Burnbrae Poll Merino Stud

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Welcome to another year of genetic selection and the Burnbrae Poll Merino team are excited to share with you what we've been recording data (60+ data points) on over the year to ensure we maximise genetic gain, as well as providing your business with options.

'Removing the noise out of your merino enterprise'

What would it be like if you were checking a few paddocks of sheep at different times throughout the year and the following didn't run through your head?

- There's one in there with fly, I'll need to fix her up.
- A third of the mob have score 3 dag, do they need jetting, crutching etc.?
- Are they in the right condition for the rams? How will they join?
- How much feed will they need to get back to condition score 3?
- They look wormy - do they need a FEC test? Do I have drench resistance?
- Why aren't my weaners growing? What condition will they make it through summer in?
- There are a few dead lambs in the paddock and the weather has been perfect, what's going on?
- Will the change in feed impact my staple strength?

In 2012 we set-out to remove noise from our high rainfall merino enterprise and provide our business with options. Noise to our business back in 2012 came in the form of dag, lamb deaths, flies, wrinkle, lame sheep, poor sheep structure, worms, wool colour and underperforming slow growing weaners. The genetic trends over the last decade, as listed below, highlight the general trends of our genetic gain across the three key areas of *welfare*, *production* and *reproduction*, that are pertinent to our business.

