains poorly understood across literature.

<sup>1</sup> Pollot 2011; Matika et al. 2013; Vargas Juardo et al. 2019, Guy et al. 2021

<sup>2</sup> Pollot 2011

<sup>3</sup> Guy et al. 2021; Vargas Juardo et al. 2019

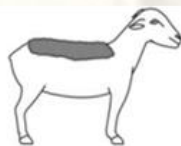
## Current Sheep Genetics Scoring Guide

### Score 1



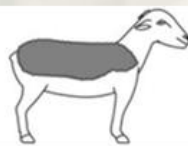
Animal is not currently carrying any wool.  
0% wool cover  
100% hair

### Score 2



Animal is carrying a saddle of wool across shoulders and part way along the back.  
25% wool cover  
75% hair

### Score 3



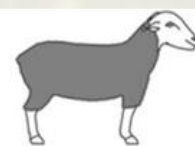
Animal is covered in wool to approximately half way down the flank.  
Approximately 50% wool cover

### Score 4



Animal is covered in wool over most of body except for legs, belly and breech area.  
75% wool cover  
25% hair

### Score 5



Animal is completely covered in wool on all of body (excluding feet and head).  
100% wool cover  
0% hair



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