

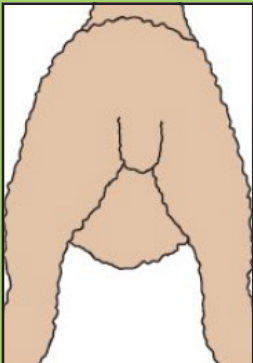


**SHEEPGENETICS
HEALTH**

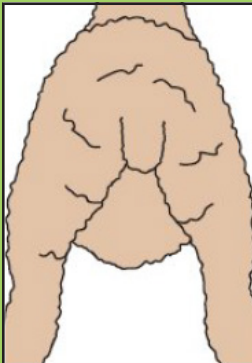


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SCORE 1



SCORE 2



SCORE 3

Breech Wrinkle (EBWR)

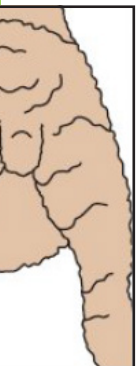
What to look for?

Breech wrinkle is relatively consistent across ages and the only ASBV available is the early breech wrinkle trait:

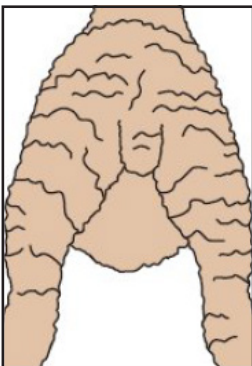
1. Early (EBWR)

How is it measured?

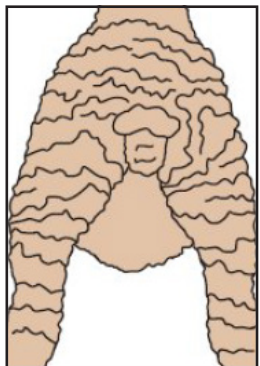
Breech wrinkle is scored by breeders either in the marking cradle on non mulesed lambs, or off shears after a weaner or yearling shearing using body wrinkle (if mulesed). Breech wrinkle is scored on a scale of 1 to 5, with 1 being an animal with no wrinkle and a 5 being an animal with excessive wrinkle.



SCORE 3



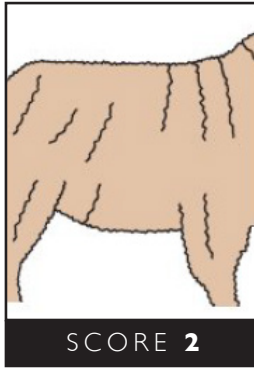
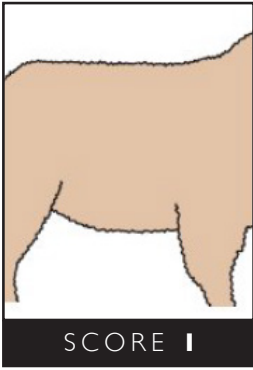
SCORE 4



SCORE 5

Breech Wrinkle

SHEEP GENETICS



What about body wrinkle?

There is a very strong correlation (90%) between breech wrinkle and body wrinkle. An animal with a low EBWR will be genetically less wrinkly over the body as well as breech area.

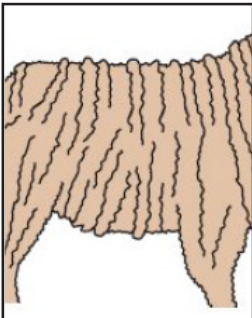
What do the numbers mean?

Wrinkle ASBVs are quoted in scores and they are deviations from the average of animals in the database in the 2000 drop. So, an animals with an EBWR of -1.0 will be genetically one wrinkle score less wrinkly than the average in 2000. A ram with an ASBV of -1.0 for wrinkle will pass half of this benefit onto his lambs, that is -0.5.

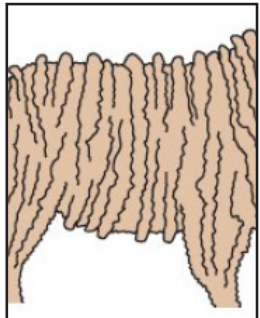




SCORE 3



SCORE 4



SCORE 5

Body Wrinkle

Can't I just tell from looking at them?