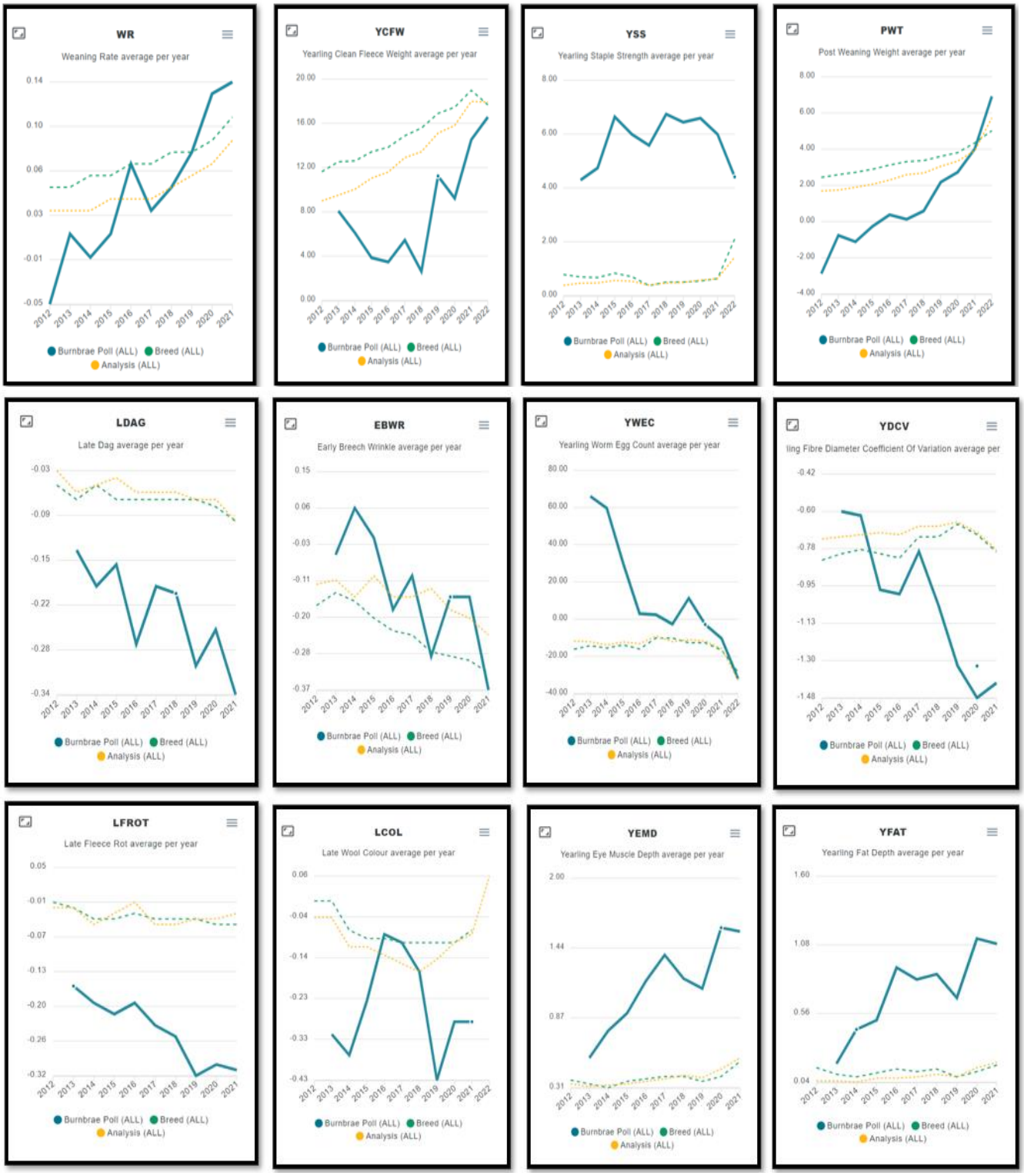


Image 1 – Genetic trend lines of Burnbrae Poll Merino Stud from 2012 to 2021/22.

In 2022, a total of 60 traits were measured and recorded for each of the ’21 drop rams from joining of their dams to hogget age, to refine selection and provide accurate ASBVs for the genetics we sell each year. Burnbrae has been undertaking full pedigree since 2018, with the inclusion of full genomics to be introduced in 2023 across the stud to improve greater accuracy and expedite genetic gain.

Ultimately what drives us is our passion for a good doing and robust maternal merino ewe. An animal that stands well from day one, to when they leave the farm, cuts 8 - 10% of their standard reference weight, grow at 350gms per day to day 130, lamb at 12 months of age, weans 150% lambs and is highly resistant to foot rot, worms, flies and dag, hits our joining targets with ease, as well as maintaining this condition throughout hard times on an 18-micron ewe.

Image 2 – 2022 drop lambs (@ 8 weeks of age) out of 2020 drop ewes.

The ins and outs of what traits are driving our genetic selection over the next decade.

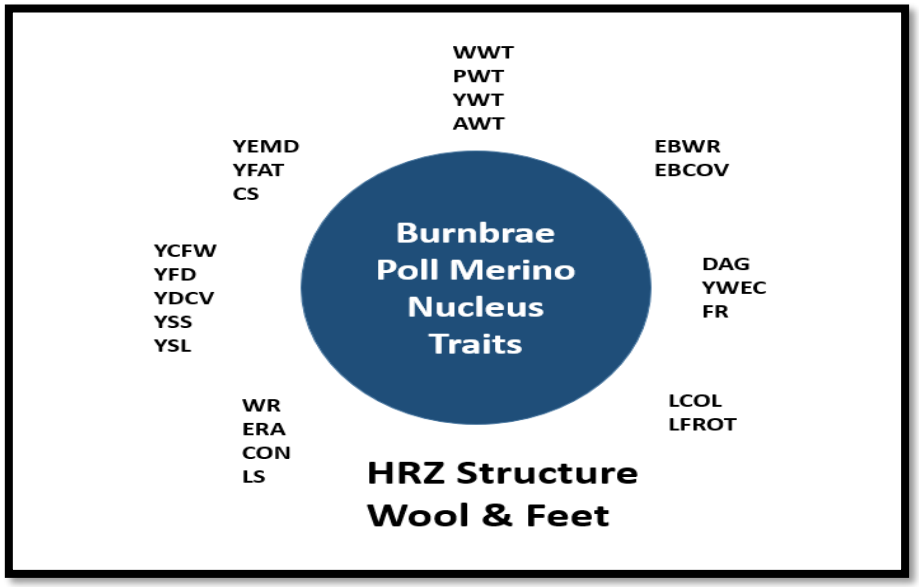


Image 3 – Key traits that are critical to us meeting our long-term genetic criteria.

