

Genetics update

Breeding productive, naturally breech strike resistant Merinos

From recent R&D we know that Merinos with actual (phenotypic) Wrinkle score 2 and less, Dag score 2 and less, and Breech Cover score 3 and less, have low risks of breech strike similar to mulesing, while even lower scores lower the risk further.

We also know that mulesing, on average, reduces the natural wrinkle by 1.0 score, reduces urine stain by 0.5 score and reduces dag by 0.4 score. The higher the starting natural score, the greater the reduction.

Trials have also shown that to achieve the required wrinkle score to move to a naturally non-mulesed enterprise without an increased reliance on chemical prevention, the target Wrinkle ASBV in high wrinkle country is around minus 1.0, in moderate wrinkle country minus 0.6, and in low wrinkle country minus 0.3. There is consensus among most non-mulesed ram breeders regarding these targets, but there is considerable variability between country and sheep types, and each grower needs

to arrive at targets specifically relevant to their sheep and country.

In low dag country, a target Dag ASBV is a lower priority as they are much less frequently expressed. In high dag country a Dag ASBV of -0.4 is required but it is a tough target as only 5% of all MERINOSELECT animals measured for dag meet this performance target (see Table 4).

Armed with an increasing amount of breech trait scoring and Adult fleece assessments, Merino ram breeders are increasingly breeding more productive sires with high adult fleece weight and fertility along with natural resistance to breech strike. This is evidenced by the fact that the leading sires come from relatively recent drops of progeny tested sires and the momentum is building.

Tables 1 to 3 are generated using the MERINOSELECT animal search function (April 2021) and are examples of the leading breech strike trait sires for some high,

Fast facts

1. Ram breeders continue to make progress in breeding productive, naturally flystrike resistant Merinos.
2. List of High Use Merino Superior Sires has been released, and more Sire Evaluation sites commence.
3. Combined wether trial analysis is under review.

moderate and low diameter sires. While only an indicative selection, they show that breeding high performance, naturally resistant Merinos is harder in lower fibre diameter Merinos and for breeders in high dag regions. See how the low diameter sires have higher wrinkle scores, a function of past Merino types and breeding. Some of these leading sires will be too high in Worm Egg Count or Adult body weight or low in fat for some breeders.

During the past 15 years, a range of new traits has been added to Merino breeding objectives such as Worm Egg Count, Fat, Muscle, Wrinkle, Cover, Dag and Polled Genotypes. Whilst these additional traits are more important in some production systems than others, it has added further complexity to breeding programs. For an enterprise to move away from mulesing, important measures to consider are both the average performance of all sires in the flock as well as their consistency in type. Without consistency, the result will be wider variation in welfare risk, diverse management and costly culling.

Table 1. High micron, high index sires with leading breech trait ASBVs. There are sires in top 10% for wrinkle and top 10% for adult fleece weight.

DROP	ACFW	YFD	YFAT	YWt	WEC	NLW	EBWR	ECOV	LDAG	DP+
2016	34	0.6	1.1	17	-71	2.0	-1.4	-0.3	-0.3	210
2016	27	-0.5	0.6	11	18	0	-1.0	-0.3	0.1	187
2017	40	-0.1	-0.6	11	-	4	-1.1	-0.2	0.0	192
2017	25	-0.7	1.5	16	-17	20	-0.7	-1.3	-0.5	255
2019	21	-0.6	1.0	11	-	10	-1.0	-0.7	-0.3	204

Table 2. Moderate micron, high index sires with leading breech trait ASBVs. Leading sires are top 30% for breech wrinkle.

DROP	ACFW	YFD	YFAT	YWt	WEC	NLW	EBWR	ECOV	LDAG	MP+
2015	12	-1.8	0.7	8	-48	17	-0.5	-0.8	-0.1	193
2017	26	-1.7	0.8	10	-	10	-0.5	-0.8	-	201
2018	16	-1.4	0.6	17	-	15	-0.6	-1.4	0.1	198
2018	34	-1.8	-0.4	16	-6	0	-0.4	0.2	-0.1	202

Table 3. Low micron sires with leading breech trait ASBVs. Leading Sires are in the top 50% for breech wrinkle.

DROP	ACFW	YFD	YFAT	YWt	WEC	NLW	EBWR	ECOV	LDAG	FP+
2013	8	-2.9	-0.4	4	-	-	-0.2	-0.1	0.0	155
2014	14	-3.0	-0.5	5	-8	3	-0.2	0.0	0.1	160
2015	17	-3.0	-1.0	5	10	-9	0.0	0.0	-0.1	149
2018	2	-2.7	1.0	5	-	14	-0.2	-0.4	-0.2	164

Table 4. MERINOSELECT ASBV percentile table (7th April 2021)

