

meatup FORUM

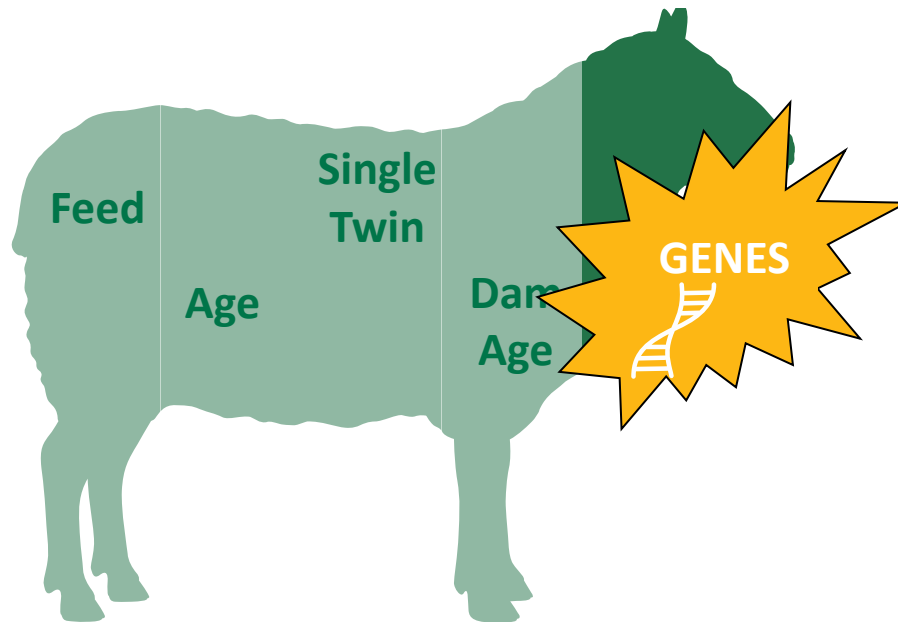
For the latest in red meat R&D

Learn what new traits are available for ram buyers and breeders

Emma McCrabb

Meat & Livestock Australia

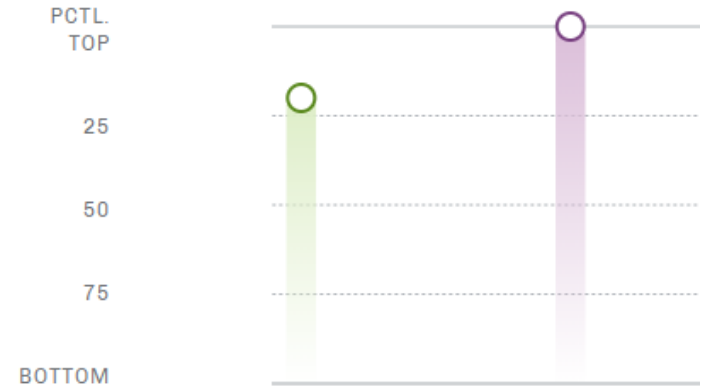
What impacts performance?



Genetic benchmarking tool

- Australian Sheep Breeding Values (ASBVs)
- Negative ASBVS are not always bad
- Accuracy is a reflection of the amount of info used
- ASBVS need to be compared to the current average (percentiles)

PWT	PWEC
POST WEANING WEIGHT (KG)	POST WEANING WORM EGG COUNT (%)



14.22
ACC. 74

-93.89
ACC. 57

Sheep Genetics role

- Program of Meat & Livestock Australia (MLA)
- Deliver the national genetic evaluation for sheep and goats
 - The evaluation is run by AGBU (Animal Genetics and Breeding Unit) at UNE using OVIS Software
- Breeding values are delivered as:



Breeding objectives

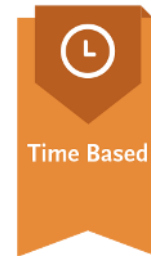
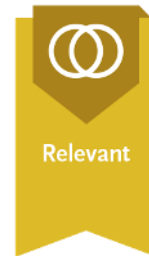
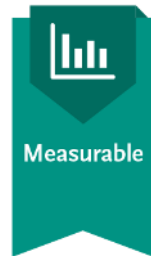
1. What are your profit drivers or costs to your business?
2. Match these production traits to breeding value traits and indexes
3. Where do you currently sit?
4. Where do you want to get to?
5. When will you get there?



