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SA MERINO SIRE EVALUATION TRIAL FIELD DAY

FRIDAY 22ND JUNE 2018, KEYNETON STATION

2017 DROP PROGENY

Schedule

11:00am Field Day begins

11:30am–12:40pm Presentations in marquee

- **11:30-11:40 Roger Fiebig, SA Merino Sire Evaluation Trial Chairman**
The trial process, from AI to now.
- **11:40-11:50 Joe Keynes, SA MSE Site Host**
Site summary: the season; stock management
- **11:50-12:10 Ben Swain, AMSEA Executive Officer**
What is Sire Evaluation? How is raw data analysed? How are the results interpreted?
- **12:10-12:25 Geoff Lindon, AWI Program Manager Genetics and Animal Welfare Advocacy**
Moving to a non-mulesed Merino enterprise. Results of interviews with wool growers.
- **12:25-12:40 Simon Walker, SARDI Affiliate**
Update on the current AI Research Program, funded by AWI

Trade displays

Lunch and refreshments available

Inspection of 2017 drop progeny in sire groups together with results from measured and visual assessments.

3:00pm Close

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 the 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 mated at 18 months.

Host Property and Ewe Base

Keyneton Station, Keyneton are the inaugural host of the 2017 cohort for the SA site. Keyneton Station is located in the eastern Mount Lofty Ranges and receives an average 500mm in a winter dominant pattern. The Keyneton Station ewes are 65-70kg and produce 19-20 micron wool. The ewes mated for the 2017 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 15 rams and 1 link sire in 2017. 60 ewes were joined to each sire via AI in mid-January 2017. At day 45, 610 ewes (from AI) were scanned as pregnant, representing the number of AI lambs. This gave a rate of 61% conception from the AI. There were no significant differences between the 16 different sires, nor the day of insemination. The break to the season was late at Keyneton, occurring mid-June 2017. As a result, the ewes were fed in a containment lot through mid to late pregnancy in Autumn. 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 mid-June, the conditions were cold resulting in slow pasture growth.

The first cohort of lambs born from 16 rams occurred in June 2017. Lamb marking took place on 25th & 26th July 2017 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 553 progeny generated across the 16 rams. The average breech cover was visually assessed as 3.6/5 or 72%, and the average breech wrinkle was visually assessed as 1.2/5, or 24%. This indicates the lambs were reasonably plain.

At 10 weeks of age the lambs were weaned. Weaning weights were assessed, with single lambs weighing an average of 24.5kg and twin lambs weighing an average of 24.2kg 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. Seasonal conditions continued to be tough with a short spring and very little summer rainfall. As a result, lambs were fed beans through self feeders from January through to May.

On May 28th 2018, major phenotyping was recorded on the 2017 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.
- Carcass scanning: body weight, fat, and eye muscle depth.

To complete assessments on the 2017 progeny, greasy fleece weight will be recorded at shearing in September, along with post-shearing visual traits of shoulder/back and body wrinkle. Body weight will also be recorded. Worm egg count will be obtained if conditions permit.

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 sex, birth type, rear type, age of dam, age of measurement and management group in order to improve the accuracy of the result. The information used for 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:	M = Marking - 14 to 42 days W = Weaning - 42 to 120 days	Y = Yearling - 300 to 400 days
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 previous page) 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.	
Traits: Abbreviation, trait and the (units reported)	FD: Fibre diameter (um) FDCV: Fibre diameter coefficient of variation (%) SS: Staple strength (NKtex) at the mid-side SL: Staple length (mm) at the mid-side	WT: Body weight (kg) EMD: Eye muscle depth (mm) at the 'C' site FAT: Fat depth (mm) at the 'C' site
Visual Traits* as reported:	BCOV: Breech Cover - Lambs BWR: Breech Wrinkle - Lambs	* Based on the Visual Sheep Scores and scored at marking.
Trait Leaders:	The highest performing 3 (or more if equal) sires for each trait (trait leaders) are highlighted by shading .	