Wrinkles are obviously easy to see in animals off shears, but rams are generally sold in 4 to 8 months of wool, making it difficult to pick the less wrinkly ones. Further complicating the issue, is the fact that skin wrinkle is on average:

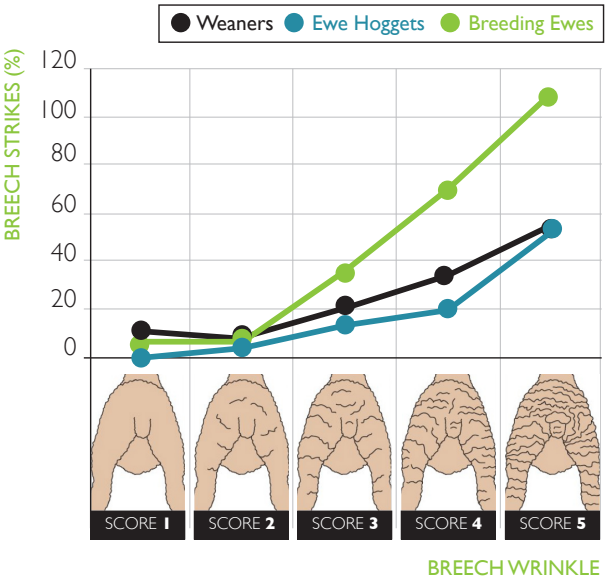
- 0.3 to 0.5 of a score higher in single born lambs than twin born lambs;
- 0.2 to 0.3 of a score higher in lambs from adult ewes than maidens;
- 0.5 to 1.0 scores higher in lambs from ewes that were fed well during pregnancy than those fed less.



What's in it for me?

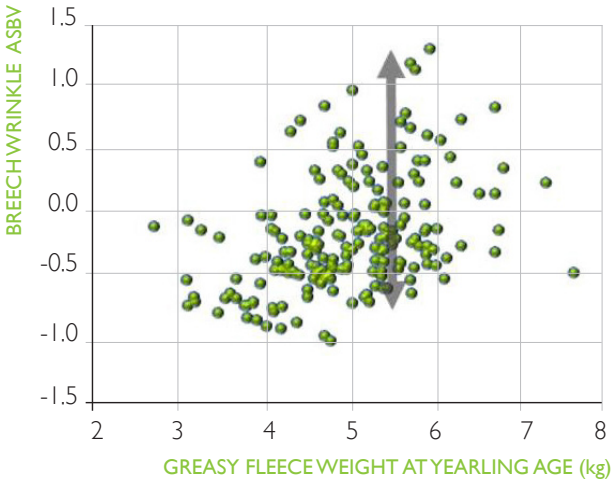
There are a few key reasons why selecting sheep with less wrinkle is a good idea. Sheep with less breech wrinkle have a lower susceptibility to fly strike. As a result sheep with lower wrinkle scores are much easier to manage in systems where surgical mulesing has ceased.

Wrinkly sheep also have lower lifetime reproductive output than plainer sheep.



What about wool cut?

In general, wrinkly sheep cut more wool but with balanced selection it is possible to select heavy cutting yet low wrinkle sheep.



What else changes if I just selected for lower wrinkle?

THE FREE LUNCHES

Higher reproduction

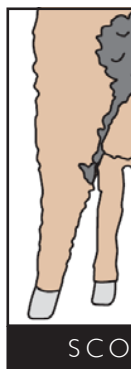
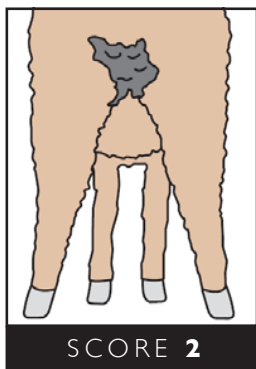
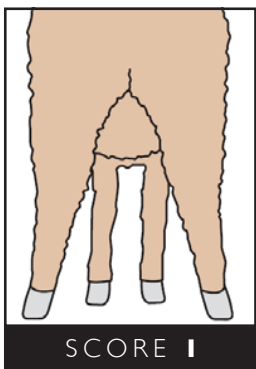
Less fly strike

Higher staple length

THINGS TO WATCH

Lower fleece weight





Scouring and dags (DAG)

What to look for?