A brief summary of what impact ASBVS can have on your business.

Growth

WWT – Weaning Weight

PWT – Post Weaning Weight

Post Weaning and Weaning weight are the genetic differences in live weight. Weaning 6 to 16 weeks of age and post weaning 7 to 10 months of age. The breeding values reflect the growth potential of an animal.

- Higher reproductive performance
- Marketable at earlier ages
- Higher fleece weight
- Higher lean meat yield
- Increased fibre diameter
- Mature weight goes up
- Lamb birth weight goes up

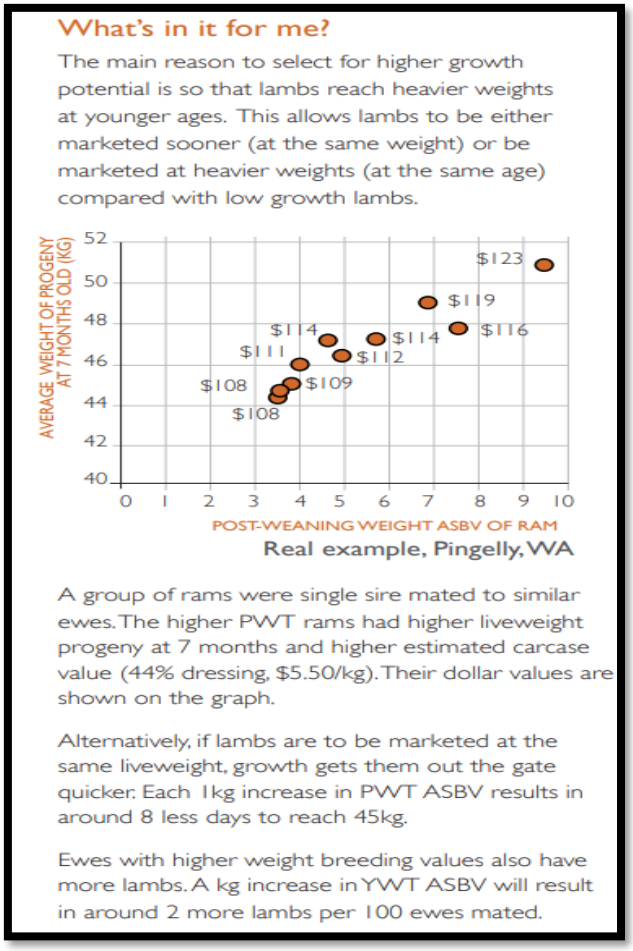


Image 4 – Highlights the importance of selecting for PWT when joining ewe lambs or turning off wethers at 7 mths of age. Sourced MLA.

Fleece Traits

YCFW – Yearling Clean Fleece Weight

Increased fleece weight means the more wool an animal will cut but does come at a cost:

- Body weight and growth go up
- Staple length goes up
- Fat goes down
- Reproduction decreases
- Higher fibre diameter
- Increased wrinkle score
- CV of fibre diameter goes up
- WEC goes up
- Condition score goes down

Image 5 – BP 200264 sire joined for a total of 13 weeks in 2022 across ewe lambs and mature ewes. Photo taken August 2022.

Yearling fibre diameter

YFD – Yearling Fibre Diameter

Decreasing fibre diameter means the wool will gradually get finer but does come at a cost:

- Comfort factor improves
- Lower fleece weight
- Lower growth
- Lower body weight
- Lower staple length
- Lower staple strength
- FDCV goes up
- Lamb survival decreases

