



KURRA-WIRRA MERINO

NEWSLETTER 2020



Welcome

Welcome to the 23rd and best year of Kurra-Wirra Merinos. Wow, what a strange world we live in now. The world as we know it has changed, markets are different and relatively speaking everyone is having a favourable season. And through it all, who would want anything other than a merino flock?! Time and time again our benchmarking and others around tell us that the merino industry is still number 1 and the future looks even brighter. Never before have we had the tools, technology, and knowhow to keep driving the profit lines in our business and we will cover some of these in more depth later in the newsletter.

Also a massive thank you to all the clients who have stuck by the amazing animal that is the merino and for backing our breeding programs and future direction. We look forward to seeing you at our Inspection Day October 12th or Ram Sale day November 2nd at our new ram selling complex on property.

Corona Uncertainty

This year will be like no other with the Coronavirus taking the world by storm. Here at Kurra-Wirra we are no different, meaning we must adapt and forge on. We have taken the measure of interfacing the 2020 sale with Auctions Plus which is something we were considering regardless of the presence of Corona Virus. Pending Coronavirus restrictions, it could be business as usual and sale day could be the normal On-Property ram sale or we could be required to have a completely online sale.

The 2020 ram sale day could be one of several scenarios yet and this will become clearer the closer we get to the 2nd of November. Regardless, we will be having an inspection day on October 12th to give you a chance to see the rams. To be 'Covid safe' and make this possible we ask that you book a time to inspect them. Whatever the sale ends up looking like this year, you can rest assured that we will be able to give you a huge range of information to help you make your purchasing decision.



Investing in Genetic Gain

With Anthony Close

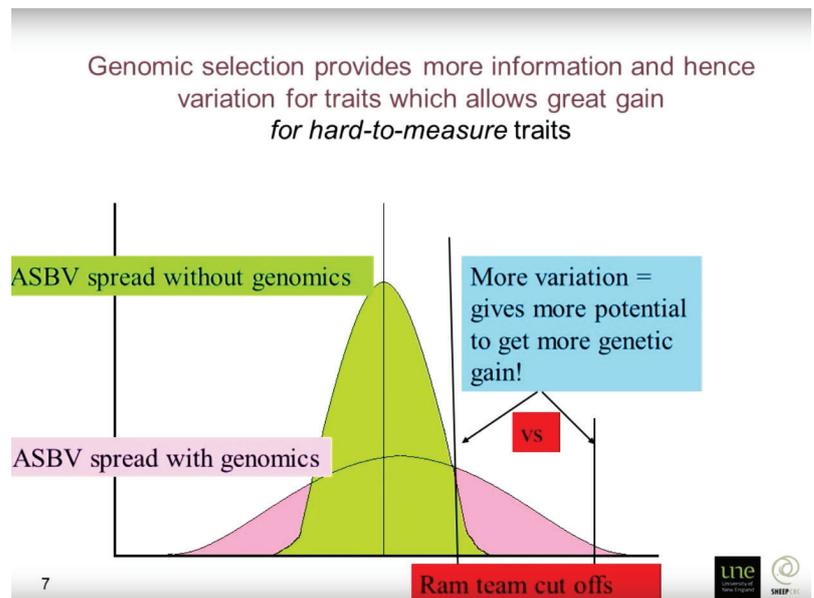
Huge Amount of Data Captured

We are investing in genetic gain like never before here at KW. The data's accuracy and quality we present you on sale day is second to none giving us and you the best chance to make the right decision on the future genetics of your flock. The Sale Team will have more data than ever before which will include full ASBV's, raw fleece measurements and this year we will be taking a visual score of the wool as well as structure using the visual scores for sheep guidelines so you can purchase with confidence if you cannot physically be there. We will also be providing some photos and videos of the rams on the Auction Plus page to enhance your buying experience.

Genomics

We have for the third time, taken the huge plunge to genomically test all rams in the drop, which further increases our ability to make the right decision.

