AN INITIATIVE OF

Making More From Sheep

Gain from Genetics

Hamish Chandler

EVENT PARTNERS:

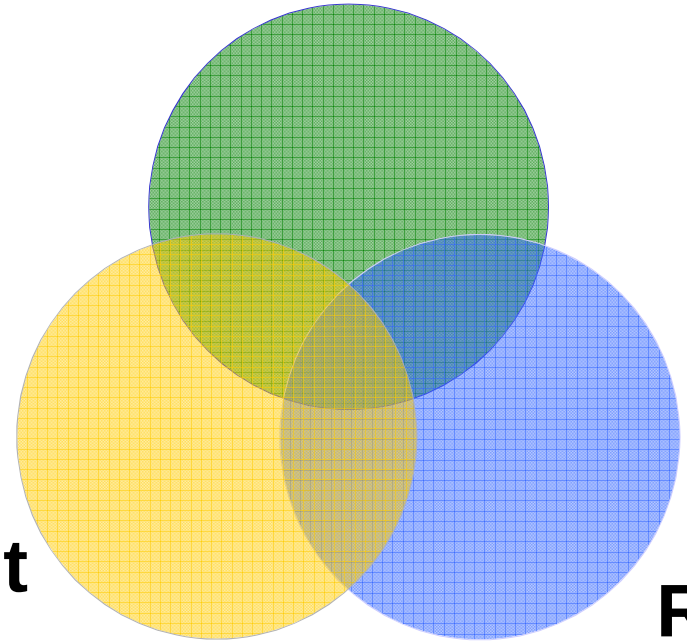
EVENT SUPPORTERS:

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



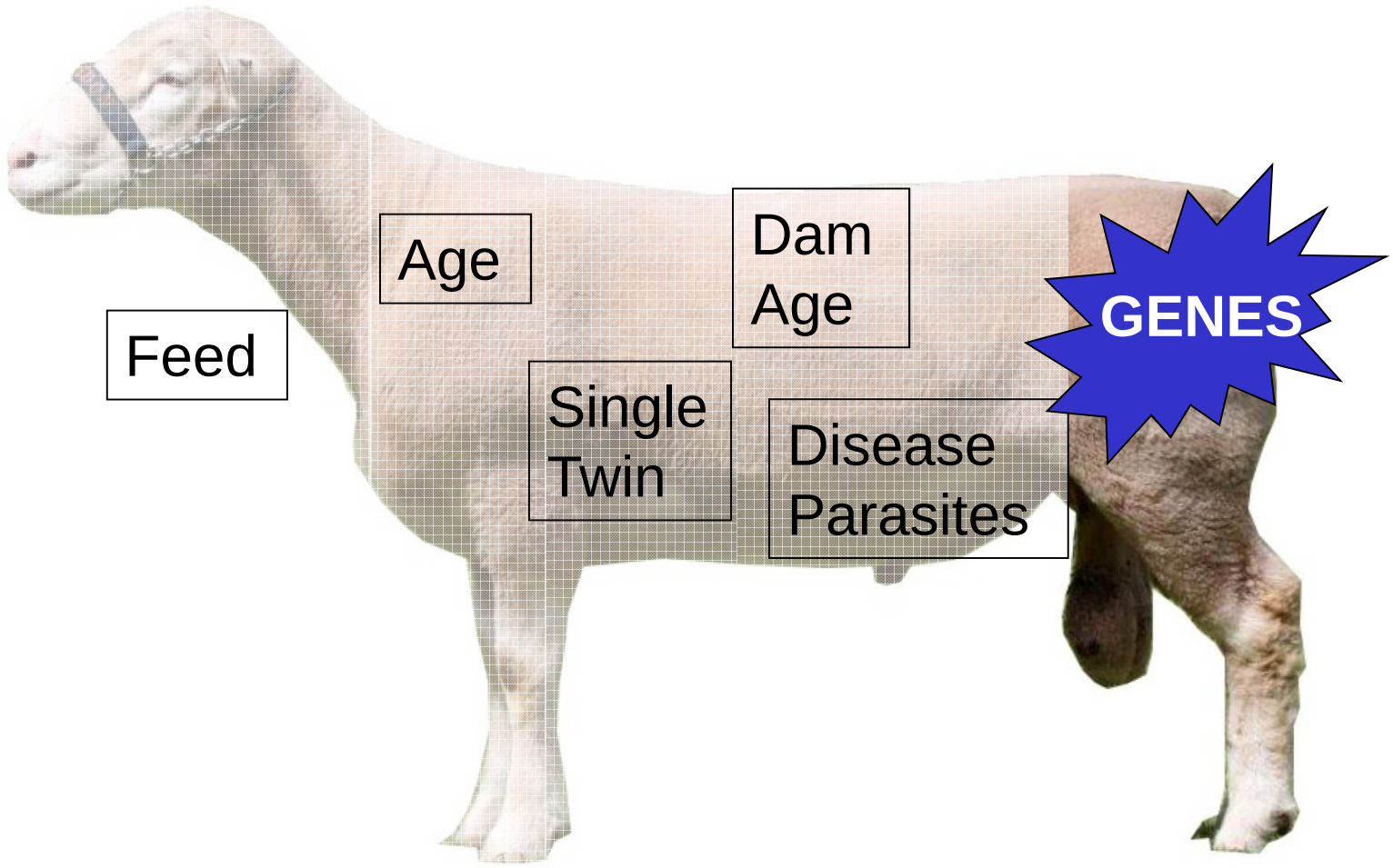
Management and costs

Right Animal

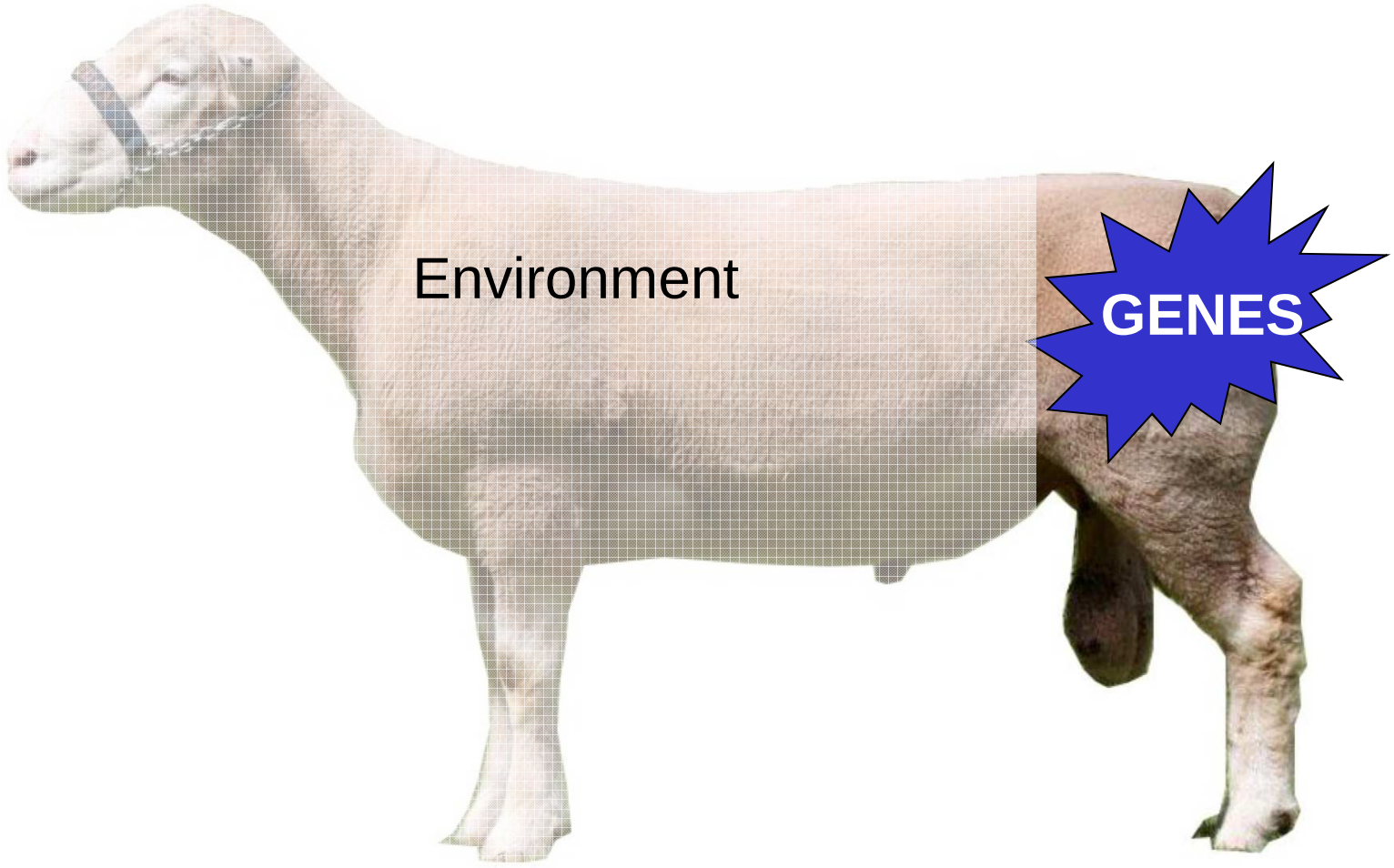
Do you have the right animal?

