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SA MERINO SIRE EVALUATION TRIAL FIELD DAY

TUESDAY 4TH JUNE 2019, KEYNETON STATION

2018 DROP PROGENY

Schedule

11:00am Field Day begins

11:30am–12:30pm Presentations in marquee

- **11:30-11:35 Roger Fiebig, SA Merino Sire Evaluation Trial Chairman**
Welcome
- **11:35-11:40 Joe Keynes, SA Merino Sire Evaluation Site Host**
Site Summary: The season and stock management
- **11:40-11:55 Ben Swain, AMSEA Executive Officer**
Merino Sire Evaluation – What's the Value to Breeders?
- **11:55-12:10 Ben Swain, AMSEA Executive Officer**
Merino Lifetime Productivity Project Overview and Update
- **12:10-12:30 Eleonora Dal Grande and Torben Nielson**
Reducing the impact of health conditions in sheep – a value chain approach

Trade displays

Lunch and refreshments available

Inspection of 2018 Drop progeny in sire groups together with results from measured and visual assessments

3:00pm Field Day closes

South Australian Merino Sire Evaluation

Australian Merino Sire Evaluation Association (AMSEA) trials provide the opportunity for objective comparisons to be made between rams from different studs by evaluating their progeny for sheep type, structure, wool production and carcass traits. The progeny are all run together in the same environmental conditions with all male progeny marked. The SA site was established in 2017, and is important for South Australia's Merino industry given no other public Merino sire evaluation trials occur in SA. The site will make an important contribution to genetic improvement for Merinos in SA. This is an accredited sire evaluation program run under the rigorous design, recording and data evaluation protocols of AMSEA.

Site Breeding Objective

Rams will be capable of producing progeny with 18-21 micron fleece at 12 months with at least 4kg of wool from 8 months growth from an easy-care plain bodied sheep. In addition, progeny should be capable of achieving 22-25kg carcass weight at 10-12 months of age. Ewe progeny will be fertile and capable of high natural conception rates when first joined at 18 months.

Host Property and Ewe Base

Keyneton Station, Keyneton were the inaugural host of the 2017 Drop and have continued to host the 2018 Drop progeny for the SA site. Keyneton Station is located in the eastern Mount Lofty Ranges and receives an average 500mm rainfall in a winter dominant pattern, although Keyneton only recorded 351mm in 2018. The Keyneton Station ewes are 65-70kg and produce 19-20 micron wool. The ewes mated for the 2018 trial were sourced from primarily 2½ year old age group and were classed prior to joining to ensure an even line.

Site Summary

The site evaluated 16 entered rams including 3 link sires in 2018. 60 ewes were joined to each sire via AI in mid-January 2018, over two days which recorded a maximum temperature of 41.3°C and 43.1°C respectively (Nuriootpa Weather Station 14km west of Keyneton). At day 45 and then followed up at day 70, the ewes were scanned as pregnant with a resulting conception rate of 51% from the AI program. The break to the season was late at Keyneton, occurring early-June 2018. This was followed by below average Spring and Summer rainfall. As a result, the ewes were fed in a containment lot through late Summer and Autumn during mid to late pregnancy. In mid-May the ewes were divided into twin and single mobs. Both mobs were placed on improved perennial pastures. The twin mob continued to have access to self feeders leading up to and through lambing. When the break finally occurred in early-June, the conditions were cold resulting in slow pasture growth.

The first cohort of lambs born from the 16 rams occurred in June 2018. Lamb marking took place on 9th & 10th July 2018 with visual traits fibre pigmentation, non-fibre pigmentation, recessive black, random spot, breech cover and breech wrinkle recorded. Sire pedigree was established by DNA testing. There were 466 progeny generated across the 16 rams. The average breech cover was visually assessed as 2.5 (from a range of 1-5, as per the Visual Sheep Scores publication), and the average breech wrinkle was visually assessed as 1.7 (from a range of 1-5, as per the Visual Sheep Scores publication). This indicates the lambs were reasonably plain.