Genomics we feel has been able to give us a huge leap as it allows us to better select the top rams which are the key to genetic gain. As you can see above in this graph, genomics changes the bell curve that we make selections from. It gives more variation to the data as the accuracy is higher (especially on hard to measure traits like adult ones) allowing more potential to get more genetic gain.



Genetic Trend

One of the most satisfying pieces of being a breeder, be it stud or commercial, is measuring your genetic trend. From the time of print the latest analysis on the 16/9 run we have seen massive genetic gain in the 2 indexes we focus on with index jumps of 10.7 in the DP+ index and 7.5 MP+ index. This is huge as good levels of genetic gain is around 5-6 points per year! Combine this with all individual traits heading in the right direction makes for a great outcome. We have seen this is reality also as the rams coming through for EMD and Fat testing on the 15th of May being +6kg for the same time 12 months prior. This has all been achieved though the strenuous testing our animals go through to make sure we make the correct selection choices as well as bringing in some of the best outside genetics we can find.

We encourage all clients to track their genetic trend through using the RamSelect app. It is a great way to see what your ram team power is year to year and areas you need to focus on to improve the genetics of your flock when buying rams. Please contact Anthony if you would like him to help set up your profile and upload your previous historical ram teams. At KW, we also love when clients send through their wins (and losses) on farm. We get a real buzz from seeing how our clients' animals are performing and enjoy helping work through any issues you are having on farm. Any scanning, shearing, growth rates etc that you are happy to share with us would be fantastic.

Breecb, Per HA returns & MLP findings

With Tom Silcock

Genetic Woo Cut

Pursuing genetics that deliver heavy cutting fleeces and lifting wool production are not the same thing. Sheep that measure well with a high Yearling Clean Fleece Weight (YCFW) do not necessarily end up maximising your property wool cut. Some genetics jump out of the blocks and deliver impressive Yearling Clean Fleece Weight (YCFW), then fail miserably to deliver with Adult Clean Fleece Weight (ACFW). Recent results from the industry Merino Lifetime Productivity Trials (MLP) highlight this fact. It also supports some industry critics, who claim YCFW is a poor predictor of ACFW. This is correct for some sheep, but not all. Also balancing growth rate, doing ability, survivability and fertility with fleece weight, will mean you get to shear and class more good wool cutting sheep every year. The ability to produce a quantity of wool even under nutritional pressure, delivers wool cut. Some genetics have fantastic breeding values for CFW but lack doing ability. In some cases, CFW shuts down with nutritional and environmental stress. Get your balance right and look at selecting for fleece weight for the average age of sheep you run = ACFW. This is difficult to collect, however we take the time to do it at Kurra-Wirra and The Mountain Dam. **The extensive amount of genomic testing we undertake enhances the accuracy of the ACFW in our flock, as ACFW is a genomically linked trait.**

Adult Body Weight (AWT) Effect of Per HA Return

Selecting for a high weaning weight (WWT), a high year-ling weight (YWT) and a high ACFW = High fleece weight, however it does not necessarily maximise your property wool production. This selection will also reduce your carrying capacity and your potential of Number of Lambs Weaned (NLW) per Ha, unless you restrict the adult weight (AWT). Ideally you want an animal that jumps out of its skin, until it is 12-18 months old, then its weight plateaus, while conceiving with a maximum number of lambs. This will push all your production measurements per ha, as long as the ewe's milk well and the lambs have good survival with doing ability.

How Important is Bare Breecb Cover (BCOV)?

AWI have done a lot of robust research on susceptibility to fly strike. The results are very conclusive. The number one impact to reduce fly strike, is Breecb Wrinkle (BWR), not BCOV. The next biggest impact to reduce fly strike is dags. No one wants dags and again they are heritable. Breecb cover finally ranks as the third biggest impact. Most of us have moved on from heavy wrinkled sheep from the industry past, but you should know what will give you the best results from selection. It is a fallacy that all sheep with low wrinkle will cut less wool. Whilst there have been some good industry examples of this being the case, there are equally great examples of heavy cutting, quality woolled, soft skinned, plain bodied sheep. Use the figures - A bare breecb may be ideal but focus on getting the wrinkles off the bum first.