Description	No of Bales	Net Wgt	Clean Wgt	Fibre Diameter				VM	SCH DRY	Staple						Position of Break			AWEX ID	Grwr Rsv	Curr Appr		Sale Price	
				Mic	CV%	COM	CUR			Lgth	CV%	Str	SS25	Haut	CVH	Tip	Mid	Base			Greasy	Clean	Greasy	Clean
AAAM	3	448	308	**16.9**	19.8	99.7	70	**.6**	**68.7**	**63**	12	**53**	41	66	34.9	29	61	10	MWF5S.		**1710**	2489	**1850**	2693
AAAM	4	600	420	**17.4**	20.4	99.3	67	**.5**	**70.0**	**71**	11	**53**	38	73	33.1	41	41	18	MWF4E.		**1785**	2550	**1951**	2787

Image 6 - Sale of our RWS accredited 2021 drop wether lambs wool @ 7mths of age.

Yearling Coefficient Variation of Fibre Diameter

YDCV – Yearling Coefficient Variation of Fibre Diameter

YDCV measures the amount of variation between individual wool fibres within a fleece which is taken from the mid side sample.

- Whole body energy improves (potentially more efficient animals)
- Worm resistance improves
- Less fleece rot/body strike
- Higher staple strength
- Fleece weight can fall

<u>Carcass Traits</u>

Muscle

YEMD – Yearling Eye Muscle Depth

Carcass muscling is reflected by eye muscle depth. Scanning is undertaken by a qualified scanner than measures the depth of eye muscle and fat using an ultrasound machine.

- Higher reproductive rate in ewes
- Higher worm resistance
- Higher lean meat yield
- Higher dressing percentage

- Shifts lean meat from the fore quarter to the loin
- Can reduce growth
- Reduces fleece weight
- Can reduce eating quality
- Adult weight is reduced

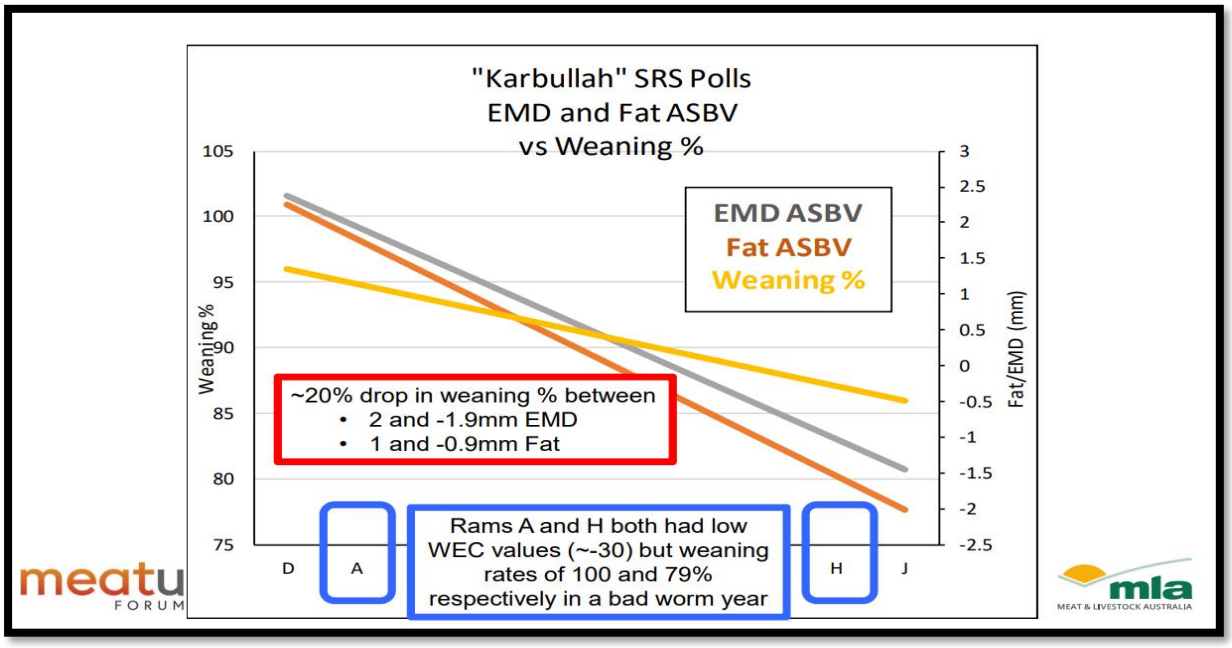


Image 7 – Demonstrates the importance of selecting for selecting a combination of traits for improving lamb survival in this instance WEC, EMD & FAT. Sourced from the Meatup and MLA forum.

