It's ewe time!

Gain from Genetics
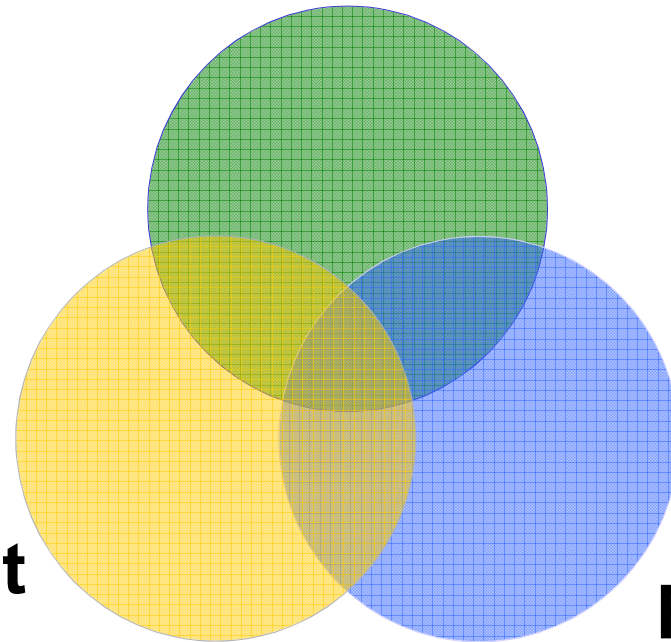
Hamish Chandler

The challenge for the next 5 years

- We must improve marking rates by 10%

- Continue to improve growth rates
  - Target 0.5kg carcase weight per year

- Improve fleece weights by 10%
  - At the same micron

How do we meet this challenge?
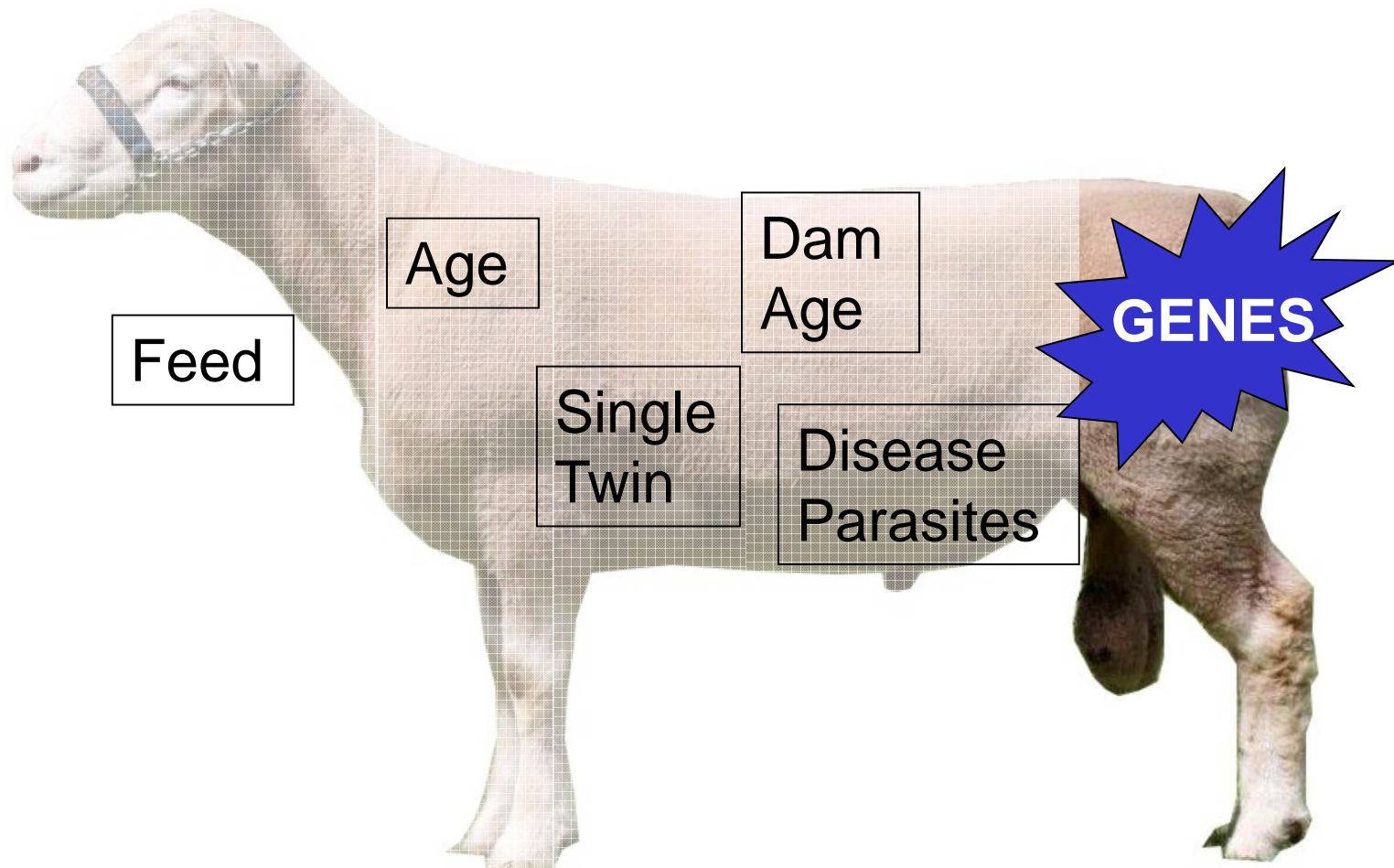
Right Plant