At 17 weeks of age the lambs were weaned. Weaning weights were assessed, with single lambs weighing an average of 37.1kg and twin lambs an average of 34.5kg, giving a total average weaning weight of 36.1kg live weight. Lambs were drenched and weaned on to vetch and oat pastures, and were tip shorn in early October to reduce potential grass seed issues. The 2018 growing season was a very tough one at Keyneton, with a late break in early June followed by well below half the average Spring rainfall and no Summer rainfall. The 2019 season has also been tough with only 18mm rainfall in Autumn, which is also well below the average. As a result, lambs were fed Johnson's pellets and barley from December 2018, and are still currently on this feeding regime, thus far equating to a full 6 months of supplementary feeding due to the drought conditions.

On 13th May 2019, major phenotyping was recorded on the 2018 Drop progeny including:

- Mid-side fleece sampling: yield, fibre diameter, fibre diameter coefficient of variation, fibre diameter standard deviation, curvature, comfort, staple strength and staple length.
- Visual classing: fleece rot, wool colour, wool character, dust penetration, staple structure, face cover, jaw, legs/feet, dag, and selection grade.
- Carcase scanning: body weight, fat, and eye muscle depth.

To complete assessments on the 2018 Drop, greasy fleece weight will be recorded at shearing in early June 2019, along with post-shearing visual traits of shoulder/back and body wrinkle. Body weight will also be recorded. Worm egg count has not been obtained due to sampling results being below the required AMSEA threshold for testing.

Understanding the Results

The sire results displayed in this report include **Adjusted Sire Means and Within-Site and Within-Drop Flock Breeding Values (FBVs)**.

Term	Definition								
Adjusted Sire Means:	Sire means are the average performance of all the progeny of a sire adjusted for an individual's birth type, rear type, age of dam, management group, differences in progeny group sizes and the number of F1 breeding age ewes that are dry, lambled and lost, rearing single or multiple lambs. Adjustments improve the accuracy of the result and the size of the adjustment is based on the actual influence of these factors on the drop. No account is made for trait heritability and genetic correlations between traits. The overall progeny group mean is listed at the bottom of the table.								
Within-Site and Within-Drop Flock Breeding Values (FBVs):	FBVs presented are calculated from data recorded within-site and within-drop and express the expected genetic performance of a sire relative to another sire in the evaluation (when mated to the same standard of ewes). FBVs improve the accuracy of sire results because they account for the association between traits, the heritability of the trait, and non-genetic affects such as birth and rear type, sex (see adjustments listed earlier), and the number of progeny a sire has in the analysis.								
The different types of data presented in this report have been chosen to be inclusive of the woolgrower demand for diverse data requirements.									
Age at assessment:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">M = Marking - 14 to 42 days</td> <td style="width: 50%;">P = Post Weaning - 210 to 300 days</td> </tr> <tr> <td>W = Weaning - 42 to 120 days</td> <td>Y = Yearling - 300 to 400 days</td> </tr> </table>	M = Marking - 14 to 42 days	P = Post Weaning - 210 to 300 days	W = Weaning - 42 to 120 days	Y = Yearling - 300 to 400 days				
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Breeders flock, Sire number:	Identity of the breeder's flock and the sire's number or name.								
Classers Visual Grade:	A classer grades all progeny as either <u>Tops, Flocks or Culls</u> based on their visual assessment of all traits relative to the Site's Breeding Objective (see above) and is done in conjunction with the assessment of a range of visual traits. This classing reflects the approach that may be undertaken in a commercial flock.								
Indexes:	A breeding index combines multiple flock breeding values into a single value that reflects a certain emphasis on these traits (Further information is available at merinosuperiorsires.com.au/resources).								
Traits: Abbreviation, trait and the (units reported)	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">FD: Average fibre diameter (um)</td> <td style="width: 50%;">SL: Staple length (mm) at the mid-side</td> </tr> <tr> <td>WT: Body weight (kg)</td> <td>SS: Staple strength (Nktex) at the mid-side</td> </tr> <tr> <td>FDCV: Fibre diameter coefficient of variation (%)</td> <td>EMD: Eye muscle depth (mm) at the 'C' site</td> </tr> <tr> <td></td> <td>FAT: Fat depth (mm) at the 'C' site</td> </tr> </table>	FD: Average fibre diameter (um)	SL: Staple length (mm) at the mid-side	WT: Body weight (kg)	SS: Staple strength (Nktex) at the mid-side	FDCV: Fibre diameter coefficient of variation (%)	EMD: Eye muscle depth (mm) at the 'C' site		FAT: Fat depth (mm) at the 'C' site
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Visual Traits as reported:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">BWR: Breech Wrinkle</td> <td style="width: 50%;">CHAR: Wool Character</td> </tr> <tr> <td>BCOV: Breech Cover</td> <td>FACE: Face Cover</td> </tr> <tr> <td>DAG: Dag</td> <td>LEGS: Feet and Legs</td> </tr> </table> <p style="text-align: center;"><i>Based on the Visual Sheep Scores. Further traits are available in Site Reports.</i></p>	BWR: Breech Wrinkle	CHAR: Wool Character	BCOV: Breech Cover	FACE: Face Cover	DAG: Dag	LEGS: Feet and Legs		
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BCOV: Breech Cover	FACE: Face Cover								
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Trait Leaders:	The highest performing 3 (or more if equal) sires for each trait (trait leaders) are highlighted by shading .								