Fat

YFAT – Yearling Fat Depth

Carcass fatness is reflected by the depth of fat between the eye muscle and the skin. Fat increases the ability of breeding ewes to maintain weight and condition in “tough” times.

- Improved reproductive rate -5% per 1mm of genetic fat
- CV of fibre diameter goes down
- Eating quality improves
- Fleece weight can decrease
- Adult weight is reduced
- High correlation to Condition Score

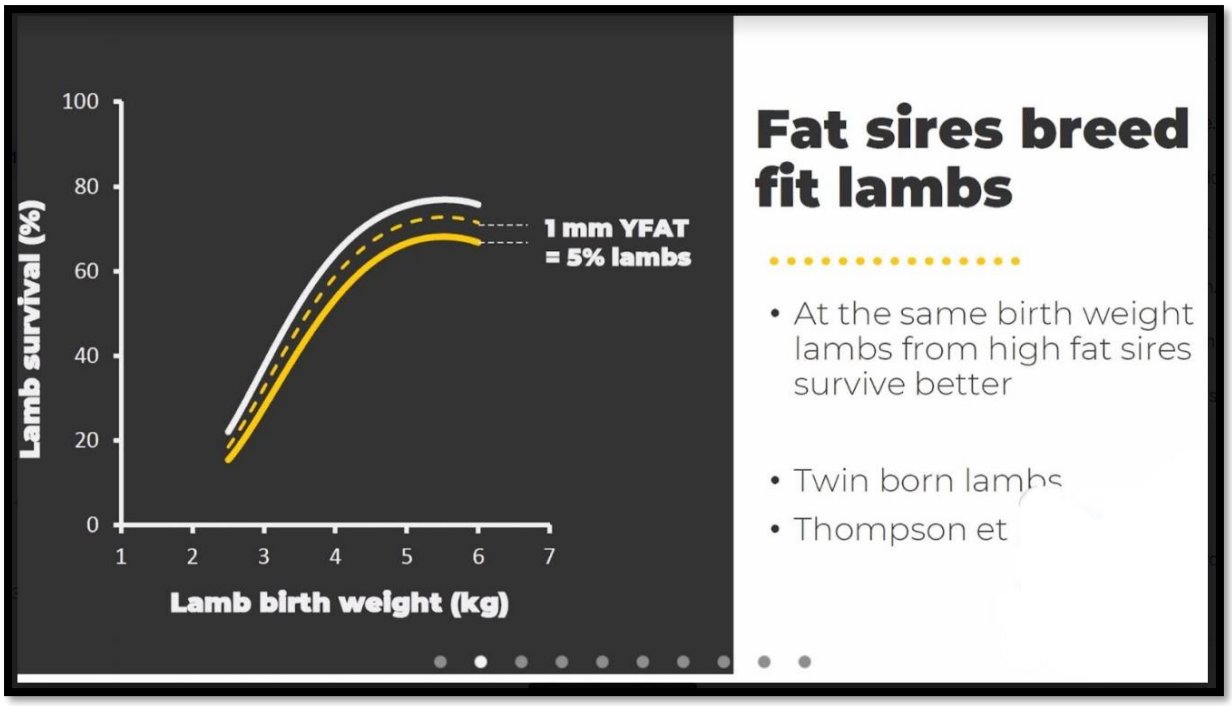


Image 8 – Highlights the importance of selecting for YFAT to improve lamb survival – 1mm of genetic fat increases lamb survival by 5%. Sourced from Nextgen Agri.