2017 Drop – Adjusted Sire Means

Wool, Weight and Carcase Results

Breeders flock, Sire number	YFD (μm)	YFDCV (%)	YSL (mm)	YSS (NKtex)	WWT (kg)	YWT (kg)	YEMD (mm)	YFAT (mm)
Collinsville Poll, 135111	15.3	19.4	59.0	26.6	24.7	32.7	21.8	2.2
Flairdale Poll, 150078	15.0	19.7	58.6	37.9	24.4	30.3	21.2	2.0
Greenfields Poll, 140345	15.2	19.5	57.1	37.5	24.8	29.5	22.9	2.3
Gunallo Poll, 140007	14.9	19.4	58.7	28.7	24.6	31.2	21.3	2.2
Hamilton Run, 150600	16.1	19.5	61.3	29.5	25.1	32.6	21.9	2.3
Hazeldean, 13.4936	14.7	19.4	60.7	32.2	24.5	30.5	22.0	2.1
Hilton Heath, 14Y447	15.6	20.2	59.2	33.2	24.8	32.6	22.0	2.2
Kelvale Poll, 150120	15.6	19.4	65.0	32.4	25.2	32.4	22.5	2.2
Leahcim Poll, 152775	15.1	17.8	58.8	30.7	25.8	33.3	22.2	2.2
Malleetech Poll, 155180	15.8	18.6	64.9	38.8	26.1	31.8	21.8	2.3
Mumblebone, 130850	16.1	18.4	65.8	32.4	24.8	32.9	23.0	2.4
Pepper Well Poll, 155227	15.8	18.3	61.4	29.6	23.6	32.8	22.9	2.3
Poll Boonoke, 150026	15.5	20.0	58.7	29.0	25.9	32.4	21.3	2.2
Ridgway Advance, 150103	15.6	18.4	64.8	29.6	25.3	35.0	22.8	2.3
Ridgway Poll, 140721	15.2	18.0	61.3	31.6	25.7	32.9	21.1	2.1
Roemahkita, 150092	14.9	19.7	55.9	37.1	24.7	30.8	21.4	2.0
Average	15.4	19.1	60.7	32.3	25.0	32.1	22.0	2.2

Adjusted Sire Means have been adjusted for birth and rear type, age of dam, age of measurement and management group. See the 'Understanding the Results' table for further explanation.

2017 Drop – Visual Scores & Classer's Grade

Visual Scores

Breeders flock, Sire number	Marking 29/06/17	
	BWR	BCOV
Collinsville Poll, 135111	1.1	3.4
Flairdale Poll, 150078	1.4	3.7
Greenfields Poll, 140345	1.2	3.3
Gunallo Poll, 140007	1.0	3.7
Hamilton Run, 150600	1.1	3.6
Hazeldean, 13.4936	1.5	3.7
Hilton Heath, 14Y447	1.5	3.6
Kelvale Poll, 150120	1.0	3.8
Leahcim Poll, 152775	1.4	3.6
Malleetech Poll, 155180	1.2	3.6
Mumblebone, 130850	1.1	3.7
Pepper Well Poll, 155227	1.1	3.6
Poll Boonoke, 150026	1.2	3.6
Ridgway Advance, 150103	1.0	3.5
Ridgway Poll, 140721	1.1	3.4
Roemahkita, 150092	1.3	3.7
Average	1.2	3.6

Classer's Grade

Breeders flock, Sire number	Classer's Grade		
	Progeny No	YTOPS (%)	YCULLS (%)
Collinsville Poll, 135111	34	-7	-11
Flairdale Poll, 150078	28	-2	-4
Greenfields Poll, 140345	23	-5	18
Gunallo Poll, 140007	42	0	8
Hamilton Run, 150600	35	-10	-4
Hazeldean, 13.4936	29	-7	3
Hilton Heath, 14Y447	40	-4	10
Kelvale Poll, 150120	46	9	-3
Leahcim Poll, 152775	36	13	-10
Malleetech Poll, 155180	34	-11	8
Mumblebone, 130850	35	18	-18
Pepper Well Poll, 155227	36	-5	-7
Poll Boonoke, 150026	33	-13	17
Ridgway Advance, 150103	24	21	-6
Ridgway Poll, 140721	38	10	-11
Roemahkita, 150092	33	-7	10

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 and management group. See the 'Understanding the Results' table for further explanation.