Management and costs

Right Animal

Do you have the right animal?

- What influences an animal's appearance (performance)

- What are ASBVs and why are they important

- How can ASBVs improve my profitability

What influences an animal's performance?

Australian Sheep Breeding Values

ASBVs

GENES

"Feed wrinkle"
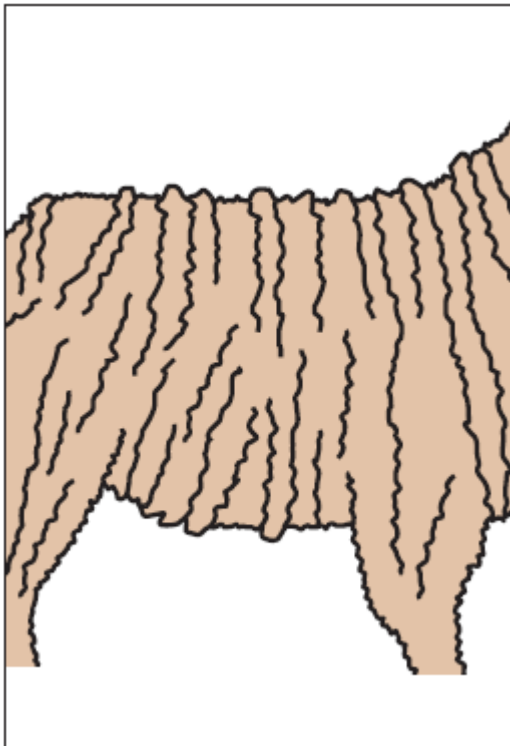
What about the effects of

environment and nutrition

- Single or twin   (-0.3 to -0.5)

- Born in a drought   (-0.5 to -1.0)

- From a maiden dam (-0.1 to -0.2)

Need to select for genes, NOT nutrition

What ASBVs are available?

- ASBVs for major production areas
  - Weight
  - Carcase
  - Fertility
  - Fleece
  - Disease Resistance

What ASBVs are available?

- ASBVs for a number of age stages
  - Birth
  - Weaning
  - Post-weaning
  - Yearling
  - Hogget
  - Adult

e.g. PWT = Post-weaning Weight

YCFW = Yearling Clean Fleece Weight

What is a good ASBV?

– ASBVs are based around 0

– 0 is the average of the 1990 drop

– ASBVs need to be compared to the current average

– Negative ASBVs are not always bad

What is a good ASBV?