Alice

We are pleased to welcome the newest member to the Kurra-Wirra team with Simon and Kathryn welcoming in a daughter, Alice Sarah Close on the 18th of June

2020, weighing 2.9kg and 48cm in length.



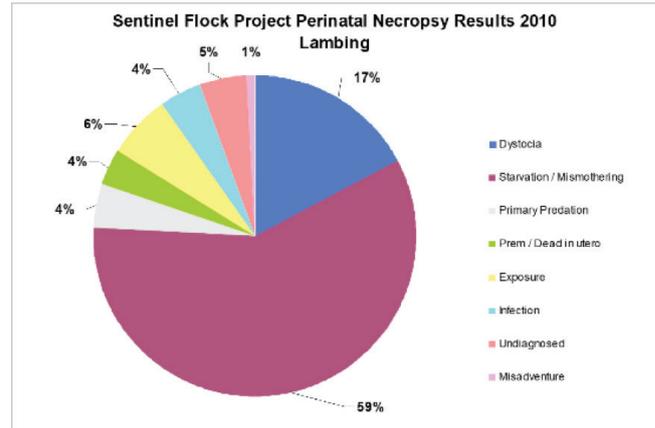
Birth Weighing

Since 2016 we have been investing heavily in gathering the highest standard repro data available, and we do not plan on changing anytime soon as it is some of the most valuable data we collect.

This was all due to local maternal composite breeder Tim Leeming introducing us to this graph, which shows 59% of lambs died due to starvation/Mis-Mothering. You can read about how we are striving to reduce lamb loss and boost our reproduction conversion in the below section 'Focused Management'.

All quality maternal composite flock have been capturing this data for 30 years and have selected on it, so there is no wonder they are ahead of the merino industry in lambing ability. Last time I checked the Merino is a maternal animal also, however in the past very few breeders have been collecting all the pieces of data in the jigsaw puzzle that is reproduction, and then selecting on it. The huge gene pool that the merino breed has allows for fantastic variation, and with variation comes the potential to select genetically better animals for these traits. To make this possible, we need more people collecting this data.

I would also urge you to consider this question: How could you buy rams from somewhere that isn't collecting this data? Merinos are a dual-purpose animal so it is about time we started selecting for both sides of the dual-purpose animal.



RBV for Repro

The RBVs for Reproduction that have been released for the MerinoSelect database will be a game changer! They will allow us to drill down further into repro to further capture gains.

Number of Lambs Weaned is the primary trait used in selection of reproductive performance. This trait is a compound trait that combines many stages of the reproductive cycle.

There are now 3 new component traits available and these are released as RBVs.

Conception (con)

Litter size (ls)

Ewe rearing ability (era)

This gives breeders the opportunity to target the component traits of reproduction that they are interested in.

There is also the additional traits released for Maternal Behaviour Score (MBS) and Condition Score (CS).

Trait	Abbreviations	Unit of Breeding Value	Trait Description	Example
Conception	YCON/CON	Ewes pregnant per ewes joined	The ability of a ewe to get in lamb in comparison to all the ewes in the same joining event.	Sires that have a higher conception breeding value will produce daughters that have a higher conception rate.
Litter Size	YLS/LS	Lambs per litter	The number of the foetuses a ewe has in comparison to all the ewes that got in lamb.	Sires that have a higher litter size breeding value will produce daughters that give birth to more lambs.
Ewe Rearing Ability	YERA/ERA	Lambs weaned per lambs born	The ability of the ewe to rear the lambs that she gives birth to.	Sires that have a higher ewe rearing ability breeding value will produce daughters that rear more of their litter.
Maternal Behavior Score	MBS	Score	The raw trait for maternal behavior score is measured on a 1 to 5 scale. Where a ewe with a 1 score does not move from the birth site of the lamb during tagging, therefore a lower breeding value is desirable.	Sires with more negative breeding values will produce daughters that do not move as far from the birth site.
Condition Score	CS	Score	The condition score of the ewe at joining.	Sires with a more positive breeding value will produce daughters that have a higher condition score at joining.