Breeding objectives

1. What are your profit drivers or costs to your business?
2. Match these profit drivers or costs to your breeding indexes
3. Where do you want to be in 10 years?
4. Where do you want to be in 20 years?
5. When will you want to be there?

Where will our
industry be in 20
years?



What drives profit for your business?

Productivity

Weaning Rate (WR)
ASBV



Price/Quality

Eating Quality ASBVs

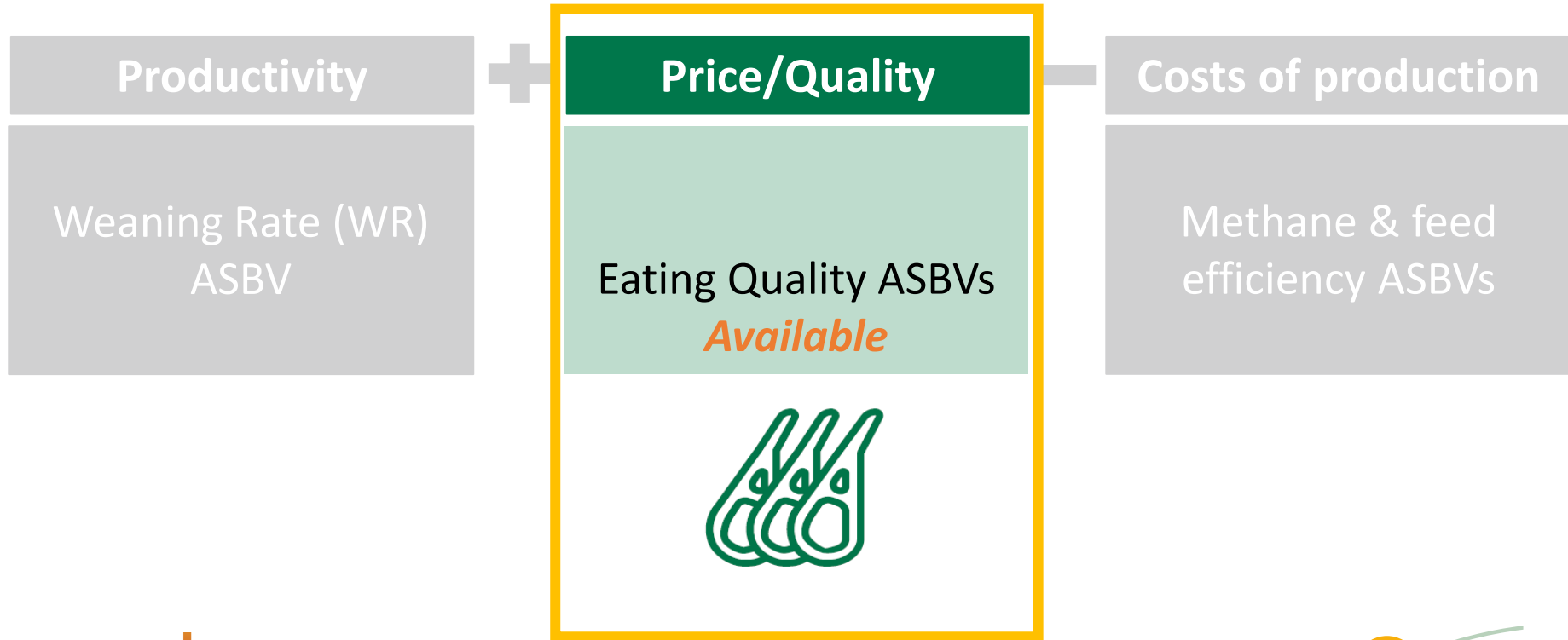


Costs of production

Methane & feed
efficiency ASBVs



What drives profit for your business?



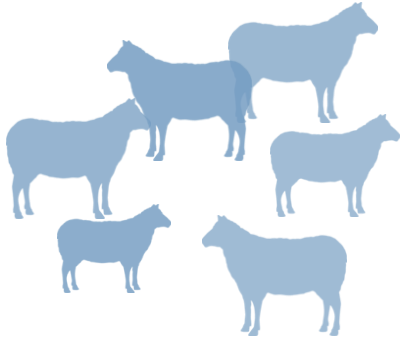
Selecting for eating quality

Trait	Unit
Carcase weight (CWT)	Kilograms
Dressing % (DRESS)	%
Lean meat yield (LMY)	%
Intramuscular fat (IMF)	%
Shear force (SHEARF5)	nM
Fat depth at c-site (FAT)	mm
Eye muscle depth (EMD)	mm

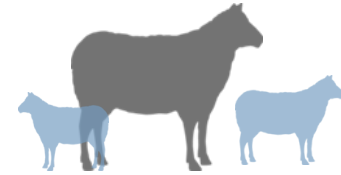
- Also inclusion of these traits in Terminal indexes
 - Unfavourable correlation between eating quality and growth/yield traits
- How can you select for these 'hard-to-measure' traits?