- 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?



What influences an animal's performance?



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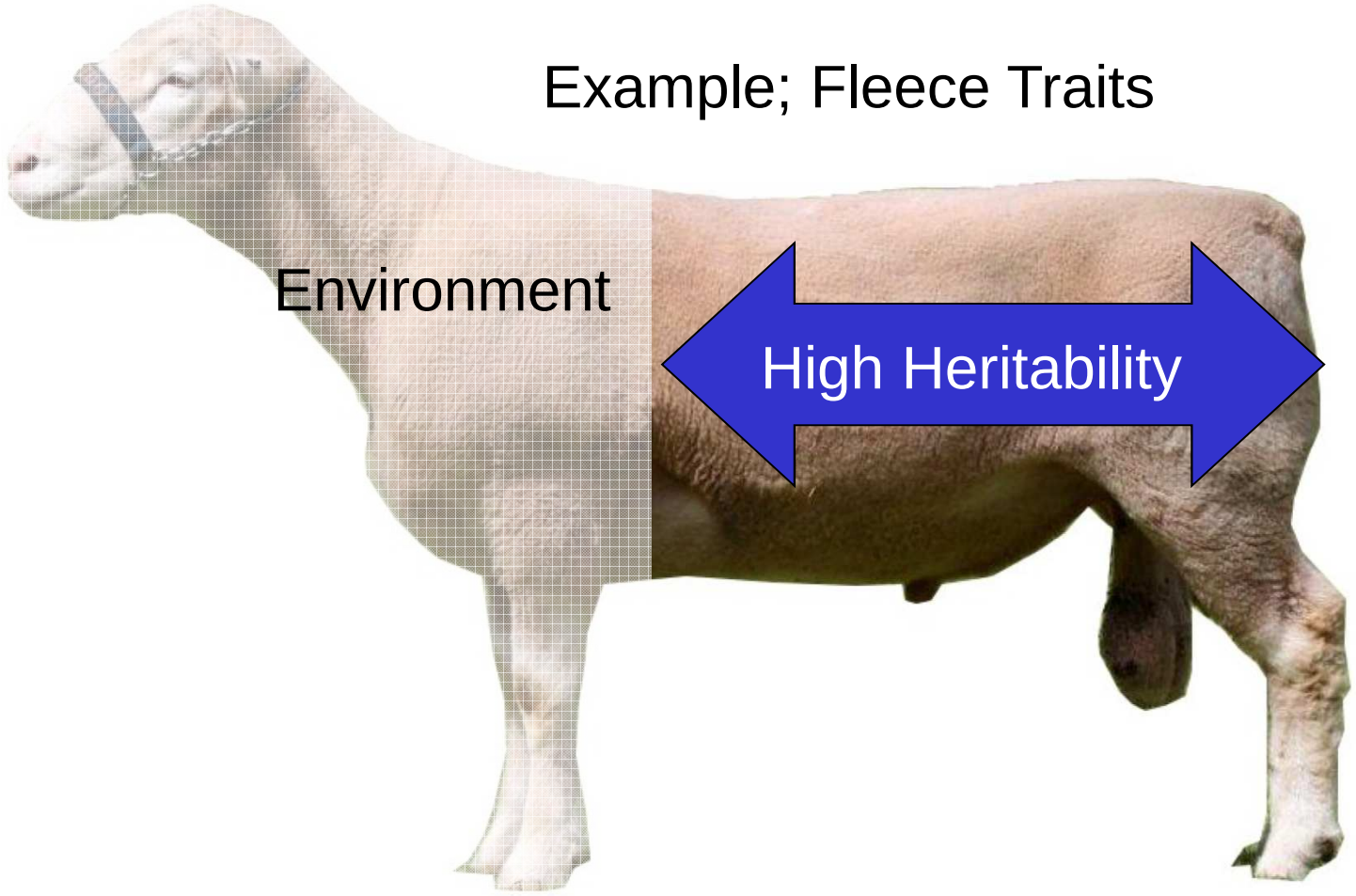