SG Repro Project - Linking Repro to Genomics

Sheep Genetics have initiated a project as they have been keenly trying to build the genomic database for reproduction and the new RBVs. They have provided free genomics on 2018 born maiden ewes to studs who enter full repro data including birth details like DOB and MBS. Luckily for KW (and for you) we are one of the very few studs across Aus and NZ that make the effort to collect this vital data and due to a lack of other studs being able to enter the data we had our 2017 drop entered also.

We have committed to joining both age groups for both the 2020 and 2021 years regardless of their performance. This slightly goes against our method at KW as we usually oust any animal from the stud that does not perform reproductively (empty scanning or dry marking). However, we thought this would be the perfect chance to again be at the forefront of industry and have great linkage for our Repro to Genomics.

In the future, this will give us fantastic ability to genomically select for reproduction on ewes that have not even started their reproduction cycle. This will be one of the huge benefits of genomics going forward and will support our decisions in this area.

Index Update

Anthony has been involved in the consultation for the updating of the indexes with the hope to keep them up to date and relevant to sheep producers. He was pushing for

- a. greater awareness/transparency to industry for what makes up each index
- b. Rolling 5-year average of data entered and index updated annually
- c. Making the index a \$ value to you our clients can make a better-informed decision about your ram purchasing decision and what a ram selection is worth to you.

Foetal Loss Project - Campylobacter

With Robert Close

We were approached over the summer by Livestock Logic Hamilton to be part of a foetal loss project investigating different foetal losses in maiden sheep in the area. The sheep needed to be getting joined for the first time and have full birth data including birth weight, DOB etc (another positive from birth tagging). We blood tested, CS and weighed 200 stud maiden ewes at joining and then just weighed and CS them again at rams out, scanning and second scanning (we scanned them twice to see if any had slipped and 7 had, bloods were taken), just prior to lambing and a full weigh, CS and blood again at marking time.

This project came at a great time for us, as when the studs came through for marking, we found a larger than normal % of Dry maidens were present. Test results came back, and it was confirmed that campylobacter was the reason behind this. This is a timely reminder for everyone to be on the look out for these types of issues and to consult with a vet if something does not seem right.

We now plan to vaccinate our ewes prior to their first joining as this has been shown to cure the disease.

The question is; can you afford to miss out on a lamb? Or is prevention the key? In our experience, we recommend the prevention strategy to make sure you are leaving no stone unturned in getting those lambs alive on the ground.

Horns Out, No HH Rams Used This Joining

With Simon Close

The 2020 joining was another progressive step for us, being the first time since our merino stud's inception that a horn ram was not used. We have been shifting towards the poll for a long time now having only used 1 horn ram in the 2019 joining. We will be able to better deliver poll rams in the future with the genomic tests we have received on the 2017/18 ewes giving us P/H also. We will use this in conjunction with MateSel to get the program to make sure all ewes that are confirmed HH to be joined to a PP so we will 100% get a PH. We also have a lot more PP rams than ever in our team to push this even more in the future.

Sire Evaluation Result

Kurra-Wirra genetics are continuing to stack against industry sires in the Balmoral Breeders Sire Evaluation trial. We really value this benchmarking system as it proves we are at the top of the industry and provides great linkage for our data as well as feedback to us as breeders we are on the right path. Sons of 170039 are for sale in this year's catalogue.

Balmoral Sire Evaluation Trial 2019 Drop Post Weaning Update

This table contains early results for the 2019 Drop.