PEMD   NLW   PWT   YCFW   +'ve

PFAT   BWT   0

YFDCV   YFD   YWEC   -'ve
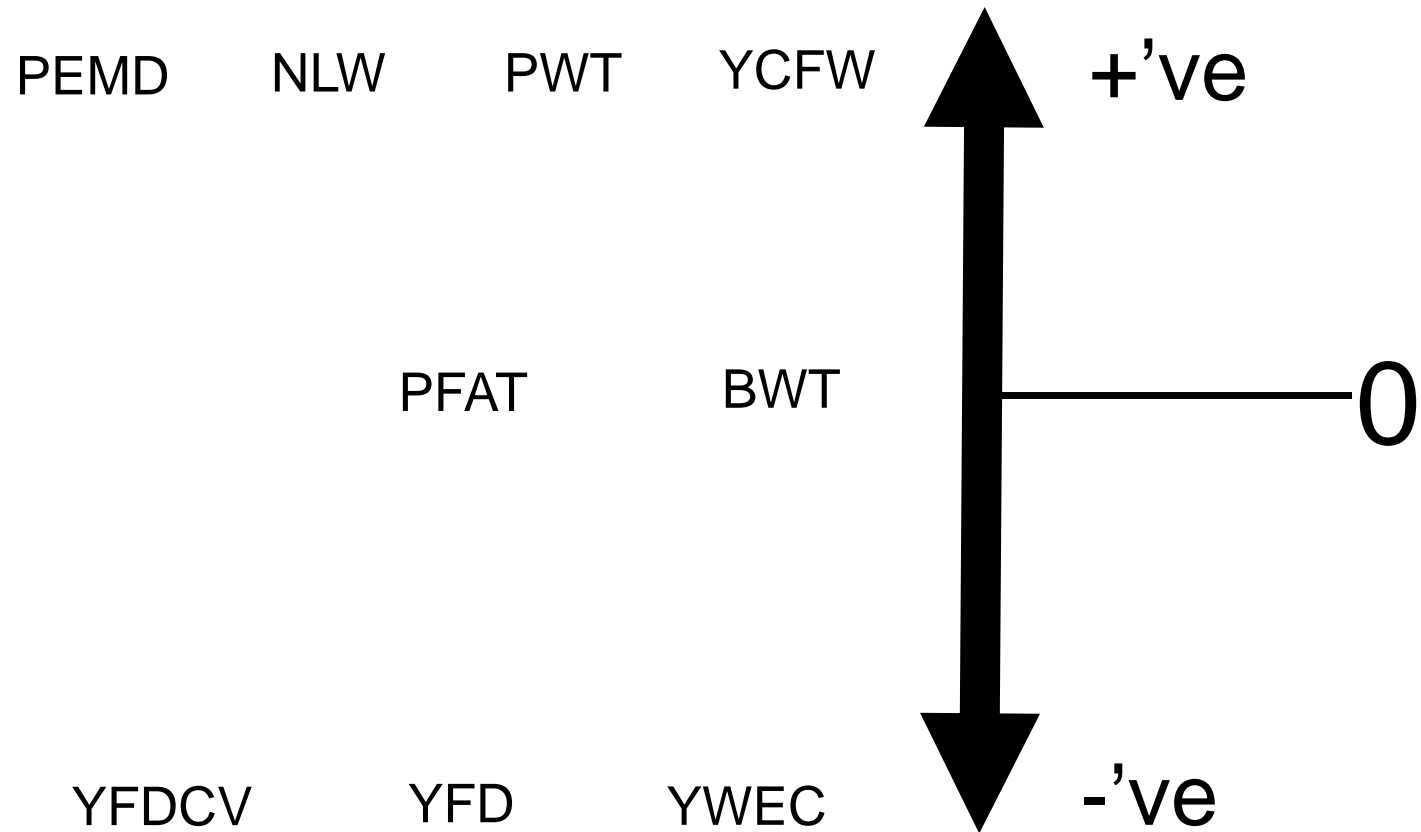
How to use an ASBV