2017 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)
Collinsville Poll, 135111	34	-0.2	0.6	-2.8	-7.7	-0.5	1.6	-0.3	-0.1
Flairdale Poll, 150078	28	-0.7	0.9	-3.2	7.0	-1.1	-3.9	-1.8	-1.6
Greenfields Poll, 140345	23	-0.4	0.3	-5.4	6.3	-0.6	-6.1	1.6	0.5
Gunallo Poll, 140007	42	-1.0	0.6	-3.2	-5.3	-0.9	-2.3	-1.5	0.0
Hamilton Run, 150600	35	1.4	0.6	1.2	-3.3	0.4	1.5	-0.1	0.9
Hazeldean, 13.4936	29	-1.4	0.5	-0.3	-0.3	-1.1	-3.8	-0.1	-0.4
Hilton Heath, 14Y447	40	0.5	1.8	-2.5	0.4	-0.2	1.7	0.0	-0.2
Kelvale Poll, 150120	46	0.4	0.4	6.8	-0.1	0.4	0.8	1.1	0.1
Leahcim Poll, 152775	36	-0.6	-1.9	-2.6	-2.0	1.4	2.7	0.5	0.1
Malleetech Poll, 155180	34	0.7	-1.0	6.1	9.8	1.7	-1.1	-0.2	0.6
Mumblebone, 130850	35	1.4	-1.2	8.3	0.6	-0.1	2.0	2.1	1.3
Pepper Well Poll, 155227	36	0.8	-1.2	1.2	-3.1	-2.0	1.6	1.8	0.8
Poll Boonoke, 150026	33	0.2	1.4	-3.5	-4.8	1.4	0.8	-1.4	-0.3
Ridgway Advance, 150103	24	0.3	-0.9	6.6	-3.4	0.8	5.9	1.4	0.6
Ridgway Poll, 140721	38	-0.4	-1.6	1.1	-0.6	1.2	1.7	-1.7	-0.7
Roemahkita, 150092	33	-1.0	0.8	-7.8	6.3	-0.6	-2.9	-1.4	-1.7

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.

2017 Drop – Birth Type

Breeders flock, Sire number	Progeny Weaned	Birth Type	
		Single	Twin
Collinsville Poll, 135111	34	20	14
Flairdale Poll, 150078	28	17	11
Greenfields Poll, 140345	23	11	12
Gunallo Poll, 140007	42	31	11
Hamilton Run, 150600	35	21	14
Hazeldean, 13.4936	29	18	11
Hilton Heath, 14Y447	40	29	11
Kelvale Poll, 150120	46	26	20
Leahcim Poll, 152775	36	28	8
Malleetech Poll, 155180	34	24	10
Mumblebone, 130850	35	20	15
Pepper Well Poll, 155227	36	21	15
Poll Boonoke, 150026	33	12	21
Ridgway Advance, 150103	24	16	8
Ridgway Poll, 140721	38	22	16
Roemahkita, 150092	33	19	14
Total	546	335 61%	211 39%

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

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Site Owner	Keynes Family	Finance & Administration	Jennifer Light
Data Manager	Georgie Keynes	Site Coordinator	Anna Cameron
Classer	Bill Walker	AMSEA Site Representative	Stephen Lee

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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. We would also like to thank those individuals, and/or businesses whom have volunteered their time in helping the site 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. One of those business's that must be acknowledged is Keyneton Station, who importantly offered to be the host site for the first Merino Sire Evaluation Site in SA, as well as volunteering their own time in planning and labour.



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