PERCENTILE	ACFW	YFD	NLW	EBWR	ECOV	LDAG	DP+	MP+	FP+
Top 1%	35	-3.2	14	-1.3	-0.8	-0.5	197	192	177
Top 5%	29	-2.5	10	-1.1	-0.6	-0.4	181	178	163
Top 10%	26	-2.2	8	-0.9	-0.5	-0.3	173	170	157
Top 20%	22	-1.7	5	-0.7	-0.4	-0.2	163	162	150
Average	15	-1.0	1	-0.2	-0.1	-0.1	146	146	137
Top 70%	9	-0.5	0	+0.1	+0.0	+0.1	137	136	129

Trait leaders show the ASBV is [top 10%](#)

ACFW Adult Clean Fleece Weight YFD Yearling Fibre Diameter NLW Number of Lambs Weaned EBWR Early Breech Wrinkle ECOV Early Breech Cover LDAG Late Dag DP+ Dual Purpose Plus Index MP+ Merino Production Plus Index FP+ Fibre Production Plus Index



Merino Sire Evaluation new sites

List of high use Merino Superior Sires

The Australian Merino Sire Evaluation Association (AMSEA) oversees Sire Evaluation sites across Australia. These sites provide opportunities for ram breeders to compare the genetic performance of individual rams with those from other ram breeding flocks.

AMSEA has collated the ASBV and classing results of the 25 most-used industry sires that have been entered in Merino Sire Evaluation between 2015–2019. This report is available for download in the 'Latest Updates' section of www.merinosuperiorsires.com.au.

These 25 most-used sires are drawn from the 351 sires entered in Merino Sire Evaluation and the Merino Lifetime Productivity (MLP) project between 2015 and 2019. Eighteen of the 25 sires have been used in the MLP project, highlighting the popularity of many of the MLP sires.

Together, these 25 rams have sired more than 46,000 progeny across Australia, averaging 1,800 progeny per sire. All 25 have more than 1,000 progeny, with the most-used sire having nearly 5,500 progeny in 26 flocks. The average number of flocks directly using the genetics of these 25 sires is 16 flocks per ram.

Recent results for both wool and carcase traits are reported as ASBVs from MERINOSELECT. AMSEA classing results are also incorporated with the Tops and Culls which are reported as percentage deviations from the average.

Traits that are ranking in the top 10% are **highlighted**. Sires entered in the MLP project are denoted with the tag **MLP**.

Yearling (Y) and Adult (A) stages are reported where possible to provide an important older age perspective on results. Early Breech Wrinkle (EBRWR) and Late Dag (LDAG) scores plus Number of Lambs Weaned (NLW) are reported as per MERINOSELECT. Accuracies for these ASBV and index results are high, as would be expected with such large numbers of progeny.

If you would like any further Merino Sire Evaluation information or the 25 High Use Sires report, please email merinosireevaluation@bcsagribusiness.com.au.

New Dohne Sire Evaluation site

A new Dohne site has commenced this year at 'Coonong Station', Urana, with the Australian Dohne Breeders' Association acting as the Site Committee. This is the first time a specific Dohne site has been established, although Dohnes have been evaluated in Merino sites previously. Fifteen sires, including three link sires, were artificially inseminated (AI) to 90 ewes each in January 2021. Lambing will

be in June this year with the first field day planned for September 2022 and the final field day in September 2023. The site is planning to run all the ewe progeny through and assess them for their maiden lambing performance.

New Bathurst Merino Sire Evaluation site

A new Bathurst Merino Sire Evaluation site has started at 'Ferndale', Bathurst. MerinoLink will take on the responsibility as the Site Committee with Bathurst Merino Association working alongside. Sixteen sires including two link sires have been joined by AI to 55 ewes.

The number of high rainfall sites has expanded in recent years to now include New England, NSW; Bathurst, NSW; Boorowa, NSW; Yass, NSW; and Balmoral, Victoria.

There is also increasing interest at Sire Evaluation sites to additionally assess the sire's ewe progeny for their maiden lambing performance.

Each Sire Evaluation site is run by a Sire Evaluation Site Committee. If you are interested in joining a committee and actively keen to assist in providing good oversight for the animal assessment protocols needed to obtain the high quality breeding value data, please contact Emma Grabham from AMSEA via merinosireevaluation@bcsagribusiness.com.au.



Where to for wether trials?

The last Merino Bloodline Performance was conducted in 2018. It was an across wether trial site analysis of trials conducted in the previous 10 years. There has been a long-term decline in the number of wether trials in recent times and they are now only conducted in NSW. There has also been a significant increase in the number of mixed bloodline teams (wether flocks with multiple ram sources) that are difficult to describe as a single "bloodline or stud".

AWI, NSW DPI and Animal Genetics and Breeding Unit (AGBU) are reviewing the impact of these changes on the validity of conducting another across trial analysis. If an across site analysis is no longer robust/cost effective, the aim will be to find the best way to support the individual wether trials at Glen Innes, Bathurst, Australian National Field Days (Orange), Bookham, Parkes, and the Peter Westblade trial at Wagga and

Condobolin. The DNA Flock Profile test may be able to replace or complement wether trial evaluations and at a lower cost, but this also is being investigated. **B**

More information:

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