Sheep accumulate dags when seasonal and parasite conditions are present that are conducive to scouring.

This can occur at any age and the ASBV that is available is the late dag trait:

1. Late (LDAG)

How is it measured?

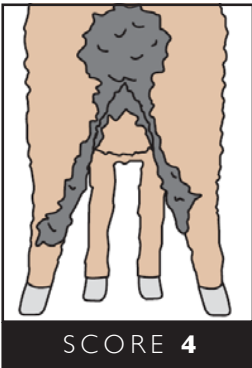
Dags are scored by breeders on a scale of 1 to 5, with 1 being no dags and a 5 being an animal with excessive dags.

What do the numbers mean?

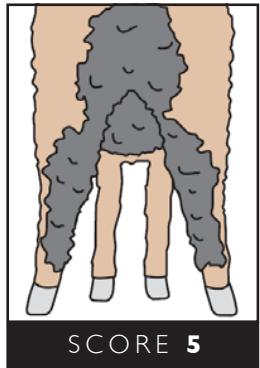
DAG ASBVs are quoted in scores and they are deviations from the average of animals in the database in the 2000 drop. So, an animal with an LDAG ASBV of -1.0 will be genetically one score less daggy than the average in 2000. A ram with an ASBV of -1.0 for dag will pass half of this benefit onto his lambs, that is -0.5.



RE 3



SCORE 4



SCORE 5

Dag

What's in it for me?

In winter rainfall areas the accumulation of dags can be costly. Not only is the contaminated wool of little or no value, paying contractors to remove it also costs money.

When dags are combined with the environmental conditions that suit blowflies, they are the major cause of breech strike, resulting in a large production loss as well as requiring considerable labour inputs to identify and treat sheep.

What else changes if I just selected for lower dags?

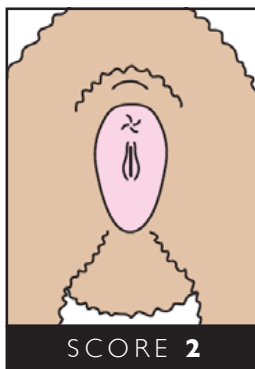
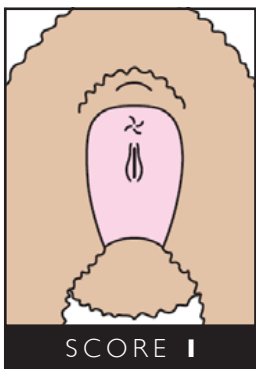
THE FREE LUNCHES

Less fly strike

More fleece wool

Less crutching

THINGS TO WATCH



Breech COVER (BCOV)

What to look for?

Some animals naturally produce less wool around the breech area (are bare breached). Breech cover can be assessed at any age but only on unmulesed sheep:

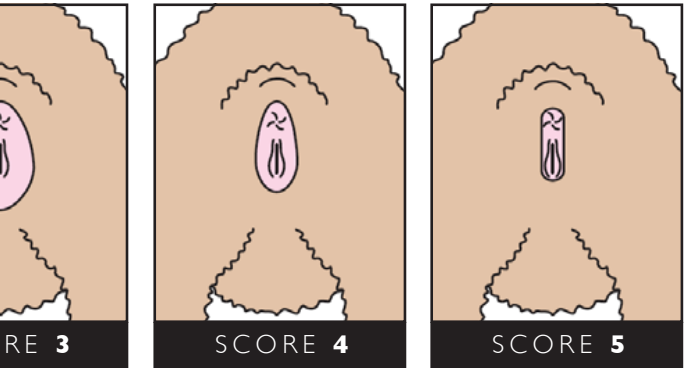
I. BCOV

How is it measured?

Breech cover is scored by breeders on a scale of 1 to 5, with 1 being a large bare area around the anus and a 5 being an animal with complete wool coverage around the anus.

What do the numbers mean?