Sire Name	Post Weaning Flock Breeding Values				
	WT (kg)	GFW (%)	CFW (%)	FD (µm)	CV (%)
Anderson Poll, 170660	2.5	19	18	1.1	-0.5
Baderloo Poll, 150171	-1.4	-4	-1	-0.7	-1.4
Conrayn, MVB123	-1.4	-1	-4	-0.3	0.8
Curlew, 170111	-3.7	-14	-15	-0.4	-0.7
Glen Holme, 162503 (Dohne)	10.6	3	-1	-0.1	-0.9
Gunallo Poll, 170295	2.3	8	6	-0.3	0.2
Jigsaw Farms, 160270	-1.3	-1	-1	1.5	1.4
Kerin Poll, 160137	1.9	15	14	0.3	0.2
Kerin Poll, 171646	0.7	-1	0	0.0	0.4
Kerrsville, 166010	-1.0	9	7	-0.3	1.3
Kia Ora, 150608 (Rex)	-1.5	2	2	-0.4	0.3
Kiandra Poll, 160793	-3.5	-5	-6	-0.5	0.6
Kurra-Wirra, 170039	1.6	5	8	-0.5	-1.8
Miramooona, 140012	3.0	4	6	0.1	-0.7
Moorundie Poll, NE73	-1.3	3	4	-0.4	2.4
Mumblebone, 170709	-0.1	-17	-15	1.0	0.0
Pendarra Poll, 160028	1.2	3	4	-0.8	0.3
Trigger Vale Poll, 170929	1.1	-9	-6	1.7	0.4
Turkey Lane, 170060	-3.6	3	-5	-0.9	-0.8
Willera Poll, 175584	-1.7	-9	-6	0.6	-0.2
Yiddinga, 170576	-4.6	-13	-12	-0.8	-1.3

	WT (kg)	GFW (kg)	CFW (kg)	FD (µm)	CV (%)
2019 Drop Average Post Weaning	25.3	2.3	1.6	16.2	17.9

New Super Sire

The Mountain Dam EJA030 "Tommy"

"Tommy" is a game changer.

Having been the 'Pick of the Drop' when 'The Mountain Dam' changed hands in late 2018, "Tommy" was worked as a ram lamb. He sired 18 sons with 6 being kept in the Flock Reserves and another 6 being in the sale team.

This proven strike rate, his phenotype and that of his progeny, plus the outstanding genotype that "Tommy" possess is a true credit to Tom Silcock and the breeding direction he was talking 'The Mountain Dam Stud', hence naming the ram after him as he is a true legend of the industry.

"Tommy" in the MerinoSelect data base is

- Top 1% of the for Maternal Behaviour Score (MBS)
- Top 5% in the data base for Pwt, Ywt, NLW & DP+ index
- Top 10% for Dag & MP+ index
- Carries 2 sets of the poll gene to be PP.



"Tommy" will be on display along with sons at both the Inspection and Sale day with semen available for purchase.

ANIMAL ID	PWT	YWT	YFD	YCFW	YFAT	YEMD	LDAG	EBWR	NLW	↓ MP+	DP+	POLL
THE MOUNTAIN DAM POLL- EJA030	9.27	12.03	-1.25	18.30	0.01	-0.13	-0.29	-0.38	15.00	175.06	189.21	PP
GENOMICS	ACC. 86	ACC. 90	ACC. 91	ACC. 87	ACC. 80	ACC. 83	ACC. 85	ACC. 95	ACC. 44	ACC. 57	ACC. 53	
	TOP 5%	TOP 5%					TOP 10%		TOP 5%	TOP 10%	TOP 5%	

Focused Management - The Key to Success

With Michael Close

In this section we cover a few of the key management practises that we have been focusing on to optimise our Profits, as well as a few key targets to make sure you get the most out of the Modern Merino

Condition Score

Condition score (CS) drives the productivity of the ewe through conception rates, lamb survival (especially twins), lambs follicle development and ewe mortality. For this reason, we put a huge emphasis on the ewe CS. Condition scoring ewes at weaning time into appropriate groups of +3 and -3 allows us to preferentially divert feed into those lighter ewes and give them the best chance of getting back up to conceive hopefully with twins. CS 3+ ewes are then brought back into the yards to visually remove the tail. This happens every 4 weeks after weaning to ensure all ewes are CS 3+ at joining.

We have done trials (not planned) where we followed the -3CS ewes from joining to scanning. Results showed on average a difference is 29% conception. It certainly pays to have healthy sheep!