How genomics works?

Reference population



Relationship to the reference population



Breeder genotypes
(50K)



Genomically-enhanced



Where does this happen

- Sheep CRC INF/MLA Resource Flock
- Breeder flocks

What's next for eating quality?



- How can we include and use commercial data in the evaluation?

What drives profit for your business?



The component traits of reproduction

Previous trait for
selection

Number of Lambs
Weaned
NLW



Newer component traits

Conception (CON)

- Did the ewe conceive

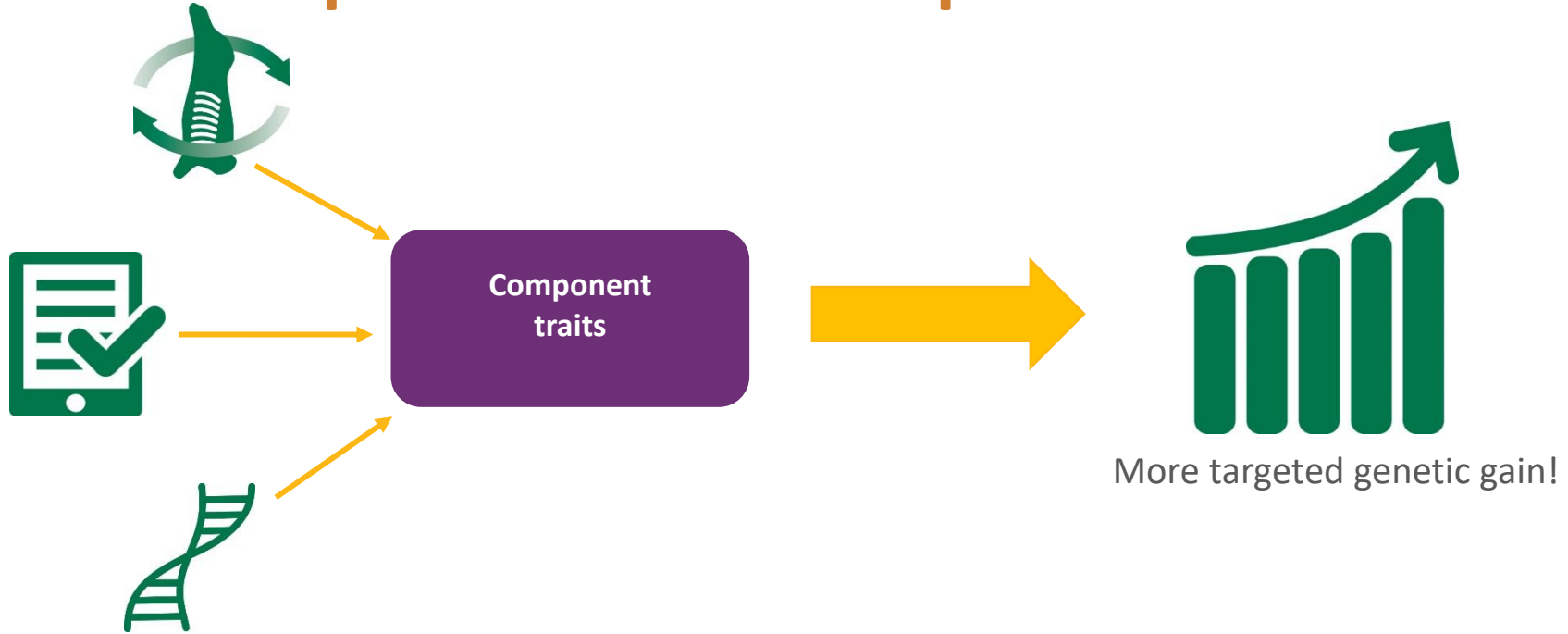
Litter Size (LS)

- How many lambs were born

Ewe Rearing Ability (ERA)

- How successfully did the ewe rear
her lambs

The component traits of reproduction



Introducing Weaning Rate

- New ASBV is Weaning Rate (WR)
- Units are lambs weaned per ewe joined
- Combines the components into a net value
 - Considers the economic contribution of each of the components



High litter size flock
(eg scanning 170%)



Maintain
CON and LS



Improve
ERA

Introducing Weaning Rate (WR)

Two Ewes



But how did they get there?