– Ram A; PWT +14 kg

– Ram B; PWT +10 kg

– They pass half of their genes on to progeny

– Therefore half of the ASBV passed on

– Ram A's progeny expected to be 2 kg heavier if joined to the same ewes

Percentile Report

Analysis **TERMINAL** Dated **15/07/2010**

Animals born in 2009

Band	Bwt kg	Wwt kg	PWwt kg	Ywt kg	Pfat mm	Yfat mm	Pemd mm	Yemd mm	Ysc cm	Hsc cm	Pfec %	Yfec %	MWwt kg	NLW %	Carcase +	LAMB2020	Trade$	Export$
0	-0.81	12.5	18.2	19.0	-3.4	-3.8	4.8	5.3	4.8	3.5	-72	-65	5.2	24	222.6	117.3	118.3	122.9
1	-0.48	9.8	15.0	16.1	-1.8	-1.9	2.8	2.8	4.0	3.2	-55	-52	3.6	13	199.3	113.2	113.7	119.1
2	-0.43	9.4	14.5	15.6	-1.7	-1.8	2.6	2.5	3.8	3.1	-50	-48	3.4	12	195.9	112.6	113.2	118.5
3	-0.39	9.2	14.2	15.3	-1.6	-1.7	2.4	2.3	3.7	3.0	-48	-46	3.3	11	193.7	112.3	112.9	118.0
4	-0.36	9.0	13.9	15.1	-1.5	-1.6	2.3	2.1	3.7	3.0	-46	-44	3.2	10	192.1	112.0	112.6	117.7
5	-0.32	8.9	13.7	14.9	-1.4	-1.6	2.2	2.0	3.6	2.9	-44	-42	3.1	10	190.7	111.8	112.4	117.5
10	-0.08	8.4	13.0	14.2	-1.3	-1.4	1.8	1.7	3.4	2.8	-38	-36	2.9	8	185.8	111.1	111.7	116.5
15	0.08	8.1	12.6	13.7	-1.2	-1.3	1.6	1.5	3.3	2.7	-34	-31	2.7	7	182.3	110.5	111.2	115.8
20	0.15	7.8	12.2	13.3	-1.1	-1.2	1.4	1.3	3.2	2.6	-30	-28	2.6	7	179.4	110.1	110.8	115.2
25	0.19	7.6	11.8	12.9	-1.0	-1.1	1.3	1.1	3.1	2.5	-27	-25	2.5	6	176.8	109.7	110.5	114.7
30	0.22	7.4	11.5	12.6	-0.9	-1.0	1.1	1.0	3.0	2.5	-24	-22	2.4	5	174.4	109.4	110.1	114.3
35	0.25	7.2	11.1	12.2	-0.9	-0.9	1.0	0.9	2.9	2.4	-21	-19	2.2	5	172.2	109.1	109.8	113.8
40	0.27	7.0	10.8	11.9	-0.8	-0.9	0.9	0.8	2.9	2.3	-18	-16	2.2	4	169.8	108.7	109.4	113.3
45	0.30	6.8	10.5	11.6	-0.7	-0.8	0.8	0.7	2.8	2.3	-16	-14	2.1	4	167.4	108.4	109.1	112.9
50	0.32	6.5	10.1	11.2	-0.7	-0.8	0.7	0.6	2.7	2.2	-13	-11	2.0	3	164.9	108.1	108.8	112.4
55	0.34	6.3	9.8	10.8	-0.6	-0.7	0.6	0.5	2.7	2.1	-10	-9	1.9	3	162.3	107.8	108.4	111.9
60	0.36	6.0	9.4	10.4	-0.6	-0.6	0.5	0.4	2.6	2.0	-7	-6	1.8	2	159.6	107.5	108.1	111.4
65	0.38	5.7	9.0	10.0	-0.5	-0.6	0.4	0.3	2.5	2.0	-4	-3	1.6	2	156.7	107.1	107.7	110.8
70	0.40	5.4	8.5	9.5	-0.4	-0.5	0.3	0.2	2.4	1.9	-1	0	1.5	1	153.6	106.8	107.3	110.2
75	0.42	5.0	8.0	8.9	-0.4	-0.4	0.2	0.1	2.3	1.8	3	3	1.4	1	150.5	106.4	106.9	109.6
80	0.44	4.6	7.5	8.2	-0.3	-0.3	0.1	0.0	2.2	1.6	7	7	1.3	0	147.0	106.0	106.4	108.8
85	0.47	4.1	6.9	7.4	-0.2	-0.2	0.0	-0.2	2.0	1.5	12	11	1.1	-1	143.0	105.4	105.9	108.0
90	0.51	3.4	6.1	6.3	0.0	0.0	-0.2	-0.4	1.8	1.2	18	17	0.9	-3	138.1	104.7	105.0	107.0
95	0.56	2.4	4.7	4.8	0.2	0.3	-0.5	-0.6	1.5	0.9	29	27	0.5	-5	128.6	103.4	103.4	105.2
100	1.01	-7.5	-12.6	-11.6	3.5	3.1	-5.0	-5.3	-0.9	0.5	119	107	-3.1	-21	37.4	90.3	79.2	77.9