Lamb Survival

Wow, what a season for lamb survival! With an early break and a mild winter and now a great start to spring, lamb survival rates at KW have been great and I am sure yours have too. The early winter lambing saw us have a singles percentage of 90% and twins 148%. **We found that in the mobs where the ewe count was 40 or less, the lamb survival averaged 168% compared to an average of 143% in a mob size of between 40 – 95 ewes.** With the use of techno wire, we have managed to get our spring lambing ewes down to a mob size average of 32 giving the lambs the best chance of survival while also using less paddocks. An easy way to drive profitability up!

Containment

When feed on offer (FOO) levels get down to 1000kg of DM/ha, all sheep go in containment to ensure we maintain 100% ground and give the grass/soils the best chance of being able to bounce back after the autumn break. 100% ground cover allows the rain to be absorbed into the soil through the roots rather than washing the topsoil you have worked hard on all your life down the creek. Our goal at KW is to have **100% ground cover 100% of the time!**

The benefits of containment are not only for the land, but the nutritional requirements drop while also saving labour. Due to the animal being in a confined area, the energy that the animal would otherwise waste walking around looking for food in the paddock is no longer lost therefore their energy requirements are not as high, which is worked out to be 10% less ME. Having all your sheep in the one area close to your silos also reduces the time spent driving around paddocks feeding, which can now be spent on other jobs.

A 55kg dry spring lambing ewe while in containment (February - March) requires 9ME/day for maintenance ration but due to being in containment, uses 10% less energy so now requires 8.1ME/day. Barley straw on average is around 5.6ME/Kilo/Dry Matter and 90% DM so works out to be 5.6ME as fed ($6.5\text{ME} \times 90\% \text{DM} = 5.6\text{ME as fed}$). A merino ewe would eat on average 700grams per day of straw therefore getting 3.9ME/day from the straw. That leaves 4.2ME short for the day. Barley grain on average is 12.3ME/K and again is only 90% DM so works out to be 11.1ME/kg/DM as fed. To fulfill the animal's maintenance ration, 380grams a day of barley is needed or 2.7kgs per week.

The effect containment has on our pasture growth rates is probably the biggest advantage to them. We keep our sheep in containment for approx. a month post the break to allow pastures to get to a minimum of 1200kg/ha before we let the sheep out. This wedge allows us to hit key targets for lambing and growth rates.

New Mixer Wagon

We have a new piece of nutritional management equipment on its way to KW for the 2020/21 summer feeding program.

We have purchased a new mixer wagon to really focus our nutritional management and give us an easier way to hit our production targets and to try to do it at the lowest cost. The mixer wagon will be fantastic for utilising non-traditional feed sources for sheep and cattle to turn multiple different feed sources into a Total Mixed Ration (TMR) so every time our animals (especially growing animals) take a bite, it is the perfect/exact same ration for them to convert the feed into production. We are lucky that we can also cut extreme quality silage here that tests around 10.5ME and 18%CP and have it fed in the paddock for around \$180T DM so when we combine this with some barley, straw and lupins we can make an extremely good ration for a very low cost.



Nutritional management is a key part of allowing the new genetics to express themselves and is why we use TRAC consultants to maximise our feeding program to get the most value out of the combination of our genetics, management and nutrition provided.

Committed to joining ewe lambs 2021

With the use of our great genetics and the right management and nutritional requirements provided, we are excited about joining our ewe lambs at 7.5 months of age. We are purely looking at this as a bonus and we are confident we will get good results. All stud lambs will be joined regardless of age in order to keep management groups the same and see which genetics join and which do not. Commercially, all single born lambs that are over 40kgs and twins at 38kgs (as we know twins join at a lighter weight) at joining time will get a ram which will hold them in good stead to have a healthy lamb. The key for anyone else having a go at this is to keep them going forward the whole time. Do not let them stop, so nutritional and internal parasite management are key to getting the result you are after.