Both wean two lambs each



What drives profit for your business?



Selecting with the environment in mind

- Current work - data capture of:
 - Methane emissions
 - Feed intake and efficiency
- Longer term – development of ASBVs that can be used in selection



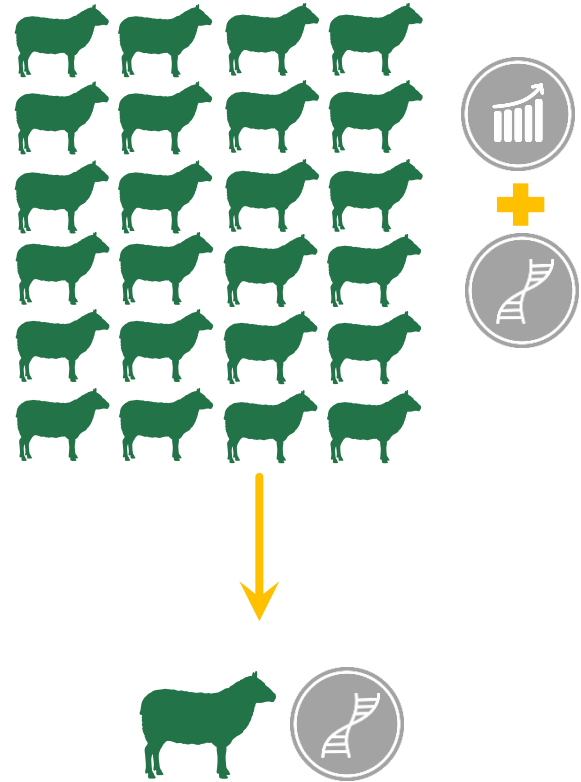
What can you do now?