SHEEP GENETICS

mla   awi

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
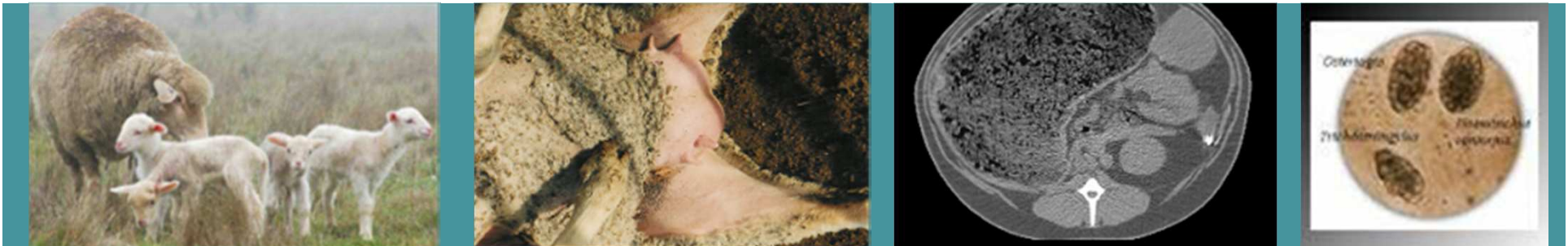
↓

243 kgs live weight or $514

Maternal traits are the real key

- Reproductive rates

- Maternal performance

- Fat and muscle

- Internal parasite resistance (worms)

All major traits, but can't see when buying rams.

Fleece Values
higher importance

Making More From Sheep

aWI Australian Wool Innovation Limited

mla MEAT & LIVESTOCK AUSTRALIA

Changing
Profit Drivers

Fertility Rate
higher importance

Making More From Sheep

awi Australian Wool Innovation Limited   mla MEAT & LIVESTOCK AUSTRALIA

•Merino to XB 40% lift in marking

•XB to Shedding another 10% ??

•Value of Reproduction must not be under-estimated any ewe flock!

What are genetics for NLW worth?

Top of drop has NLW of 10% *(average is 3%)*

↓

7% difference

↓

3.5% improvement for every daughter sired

↓

Average ram gets 90 daughters per lifetime

↓

15 extra lambs or $1601

WEC works for worms

- Effect on WEC using three different rams

Ram source	A (+50)	B(+20)	C(-40)
WEC epg	731	646	325
Live weight (wethers)	45.2	47.4	50.2
Extra return per Ha			$79.2

What is an Index?

- Combines the ASBVs for several traits into one value

- Available to suit a range of different breeding programs

- Quick selection guide to narrow down which rams to look at
  - Still important to look at the individual ASBVs

What is an Index?

- Terminal Indexes
  - Combine growth, fat and muscle
  - E.g. Carcase Plus, Lamb2020

- Maternal Indexes
  - Balance growth and carcase traits with maternal traits
  - E.g. Maternal$, Dual Purpose$, SRC$

- Merino Indexes
  - Balance wool quality and quantity traits with varying emphasis on growth and reproduction
  - E.g. 7%DP, 14%

Do you have the right animal?

- What influences an animal's appearance
  – Environment and Genes

- What are ASBVs and why are they important
  – ASBVs are used to describe the genetic differences between animals

- How can ASBVs improve my profitability
  – ASBVs allow us to more accurately identify better performers for key profit drivers

SHEEP GENETICS

mla
MEAT & LIVESTOCK AUSTRALIA

awi Australian Wool Innovation Limited

LAMBPLAN ASBV   MERINOSELECT ASBV

Home

LAMBPLAN

MERINOSELECT

KIDPLAN

Getting Started

News & Events

Resources

Links

Service Providers

About Us

Contact Us

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.

www.sheepgenetics.org.au

- 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.