Welfare Traits

Welfare traits are the non-negotiables for our business. Anyone who has ever drenched, cleaned up a daggy or fly blown sheep is well aware of the effort that goes into the welfare of every individual animal. Which is why we've been selecting for worm resistant, dag and fly free animals to try and reduce the risk profile of our flock.

DAG

LDAG Late Dag

- Less fly strike
- More fleece wool
- Less crutching
- Not correlated to WEC
- Correlated to faecal consistency
- Lower EBWR & EBCOV

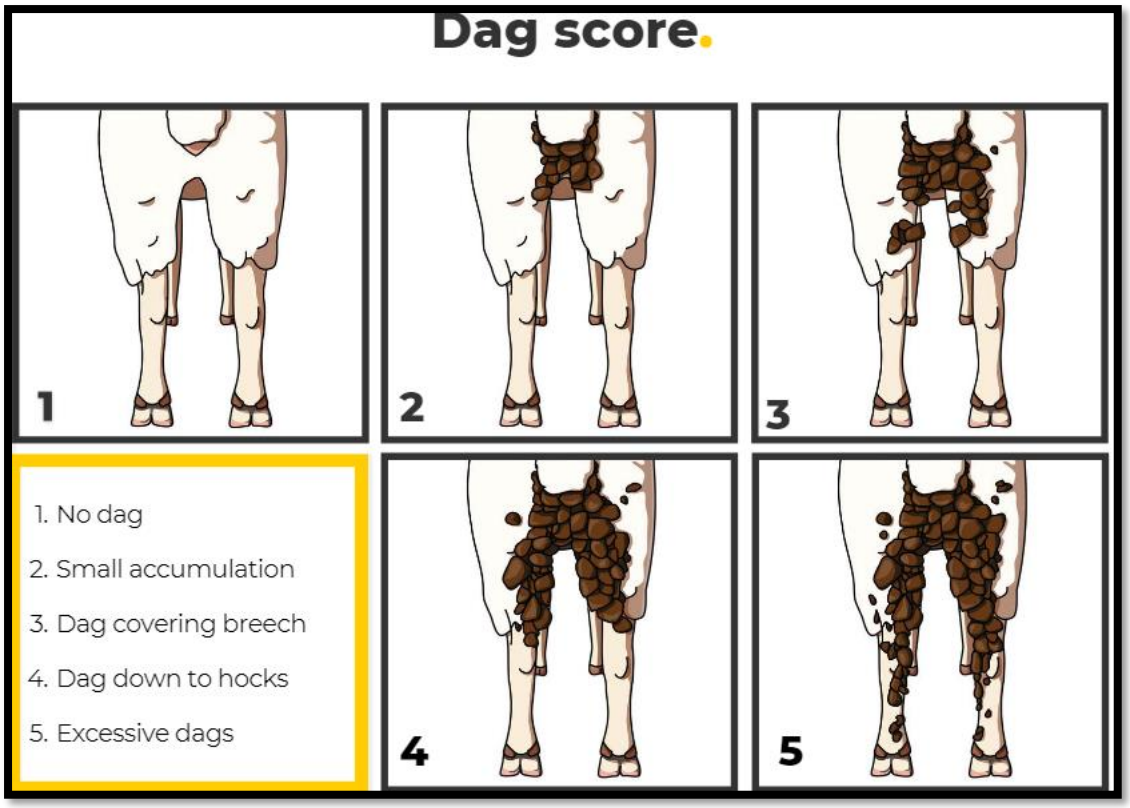


Image 9 – Dag scoring chart all stud sheep are scored before being crutched. Sourced from Nextgen Agri.