2018 Drop – Adjusted Sire Means

Wool, Weight and Carcase Results

Breeders flock, Sire number	Progeny No*	YFD (um)	YFDCV (%)	YSL (mm)	YSS (NKtex)	WWT (kg)	YWT (kg)	YEMD (mm)	YFAT (mm)
Challara Poll, 140394	39	16.1	17.1	77.6	35.3	36.7	41.3	25.1	2.7
Collinsville Poll, 160608	21	15.7	18.7	62.8	40.8	35.8	34.6	23.9	2.5
Flairdale Poll, 150078	21	15.4	19.3	66.9	35.6	34.2	36.6	23.0	2.4
Gunallo Poll, 160473	28	15.9	18.6	72.7	31.9	34.5	38.5	23.8	2.7
Hazeldean, 003368	35	15.4	17.6	71.7	31.4	37.1	46.2	25.6	2.8
Hilton Heath Poll, 150817	26	17.0	17.8	73.9	35.8	36.5	47.2	25.5	2.9
Kelvale Poll, 160088	37	16.4	17.2	78.4	40.0	34.4	43.2	26.0	2.9
Leahcim Poll, 132624	25	15.9	17.9	71.7	32.6	36.0	42.3	25.8	2.9
Lucernbrae Poll, 160010	13	15.8	18.9	66.5	35.9	36.5	38.6	24.0	2.6
Malleetech Poll, 166048	25	15.9	17.3	66.8	35.6	34.3	37.8	24.4	2.7
Mumblebone, 160418	31	15.7	18.4	65.6	29.5	37.3	41.8	25.8	2.9
Nyowee Poll, 14L770	7	Unreported due to insufficient progeny numbers				Insufficient progeny.		Insufficient progeny.	
Radnor Poll, 120604	27	15.9	19.4	61.0	33.6	37.6	38.0	23.6	2.4
Roemahkita Poll, 160256	40	15.1	18.5	67.0	31.0	35.8	41.9	24.3	2.6
Tuckwood Poll, 161069	24	15.7	17.9	71.7	33.7	37.5	42.1	24.0	2.8
Wallaloo Park Poll, 161514	31	16.1	17.1	77.3	35.1	37.7	41.8	25.2	2.7
Average	27	15.9	18.0	70.5	34.7	36.0	40.7	24.8	2.7

*Progeny number is as at the time of classing.

Adjusted Sire Means have been adjusted for birth and rear type, age of dam, age of measurement, management group and the number of progeny a sire has in the trial. See the 'Understanding the Results' table for further explanation.