Non-Mulesed 2020 Drop

With Anthony Close

In 2020 we have moved to a Non-Mulesed (NM) Stud flock as we believe we have the genetic power to move away from the practise of mulesing. We have been focusing on this in the last few years and have made significant gains in this area. We have breech scored all females (commercial included) since 2016 with only a small amount (5% approx. & dropping every year) above a score 3 on the visual sheep guide, which we consider unmanageable in a NM environment.

We also conducted a trial on our commercial weather lambs last spring leaving 50% of them NM and instead docking their tails with the Te Pari rolling gas knife. This seemed to do a great job and takes just a bit extra skin off the back of the tail to help reduce the dag.

These NM weather lambs were 2.2 kgs heavier at weaning and held that right through to when they were sold in April. We think that this extra gain would have been larger in a tight spring finish in % of weigh terms and would help our first joining considerably as there is a large correlation between scanning and body weight for their first joining.

As previously outlined, the 2 traits that are important to start with is EBWR and DAG and your progress can be tracked on the RamSelect app. If you would like to talk more about how you could potentially do the same or build a plan to get there in the future feel free to get in contact with any of the KW team.

REECH WRINKLE - LAMBS (BRWR)

Age: 7 to 10 weeks.

note: Lamb marking either standing or in the cradle. When scored in a cradle the below diagrams can be used upside down. It should be noted that when scored in the cradle, lambs may appear less wrinkly than if a lamb is standing.

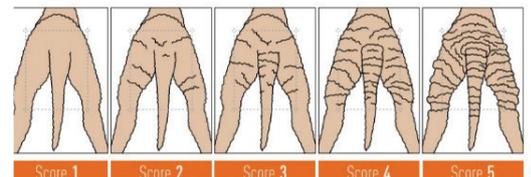
definition: Breech wrinkle refers to the degree of wrinkle at the tail set, sides of the tail (not wings), adjacent to the anus/valva and down the hind legs.

note: Only visual scores on unmulesed sheep (or lambs prior to mulesing) can be submitted to Sheep Genetics.

How to score: A single score of 1, 2, 3, 4 or 5. The highest score of either the tail set or leg zone is recorded.

Rule of thumb: A sheep with Score 1 has no wrinkle. A Score 5 sheep has extensive wrinkle at the tail set, sides of the tail (not wings), adjacent to the anus/valva and down the hind legs.

REECH WRINKLE - LAMBS (BRWR)



Footrot Trial

With Anthony Close

We have been quietly going about a new piece of testing here at KW over the last few months and we are the first people in Australia to test this trait, which is one that will make a lot of difference to sheep producers in the high rainfall zone (HRZ)

After seeing the benefits while on my Nuffield scholarship in New Zealand we were convinced to give it a try as it could be of significant help in bringing more merinos into the HRZ.

The ASBV for susceptibility to footrot (FR) is what we are measuring and rest assured, we have not brought footrot into our flock. We are fortunate to have an out block 100km from Kurra-Wirra where only cattle run, and we could isolate the mob away from them too. We brought in some sheep that were known to definitely carry virulent strains of footrot and we only took the excess rams that have not met the grade for sale there to be challenged in the footrot environment. These rams were then sent straight to slaughter after being cleaned up post trial.

We believe

the economic impact of footrot in the HRZ of Australia is significant as it cannot be managed very well. Recently there has been a vaccine that gives short-term relief on the market, but we believe that like most things, genetics is the key to solving the issue. Many people in the industry believe that Footrot is one of the silent production losses and that it is more important to genetically fix than WEC, as at least with WEC you can test and manage over crucial periods with drenching.

The extremely disappointing part of the trial was that we scored to the worst foot when recording the data, instead of recording every foot. This unfortunately made the data entered into SG useless for them to be benchmarked against and create an ASBV.

We have been working with our geneticist to help make some use of the data to hopefully make a With-in Flock EBV as there is obviously still good variation and making some decisions based off the data is better than not at all. While disappointed with the result of the trial endeavour to correct this with the 2020 drop to hopefully present an ASBV for Footrot at our 2020 sale.

The Footrot (FR) ASBV describes a sheep's susceptibility to footrot using its genetic difference in footrot score. This score measures how well a sheep retains foot health under a challenge with virulent footrot.