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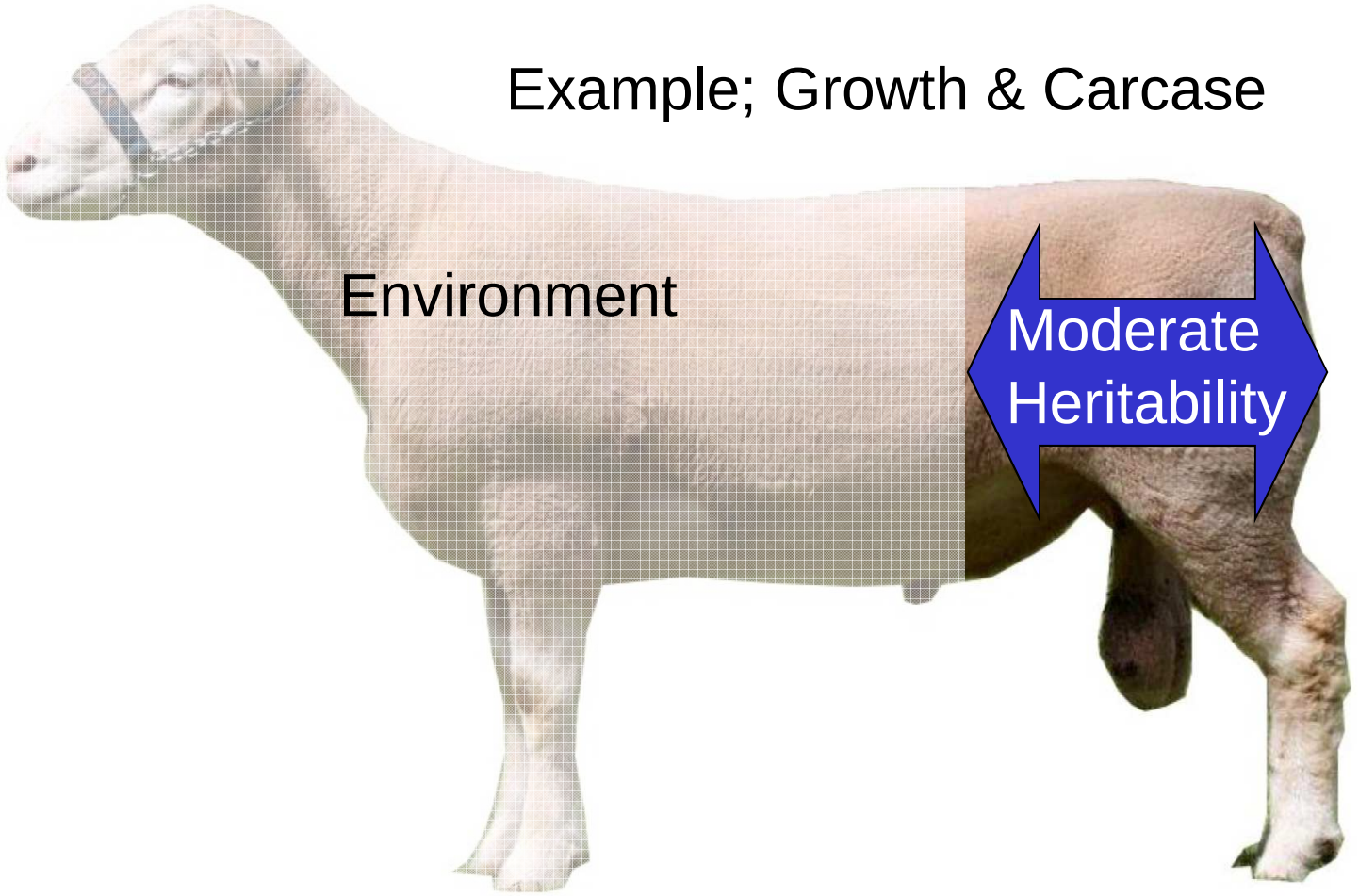

