AN INITIATIVE OF
Making More From Sheep

It's ewe time!

Gain from Genetics

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EVENT PARTNERS: Elders · LANDMARK look to us · Ruralco HOLDINGS LIMITED · SHEEP CRC

EVENT SUPPORTERS: SHEEPMEAT COUNCIL OF AUSTRALIA · STATE PRIMARY INDUSTRY AGENCIES

Outline

- Genetic theory in practice

- The key traits

- Which traits for which breeds?

- Where to find these animals?

The long and short of Farm production

- Farm production is an interaction of Genetics and Environment

Performance =   Genetics   X   Environment

Farm production is like the 100m

Do you want to win the race every time???

Pick the faster ram, and give his progeny a good start.

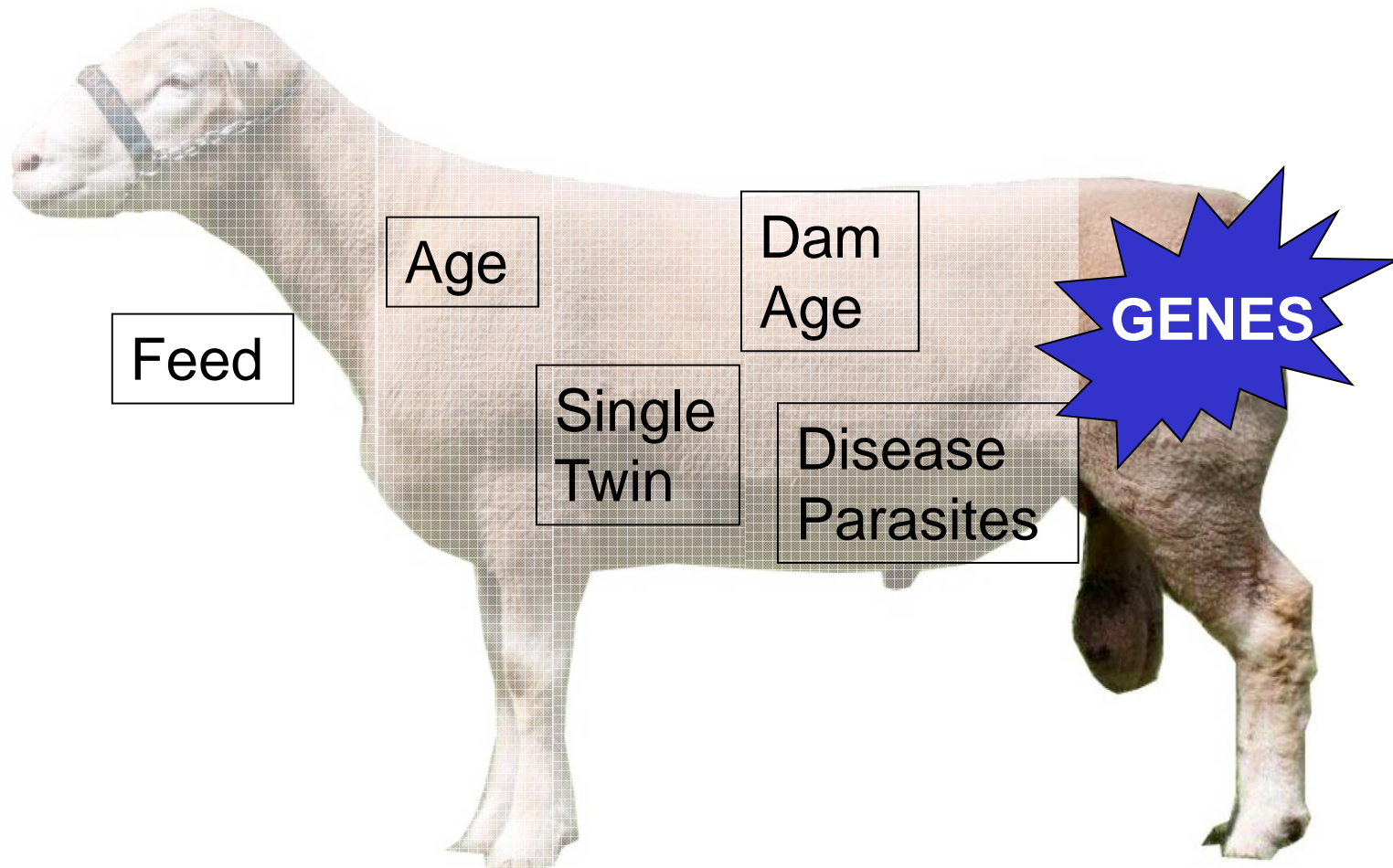(Better Genetics, with good management)

Pick a team of these

Not these

What influences an animal's performance?

Feed

Age

Single
Twin

Dam
Age

Disease
Parasites

GENES

ASBVs

- Compare rams:
  - Within a flock
  - Across Flocks
  - Across Breeds (in terminals)

- Quality assured system

- Using Pedigree and performance data

- Balance with visual selection

Pick the right genes for the right environment

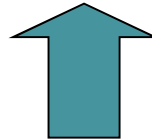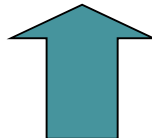Good Environment, Good Genetics

Good Genetics, Wrong Environment

Growth Traits

- Expressed in kgs of live weight

- Available for all age stages

- Watch birth weights and mature ewe size

What's available

Stage	Higher or Lower
Birth	Optimise
Weaning	↑
Post Weaning	↑
Yearling	↑
Hogget	↑
Adult	Watch

What are genetics for Growth worth?