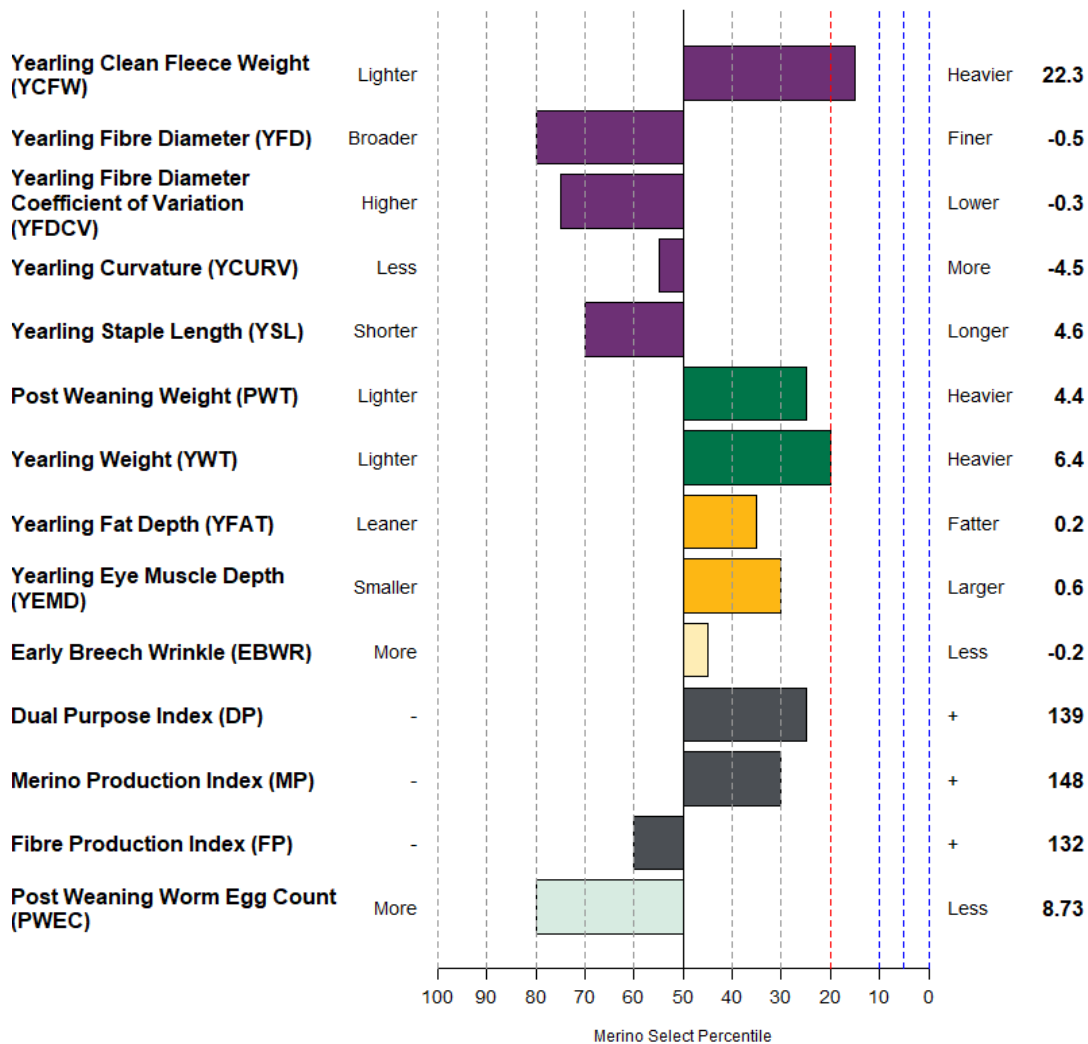
Flock Profile

- Commercial Merino producers
- DNA test 20 lambs
- Provides flock average ASBVs

- Industry recording and genotyping (reference populations) underpin Flock Profile



Flock Profile Outputs



Sire team tracking

- All breeds
- All traits
- For your breeding objective:
 1. Average the ASBVs of the sire team each year
 2. Track this overtime and use to inform selection decisions

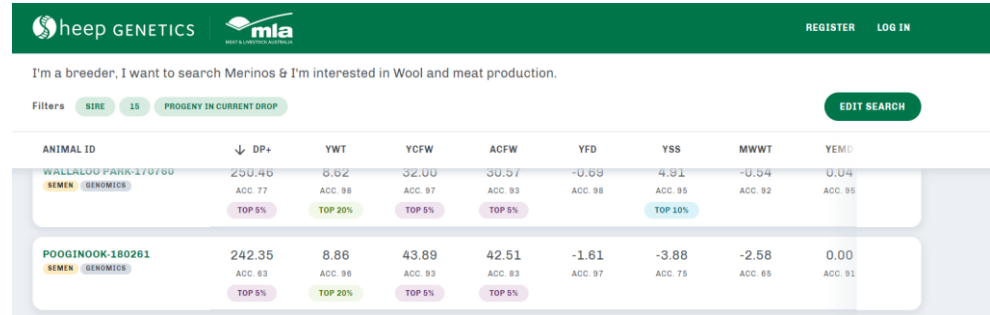


Take home messages

- Breeding values describe the genetic merit an animal will pass on to its progeny.
- New traits are regularly being developed to help breeders select animals that meet the needs of the industry now and into the future.
- Consider using these ASBVs, and tools like Flock Profile or sire team tracking to benchmark your genetics and inform sire selection decisions.

Tools and resources

- **Sheep Genetics:**
www.sheepgenetics.org.au



The screenshot shows the Sheep Genetics website interface. At the top, there is a green header with the 'sheep GENETICS' logo and the 'mla' logo. Below the header, a search bar contains the text 'I'm a breeder, I want to search Merinos & I'm interested in Wool and meat production.' There are filters for 'SIRE', 'IS', and 'PROGENY IN CURRENT DROP'. An 'EDIT SEARCH' button is visible. The main content is a table with columns for various genetic traits and their values for two animals.

ANIMAL ID	DP+	YWT	YCFW	ACFW	YFD	YSS	MWWT	YEMD
WALLALOO PARK-170760	250.45 ACC: 77	8.52 ACC: 98	32.00 ACC: 97	30.57 ACC: 93	-0.59 ACC: 98	4.91 ACC: 95	-0.04 ACC: 92	0.04 ACC: 95
	TOP 5%	TOP 20%	TOP 5%	TOP 5%		TOP 10%		
POOGINOOK-180261	242.35 ACC: 63	8.86 ACC: 96	43.89 ACC: 93	42.51 ACC: 83	-1.61 ACC: 97	-3.88 ACC: 75	-2.58 ACC: 65	0.00 ACC: 91
	TOP 5%	TOP 20%	TOP 5%	TOP 5%				

- **MLA Genetics Hub**
<https://genetics.mla.com.au/>