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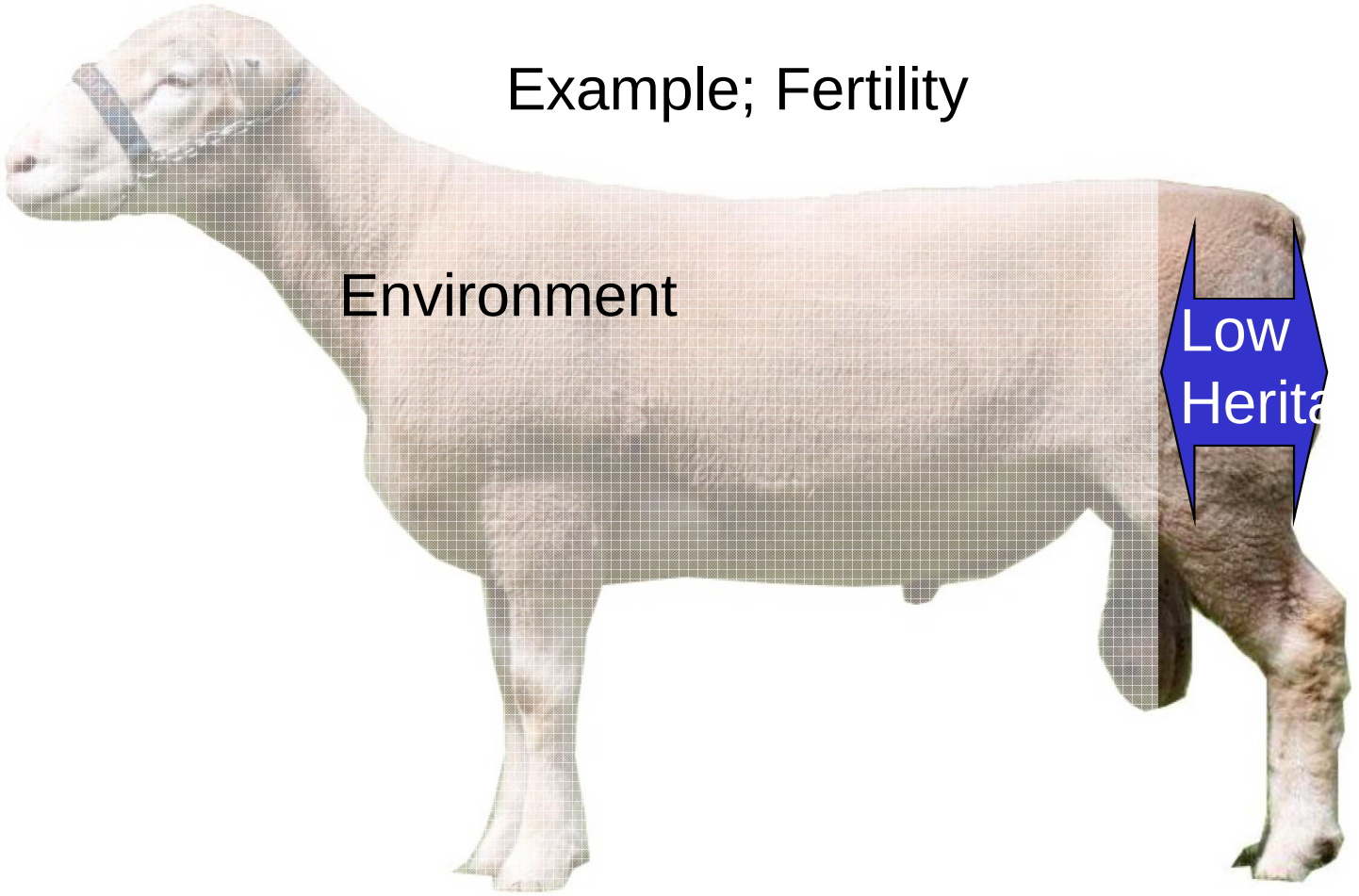

What influences an animal's performance?