Current top 10% is 13.4 kg (average is 10.7)

↓

2.7 kg difference

↓

1.35 kg for every lamb sired

↓

Average ram gets 180 lambs per lifetime

↓

243 kgs live weight or $514
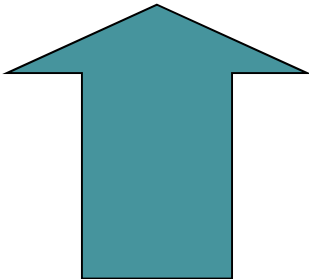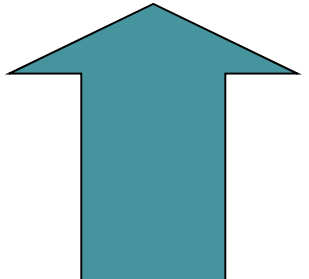
Carcase traits

- Eye Muscle & Fat Depth

- Expressed in mm

- Affects range of traits

- Increase muscle, optimise fat

Fleece Quantity

- Both Clean and Greasy Fleece weight

- Expressed in % of wool cut

- Available from yearling on

What's available

	Higher or Lower	What to Watch
Greasy Fleece Weight	⬆	Fat Fertility Micron
Clean Fleece Weight	⬆	Fat Fertility Micron

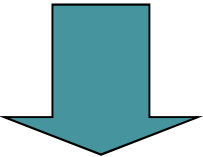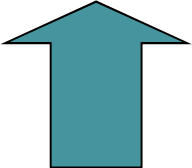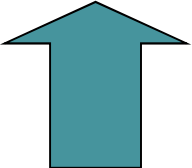# Fleece Quality

- Fibre diameter, Staple Strength, Staple Length

- Expressed in relative units

- Available from Yearling on

Which trait? And in Which direction

	Fibre Diameter	Staple Strength	Staple Length
Units	µM	N/Kt	mm
Higher or Lower	⬇	⬆	⬆
Things to watch	Staple Strength, Body Weight, Fleece Weight	Its All Good	Staple Strength

Fertility traits

- Number of Lambs Weaned (NLW)

- Lambs weaned per 100 ewes joined

- Harder to make progress, but big differences exist

- High number of NLW better

Worm Resistance

- Ability to cope with Worm Burden

- Expressed as percentage of Worm Egg Counts

- Benefits include:
    - Sheep not dying
    - Production not slowing

- Aim to decrease

What is an Index?

- Combines the ASBVs for several traits into one value

- Available for a range of different breeding programs

- Quick selection guide

- Still important to look at the individual ASBVs

Dual Purpose Merino

- Traits:
  - Post Weaning weight, muscle & fat
  - Number of Lambs Weaned
  - Clean Fleece Weight
  - Worm Egg Count

- Indexes
  - 3.5% Dual Purpose
  - 7% Dual Purpose

Merino

- Traits:
  - Yearling Clean Fleece Weight, Fibre diameter, Staple Strength
  - Post Weaning Growth
  - Worm Egg Count

- Indexes
  - 10% plus staple strength
  - 14% plus staple strength

Maternal

- Traits
  - Number of Lambs weaned
  - Post Weaning weight, muscle, & fat
  - Worm Egg count
  - Greasy Fleece Weight

- Indexes
  - Maternal $ index
  - Dual Purpose $ index

Terminal

- Traits:
  - Post Weaning weight, muscle, fat,
  - Birth Weight
  - Worm Egg Count
  - Number of Lambs Weaned

- Indexes
  - Carcase Plus
  - Lamb2020
  - Self Replacing Carcase

SHEEP GENETICS

mla MEAT & LIVESTOCK AUSTRALIA

awi Australian Wool Innovation Limited

LAMBPLAN ASBV | MERINOSELECT ASBV

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Sheep Genetics is the national genetic information and evaluation service for the meat and wool sectors of the sheep industry delivered as LAMBPLAN and MERINOSELECT. The purpose of Sheep Genetics is to improve the quality, scope and utilisation of across-flock, and where appropriate, across breed genetic information for the Australian sheep industry.

- Sheep Genetics provides a single national language in the form of Australian Sheep Breeding Values ASBVs

- ASBVs are available across flock and, where appropriate, across breeds

- ASBVs are updated twice monthly for a range of commercially relevant traits that impact on all sectors of the sheep industry

- ASBVs are designed to be used to compare the genetic potential of animals independent of the environment and location

Backed by quality assurance procedures and minimum accuracy standards, Sheep Genetics hosts a database of some 3 million animals, reflecting data from more than 1000 flocks around Australia. Together with the Australian sheep industry, MLA and AWI have facilitated genetic evaluation for prime lamb and wool producers.

Sheep Genetics Website

- Search for animals with ASBVs

- See where they rank

- View upcoming sales

Wrapping up

- ASBVs accurately predict how rams will perform

- ASBVs are available for a range of traits

- Select traits that impact your bottom line

Win the Gold, use ASBVs to improve