2018 Drop – Visual Scores & Classer's Grade

Visual Scores

Breeders flock, Sire number	Marking 09/07/18		Yearling 13/05/19			
	BWR	BCOV	DAG	CHAR	LEGS	FACE
Challara Poll, 140394	1.6	2.1	1.5	2.6	1.4	1.9
Collinsville Poll, 160608	1.9	2.7	1.5	2.7	1.2	2.2
Flairdale Poll, 150078	1.9	1.9	1.6	2.5	1.3	2.3
Gunallo Poll, 160473	1.8	2.6	1.8	2.4	1.3	2.4
Hazeldean, 003368	2.2	2.8	1.6	2.5	1.5	2.0
Hilton Heath Poll, 150817	1.9	2.7	1.6	3.2	1.2	2.4
Kelvale Poll, 160088	1.2	2.6	1.7	2.4	1.3	1.8
Leahcim Poll, 132624	1.9	2.5	1.5	2.4	1.2	2.0
Lucernbrae Poll, 160010	1.2	2.7	1.6	2.7	1.1	2.0
Malleetech Poll, 166048	1.9	2.0	1.7	3.1	1.4	2.5
Mumblebone, 160418	1.4	2.3	1.7	2.6	1.2	2.2
Nyowee Poll, 14L770	<i>Unreported due to insufficient progeny numbers.</i>					
Radnor Poll, 120604	1.6	2.1	1.8	2.5	1.2	2.7
Roemahkita Poll, 160256	1.8	2.7	1.7	2.4	1.4	2.2
Tuckwood Poll, 161069	1.9	2.5	1.6	2.5	1.3	2.2
Wallaloo Park Poll, 161514	1.2	2.5	2.0	2.9	1.2	2.0
Average	1.7	2.4	1.7	2.6	1.3	2.2

Classer's Grade

Breeders flock, Sire number	Classer's Grade		
	Progeny No*	YTOPS (%)	YCULLS (%)
Challara Poll, 140394	39	10	-7
Collinsville Poll, 160608	21	-11	17
Flairdale Poll, 150078	21	-17	15
Gunallo Poll, 160473	28	-7	7
Hazeldean, 003368	35	16	-11
Hilton Heath Poll, 150817	26	21	-10
Kelvale Poll, 160088	37	25	-11
Leahcim Poll, 132624	25	-9	-5
Lucernbrae Poll, 160010	13	-3	-2
Malleetech Poll, 166048	25	-17	6
Mumblebone, 160418	31	-7	8
Nyowee Poll, 14L770	7	<i>Insufficient progeny.</i>	
Radnor Poll, 120604	27	-11	19
Roemahkita Poll, 160256	40	6	-3
Tuckwood Poll, 161069	24	8	-8
Wallaloo Park Poll, 161514	31	-9	-6
Average	27	20	25

*Progeny number is as at the time of classing.

The Classers Visual Grade results are presented in the table above as Adjusted Sire Means which are adjusted for birth and rear type, age of dam, age of measurement management group and the number of progeny a sire has in the trial. See the 'Understanding the Results' table for further explanation.