Single versus Triplet

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“Feed wrinkle”

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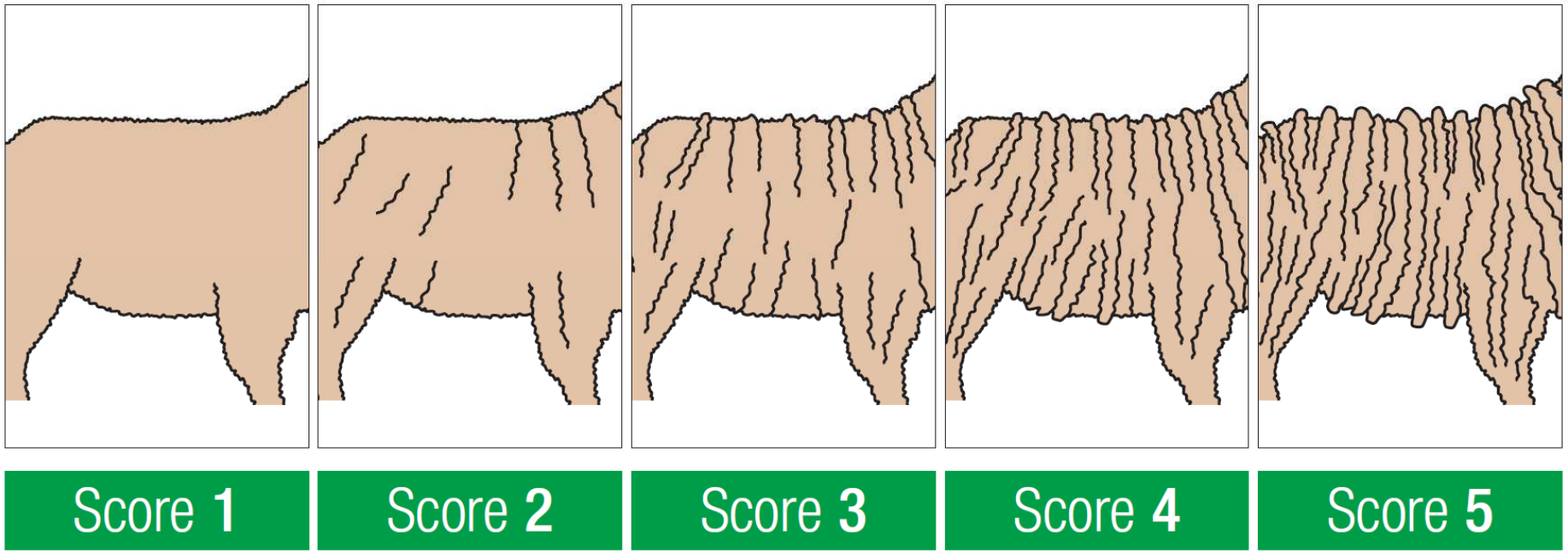
Body wrinkle



Need to select for genes, NOT nutrition

What ASBVs are available?

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

What ASBVs are available?