Fleece Rot

LFR - Late Fleece Rot

- Less fly strike
- More fleece wool
- Higher quality fleece wool
- Better handle in rainfall zones
- Less culls

Fleece Colour

LCOL - Late Fleece Colour

- Less fly strike
- More fleece wool
- Higher quality fleece wool
- Better handle in rainfall zones
- Less culls

Worm egg count

YWEC – Yearling Worm Egg Count

- Higher muscling
- Higher staple strength
- Less drenching
- Improved weaner performance
- Greater immune response to diseases
- Small correlation to Foot rot resistance

Breech wrinkle

EBWR – Early breech wrinkle

- Higher reproduction
- Less fly strike
- Higher staple length
- Lower fleece weight
- Less Dag

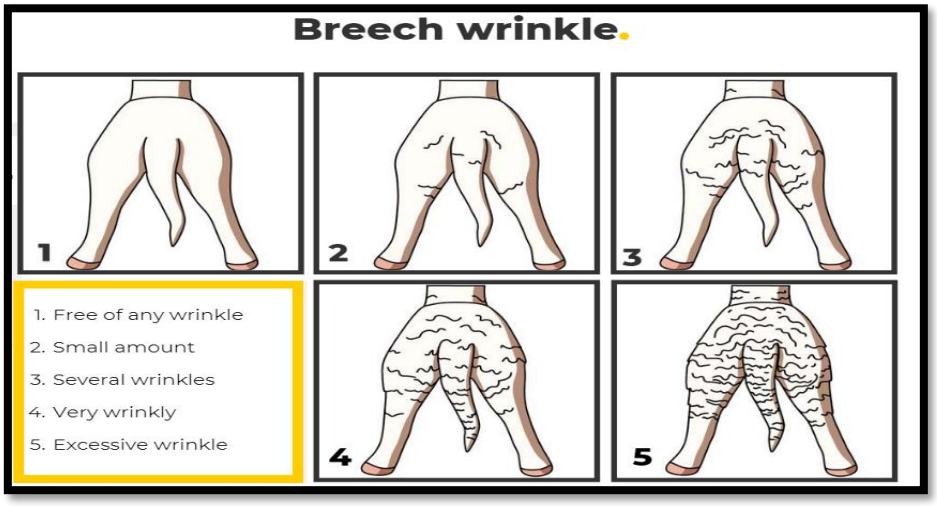


Image 10 – All stud sheep are breech wrinkle scored on the marking cradle at approx. 7 weeks of age. Sourced from Nextgen Agri.