2018 Drop – Flock Breeding Values

Wool, Weight and Carcase Results

Breeders flock, Sire number	Progeny No*	YFD (um)	YFDCV (%)	YSL (mm)	YSS (Nktx)	WWT (kg)	YWT (kg)	YEMD (mm)	YFAT (mm)
Challara Poll, 140394	39	0.5	-1.5	11.5	1.4	0.5	0.9	0.6	0.0
Collinsville Poll, 160608	21	-0.2	0.8	-10.7	8.0	-0.8	-10.4	-1.4	-0.8
Flairdale Poll, 150078	21	-0.8	1.8	-5.3	1.0	-1.8	-6.7	-2.8	-1.5
Gunallo Poll, 160473	28	0.1	0.9	3.7	-3.7	-1.4	-4.0	-1.7	-0.2
Hazeldean, 003368	35	-1.0	-0.6	1.8	-5.0	1.2	9.6	1.5	0.7
Hilton Heath Poll, 150817	26	1.8	-0.3	5.0	1.5	1.0	11.2	1.3	1.1
Kelvale Poll, 160088	37	1.0	-1.3	13.0	7.7	-0.9	4.1	2.2	1.0
Leahcim Poll, 132624	25	0.0	-0.2	2.2	-2.7	0.1	1.9	1.6	1.0
Lucernbrae Poll, 160010	13	-0.1	1.1	-4.2	0.2	0.0	-3.4	-1.1	-0.5
Malleetech Poll, 166048	25	0.0	-1.0	-6.4	2.2	-1.5	-4.6	-0.5	0.1
Mumblebone, 160418	31	-0.3	0.7	-7.5	-7.1	1.0	1.5	1.8	0.8
Nyowee Poll, 14L770	7	<i>Unreported due to insufficient progeny numbers.</i>				<i>Insufficient progeny.</i>		<i>Insufficient progeny.</i>	
Radnor Poll, 120604	27	0.0	2.0	-14.4	-0.9	1.0	-4.4	-2.0	-1.4
Roemahkita Poll, 160256	40	-1.5	1.0	-5.5	-5.8	-0.2	1.9	-1.0	-0.8
Tuckwood Poll, 161069	24	-0.4	-0.2	1.6	-1.1	1.1	2.0	-1.1	0.1
Wallaloo Park Poll, 161514	31	0.5	-1.4	10.5	1.2	1.4	1.6	0.8	0.2

*Progeny number is as at the time of classing

Flock Breeding Values account for the association between traits, the heritability of the trait, and non-genetic affects such as birth and rear type, sex and the number of progeny a sire has in the analysis. See the 'Understanding the Results' table for further explanation.

2018 Drop – Birth Type

Breeders flock, Sire number	Progeny Weaned	Birth Type	
		Single	Twin
Challara Poll, 140394	39	19	20
Collinsville Poll, 160608	23	8	15
Flairdale Poll, 150078	23	19	4
Gunallo Poll, 160473	31	16	15
Hazeldean, 003368	37	14	23
Hilton Heath Poll, 150817	28	24	4
Kelvale Poll, 160088	36	24	12
Leahcim Poll, 132624	25	16	9
Lucernbrae Poll, 160010	13	8	5
Malleetech Poll, 166048	27	17	10
Mumblebone, 160418	32	16	16
Nyowee Poll, 14L770	7	5	2
Radnor Poll, 120604	28	15	13
Roemahkita Poll, 160256	40	22	18
Tuckwood Poll, 161069	25	16	9
Wallaloo Park Poll, 161514	32	16	16
Total	446	255 57%	191 43%

For further information in relation to Sire Evaluation, please contact Ben Swain, AMSEA Executive Officer on 0427 100 542 or ben.swain@bcsagribusiness.com.au, or Anna Cameron, SA Merino Sire Evaluation Site Coordinator on 0403 747 332 or acameron@yalumba.com

SA MERINO SIRE EVALUATION SITE COMMITTEE

Chairman	Roger Fiebig
Site Owner (2017/2018 drops)	Keynes Family
Site Owner (2019 drop)	Duane Simon, McPiggery
Data Manager	Michelle Cousins
Industry Service Provider	Bill Walker

Breeder Representative	Hansi Graetz
Breeder Representative	Matt Ridgway
Finance & Administration	Jennifer Light
Site Coordinator	Anna Cameron
AMSEA Site Representative	Stephen Lee

SPONSORS, CONTRIBUTORS AND VOLUNTEERS

As a non-profit site, our sponsors provide a very important contribution, and we would like to acknowledge their generous support of the SA Merino Sire Evaluation Site in 2017, 2018 & 2019. We would also like to thank those individuals, and/or businesses whom have volunteered their time in helping the sites run as smoothly as possible throughout the year, whether that be in the form of providing labour, or helping with specific tasks as required by the AMSEA protocols. Two business's that must be acknowledged are Keyneton Station and McPiggery, who importantly offered to be host sites for the SA Merino Sire Evaluation Trial, as well as volunteering their own time in planning and labour.



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