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

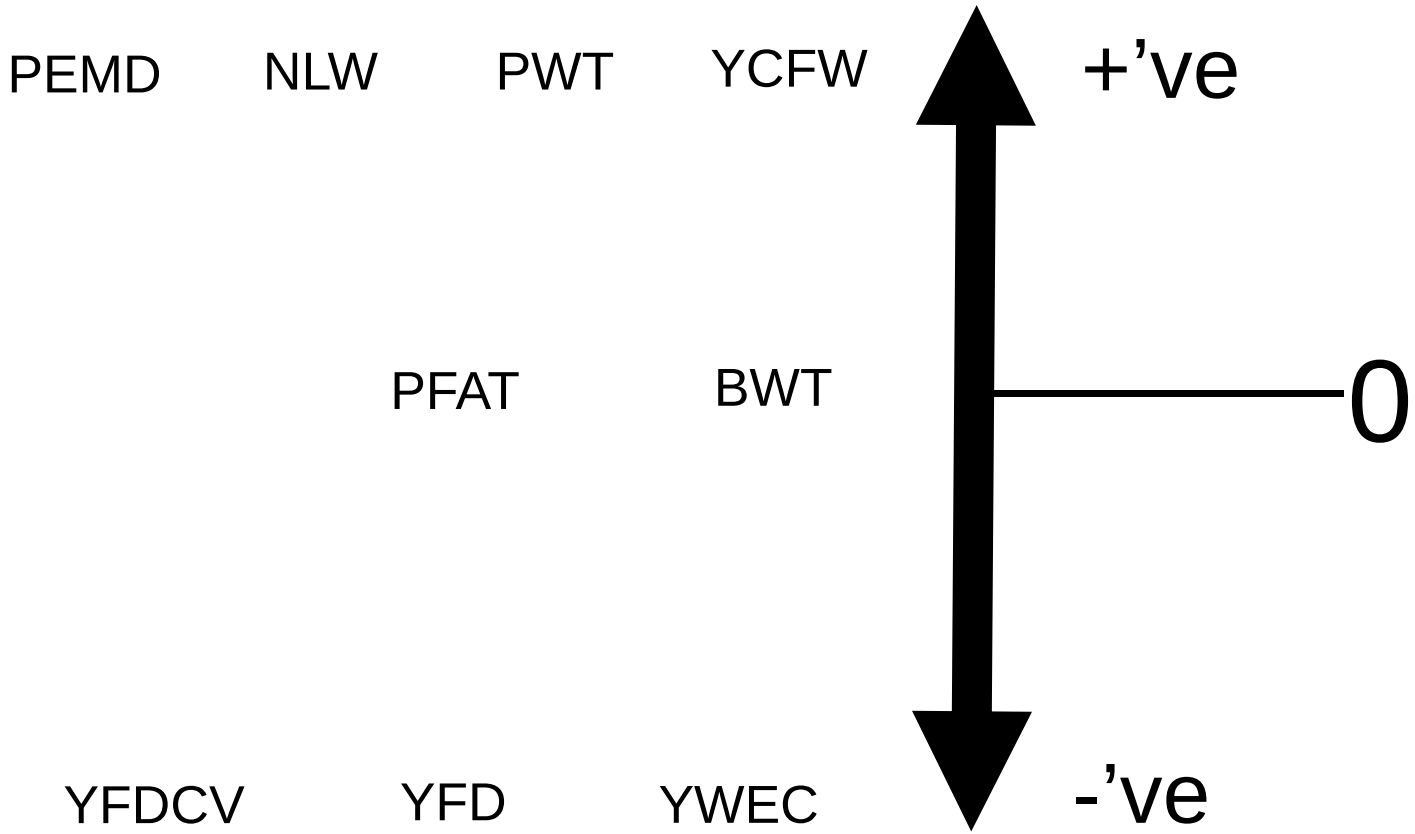
e.g. PWT = Post-weaning Weight

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?



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

Percentile Reports

Band	Wwt kg	Pwt kg	Pfat mm	Pemd mm	Ywec %	LAMB2020
0	12.5	18.2	-3.4	4.8	-65	117
10	8.4	13	-1.3	1.8	-36	111
20	7.8	12.2	-1.1	1.4	-28	110
50	6.5	10.1	-0.7	0.7	-11	108
80	4.6	7.5	-0.3	0.1	7	106
100	-7.5	-12.6	3.5	-5	107	90

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

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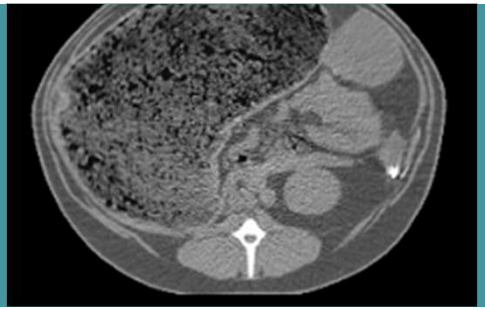
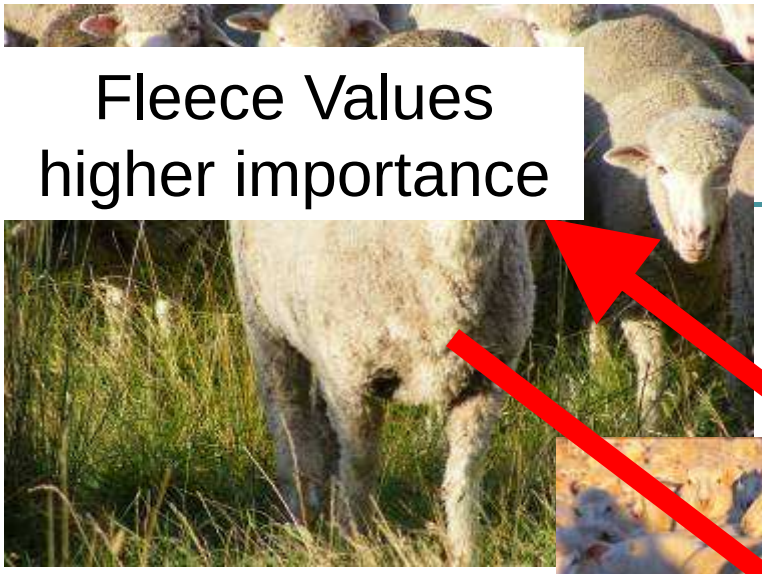
- Reproductive rates
- Maternal performance
- Fat and muscle
- Internal parasite resistance (worms)

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






Fleece Values
higher importance



Changing
Profit Drivers

Fertility Rate
higher importance

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

Putting them together makes a difference!