Figure 1. Foot scores (0–5 scale)

Score 0



Perfect foot.

Score 1



Slight to moderate inflammation from water maceration with some erosion and hair loss between the claws.

Score 2



The skin between the claws is inflamed and raw often with exudate and redness. This condition may involve part or all of the soft horn on the inside of the claws.

Score 3



Separation of the skin-horn junction, with underrunning of the heel or sole ranging from 5mm to fully across the sole but not extending to the outside edge of the sole of the claw.

Score 4



Extensive underrunning extending across the outside edge of the sole of the claw into the hard horn of the hoof wall with signs of active infection.

Score 5



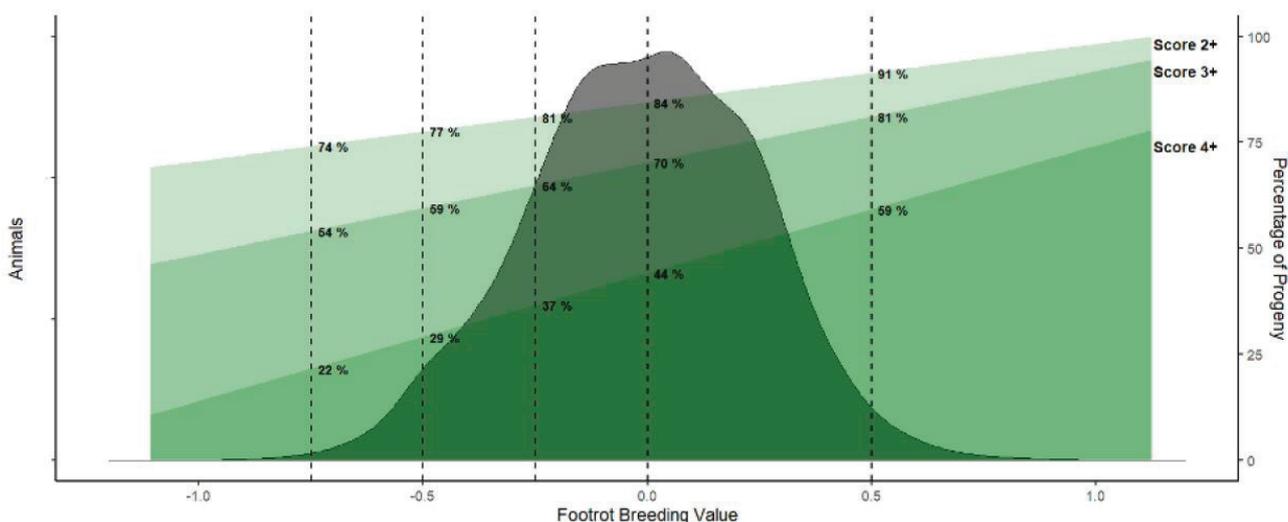
This is the most severe form of the disease involving the sole, with extensive inflammation and under-running of the hard horn of the entire hoof.

How Can I Use the FR ASBV?

The FR ASBV is a tool to select sheep based on their genetic susceptibility to footrot. By breeding from less susceptible sheep you can improve the level of tolerance to footrot in your flock over time. Sires with a lower FR ASBV will produce progeny which get infected less, have fewer affected feet and less severe footrot (fewer score 3 and 4 lesions). This will make footrot outbreaks easier to manage and reduce the impact of disease on production traits i.e. fleece weight, fleece quality, lambing performance, lamb survival, bodyweight, and growth rates. There is variation in genetic susceptibility to footrot. In the below graph you can see that under a specific severe footrot challenge, a flock with an average FR ASBV of -0.5 will have a significantly lower proportion of underrun feet (foot scores 3, 4 and 5) compared to a flock with an average FR ASBV of +0.5. The bell curve on the graph represents the current FR ASBV database population.

What Else Changes if I Just Select for Footrot Resistance?

Not much. There are no traits with strong enough genetic correlations to use as an indicator trait for susceptibility (or lack of) to footrot. There are also no genetic correlations with production traits.





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