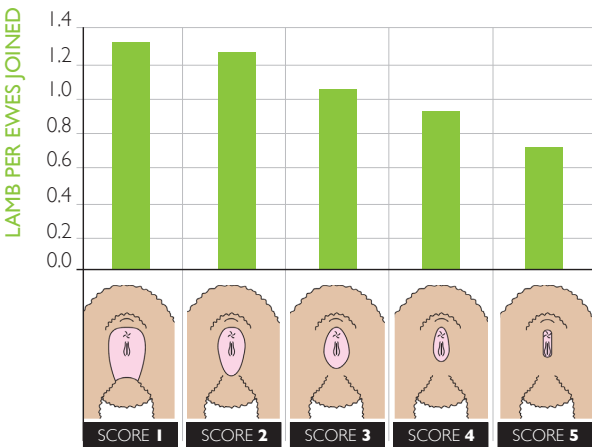
BCOV ASBVs are quoted in scores and they are deviations from the average of animals in the database in the 2000 drop. So, an animal with a BCOV ASBV of -0.5 will be genetically half a breech cover score less than the average in 2000. A ram with an ASBV of -0.5 for breech cover will pass half of this benefit onto his lambs, that is -0.25.



Breech Cover

What's in it for me?

Breech cover is one of the indicator traits for susceptibility to fly strike. It is another string in your bow for the fight against fly strike. Combining low wrinkle and low breech cover ASBVs can significantly reduce fly strike and reduce the reliance on surgical mulesing.



Source: Johan Greeff – AWI breech strike flocks



What else changes if I just selected for lower breech cover?

THE FREE LUNCHES

Higher reproduction

Less fly strike

THINGS TO WATCH

Fleece weight

Resistance to worms (WEC)

What to look for?

Resistance to internal parasites is defined by genetic differences in faecal worm egg count (WEC). It is quoted at one of four ages :

1. Weaning (WWEC)
2. Post-weaning (PWEC)
3. Yearling (YWEC)
4. Hogget (HWEC)

How is it measured?

Adult female worms inside the sheep produce eggs which pass out in the faeces. A faecal worm egg count (WEC) is a measure of the number of worm eggs in one gram of faeces. In order to get useable data for WEC, it is necessary to test individuals when the mob average WEC is high enough to be able to measure differences between individuals (>300 eggs per gram and less than 10% of samples with a zero value). Once the mob average is high enough, breeders collect individual faecal samples from all sheep in the mob. These samples are then submitted to an accredited laboratory for individual testing.

What do the numbers mean?

ASBVs for WEC are quoted in percentages, they are deviations from the average of animals in the database in the 1990 drop. So, an animal with a WEC ASBV of -25% will have a 25% lower worm egg count than the average in 1990. A ram with an ASBV of -25% for WEC will pass half of this benefit onto his lambs, that is -12.5%.

The more negative the WEC ASBV the more resistant to worms the animal will be.

Is there any other way of picking the wormy ones?

No, it is impossible to predict which animals are genetically more resistant to internal parasites. The only way to do it is using ASBVs.

What's in it for me?

There is resistance to all but the newest families of drenches on Australian sheep farms, and at some point worm resistance to these new families will also develop.

It is therefore imperative to develop more permanent options to deal with worm outbreaks, particularly in areas that have significant worm problems.

In higher rainfall areas, where treating for worms and losses in production are major costs to the sheep enterprise, having animals that are genetically less likely to get a high worm burden can be invaluable.

There are a wide range of benefits including:

- Less drenching
 - less labour
 - less chemical usage
 - lower chance of drench resistance
- Lower losses in production from worm outbreaks
- Lower contamination of paddocks with worm eggs
 - lower challenge for young stock
 - less worms in the following season



What else changes if I just selected for lower WEC?

THE FREE LUNCHES

Higher muscling

Higher staple strength

THINGS TO WATCH

But remember, you can manage these correlations by selecting animals based on indexes or a balance of traits that you are interested in.

SHEEP GENETICS



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Disclaimer:

This brochure is intended as a guide only. Every effort has been made to ensure the information contained within is factual but this cannot be guaranteed.

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