1000 ewe flock using av. rams

↓

Marking 850 lambs

↓

Average carcase wt 21.5kg

↓

Total value $82,237

1000 ewe flock using top 10%

↓

Marking 885 lambs

↓

Average carcase wt 22.1kg

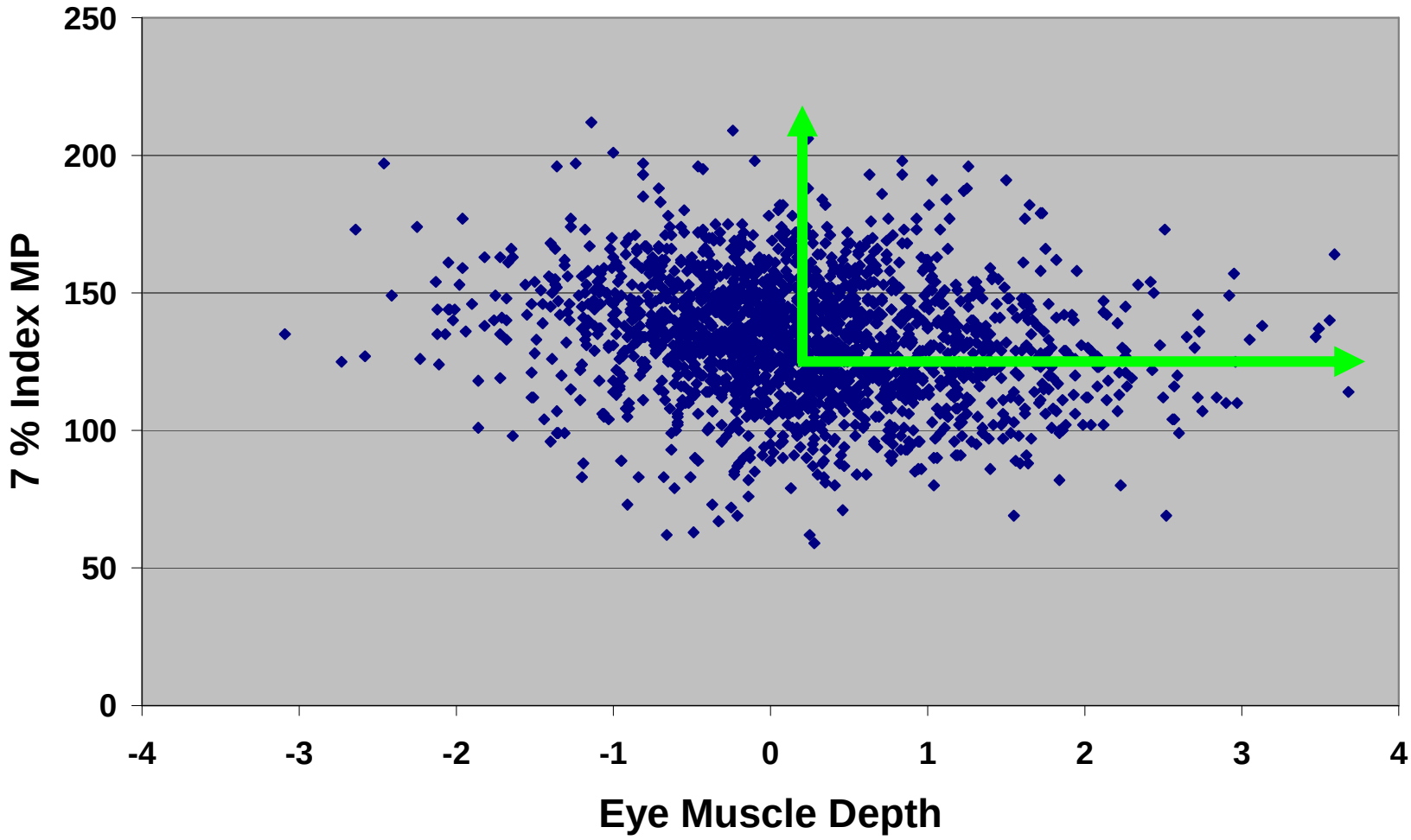
↓

Total value $88,013

↓

Added value $5,776

Wool & meat is achievable



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%SS

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

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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.

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.