Breech Cover

EBCOV – Early breech cover

- Higher reproduction
- Cleaner points
- Less fly strike
- Higher staple length

- Lower fleece weight
- Less Dag

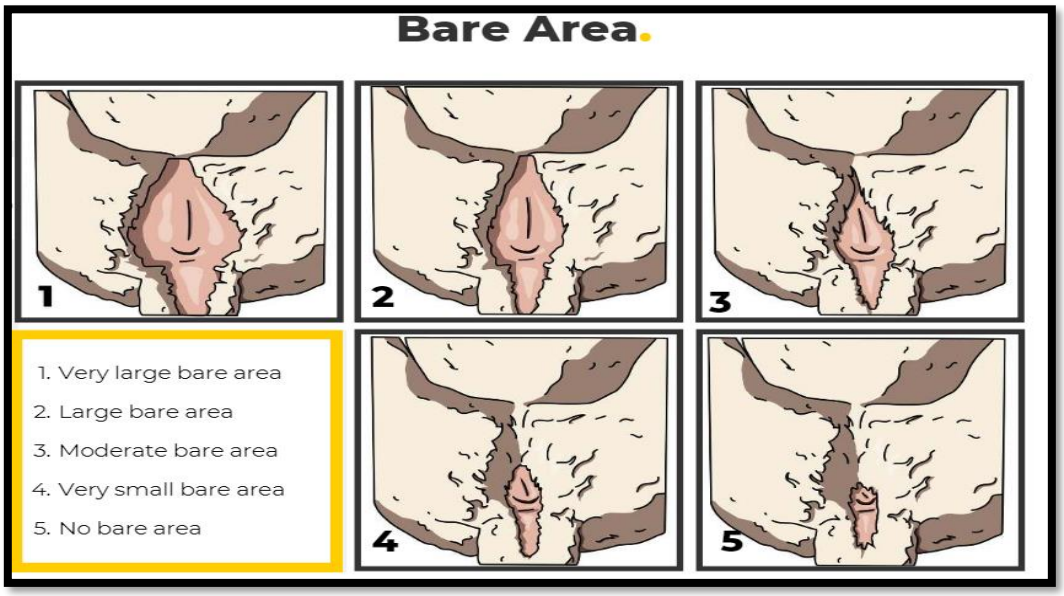
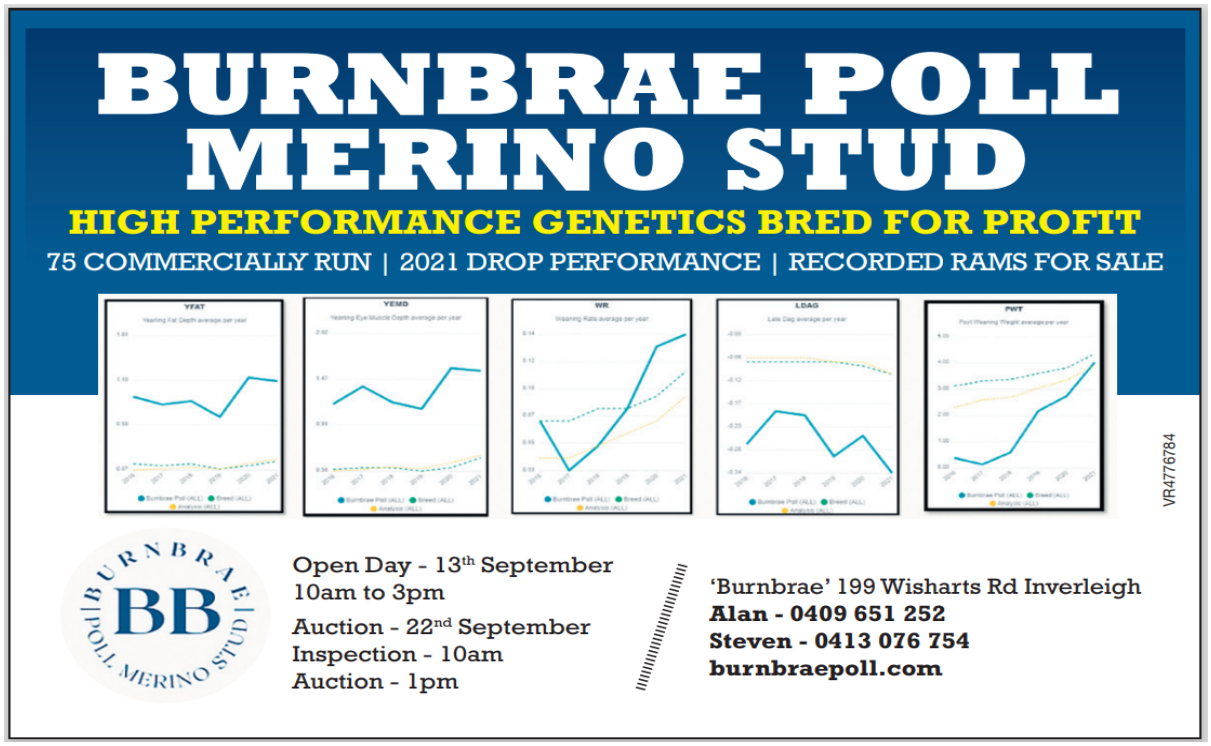


Image 11 – All stud sheep are breech cover scored on the marking cradle at approx. 7 weeks of age. Sourced from Nextgen Agri.

Hopefully that's answered a few of your breeding objectives if you've got any further questions get in touch with the team at Burnbrae or give the Nextgen Agri team a call to assist with your breeding objectives.

Image 12 – BP 210003 & BP 200264 at ewe lamb joining. Photo taken Feb 2022



Looking forward to seeing you on farm.

Cheers
Steven & Alan
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