Bluechip Livestock Young Sire Program

Central Test Sire Evaluation
Within Flock Analysis

2011 Drop 1st Evaluation

Conducted by

under the auspices of

The Australian Merino Sire Evaluation Association

May 2012

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing (May 2012). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with an appropriate adviser.

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Bluechip Livestock Young Sire Program - Central Test Sire Evaluation

The Bluechip Livestock Young Sire Program is a new initiative in sire evaluation where in addition to the AMSEA requirements; we have full pedigree and Australian Sheep Breeding Values on all the progeny. We have kept the male progeny entire and therefore they were able to participate in the Sheep CRC Genomic II Pilot Project.

Stud ewes were purchased from the highly regarded Billandri Poll Merino Stud in Western Australia, these 5 and 6 year old ewes have Australian Sheep Breeding Values (ASBVs) and have been inspected and classed. Several of these ewes are MERINOSELECT trait leaders.

The Bluechip Livestock Young Sire Program is an accredited Central Test Sire Evaluation (CTSE) site. It conforms to the requirements of the Australian Merino Sire Evaluation Association (AMSEA).

As a service to clients and a way of complementing the Peter Westblade Memorial Merino Challenge, Bluechip Livestock co-coordinates the Young Sire Program at the Temora Agricultural Research and Advisory Station (TARAS) that commenced in January 2011.

Bluechip Livestock is jointly owned by Marty Moses (Moses and Son Woolbroker), Craig Wilson (Craig Wilson & Associates) and Bluechip Livestock aims to provide and market quality independent information to the wider Australian sheep industry.

Sally Martin has played an integral role in the coordination of the BLYSP. Sally's dedication and attention to detail has made this unique evaluation possible. On behalf of Marty Moses and myself we thank Sally greatly.

The classing for the first assessment was conducted by Mr Malcolm Peake, Bogo Merino Stud and we fully acknowledge his professional contribution to the visual assessments.

We trust that everyone has achieved something out of this initial program and we look forward to providing leading genetic evaluation tools into the future.

Craig Wilson, Director, Bluechip Livestock
May 2012

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2011 Drop, 1st Assessment, Bluechip Livestock Young Sire Program

The information in this site evaluation report provides a comprehensive assessment of the 2011 drop 1st Assessment of the sire's progeny performance, both measured and visually assessed traits. **The information reported is based on a within flock analysis of the sire progeny being evaluated.**

The 1st Assessment was made at 10 months of age with 10 months of wool growth. A 2nd assessment will be made at approximately 18 months of age in 8 months wool.

Three graphs and a table provide a summary of the results. Eight tables provide the detailed performance information.

Contents

Bluechip Livestock Young Sire Program 2011 drop 1st Assessment, 10 months of age with 10 months wool growth.

Sire and owner details

Ram code	Breeders flock, Ram number Ram ID #, Breed †	Contact name, address Phone, Fax
1	Bundilla, 090121 504081-2009-090121 Merino	Rick, Jill & Ross Baldwin, Bundilla, Tubbul Rd, Young NSW 2594 P 02 6383 3802 F 02 6383 3805 E bundillamerinos@bigpond.com
2**	Pooginook, Silver 500788-2008-081290 Merino	John Sutherland, Pooginook Stud Manager, Paraway Pastoral Company, Pooginook, Jerilderie NSW 2716 P 02 6954 6145 F 02 6954 6168 E j.sutherland@parawaypastoral.com
3**	Roseville Park, 090014 504166-2009-090014 Merino	Matthew & Cherie Coddington, Glenwood, 39R Dilladerry Road MS3 Dubbo NSW 2830 P 02 6887 7286 F 02 6887 7103 E rpmerinos@bigpond.com
4	*Identity with-held at breeders request.*	
5	Hazeldean, 9.794 500383-2009-000794 Merino	Jim Litchfield, Hazeldean Pty Ltd Cooma NSW 2630 P 02 6453 555 F 02 6453 5526 E admin@hazeldean.com.au
6*	Coromandel Poll, ET2 600553-2007-070002 Poll Merino	Michael Campbell, Coromandel, Gairdner WA 6337 P 08-9836 6044 F 08-9836 3099 E coromandel6@gmail.com
7	Pastora Poll, B2893 601090-2008-082893 Poll Merino	Tim Westblade, Pastora, Lockhart NSW 2656 P 02-6920 5122 E trwesty@bigpond.com
8	*Identity with-held at breeders request.*	
9	Woodpark Poll, 090700 601151-2009-090700 Poll Merino	Stephen and Carol Huggins, Eurolie, HAY NSW 2711 P 02-6993 4616 F 02-6993 4122 E eurolie@bigpond.com
10	*Identity withheld at breeders request.*	

* Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

** Common rams (in addition to Link Rams) between this CTSE site and other sites.

UR Unregistered Flock. Sires bred in an unregistered flock are identified in the table by a UR following the sire's code.

Sire ID provides a unique number for all sheep. A sire ID has 16 digits.
- 2 for the breed of the flock, e.g., Merino (50), Poll Merino (60), Dohne (51), SAMM (48), Afrino (AF)
- 4 for flock code, AASMB Registered flock code or unregistered code.
- 4 for year of drop.
- 6 for tag number used in the breeder's records.

Example 16 digit code: 50-4967-2009-090012
Breed Flock Year of drop On-farm ID

† Breed of flock in which the sire was born.

1. Location

- Temora Agricultural Research and Advisory Station (TARAS) is located 6km north of Temora. The property is approximately 600 hectares and has an average rainfall of 524mm. TARAS is geographically central to the South West Slopes of NSW and is in a typically mixed farming area.
- The topography of TARAS is quite flat with the soil type varying little across the property and can be described as moderately acid clay loam duplex soil.
- TARAS operates as a research facility and as a commercial farming operation.
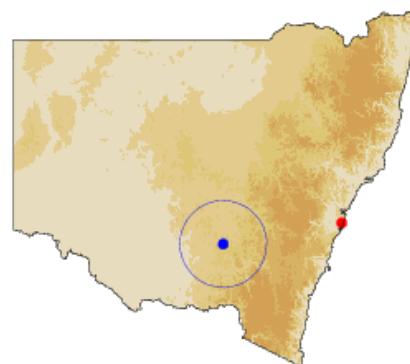
2. Selection and mating

- 400 Billandri Poll Stud ewes were mated by Artificial Insemination to 10 sires.
- The ewes were evenly allocated to each ram using the 7% Dual Purpose index. This allowed each sire group to have a range of ewes with high and low indexes. The average 7% DP index was 129.
- The insemination program was conducted on 16th and 17th January 2011.
- The insemination program was conducted by Genstock (NSW).
- 40 ewes were allocated to each sire entered.

3. Pregnancy and lambing

- Pregnancy scanning took place on 4th April 2011.
- Ewes were managed as one contemporary group until 5 days before lambing.
- Adequate pasture and a supplementary feeding program ensured that nutritional requirements were met during all stages of pregnancy.
- Sire groups lambed down in separate paddocks.
- Lambs were tagged and mothered within one week of lambing and groups brought together and boxed into one contemporary group of ewes and lambs.

4. Weaning and seasonal conditions

- The lambs were marked, scored and electronically tagged on 28th July 2011.
- The lambs were weaned onto improved pasture on 13th September 2011.
- Pasture conditions were adequate from birth to their first shearing.

5. Assessments

- 1st stage assessments were carried out Malcolm Peake, Bogo Merino Stud, Bookham NSW.

6. Rainfall - TARAS

	2010	2011	2012	median
JAN	6.2	61.8	62.2	22.7
FEB	146.8	196.2	143.2	24.5
MAR	98.1	71.6	129.6	25.7
APR	40.2	16.8		22.2
MAY	43.7	17		26.8
JUN	22	18.2		47.3
JUL	58.6	25.4		48.5
AUG	63	45.6		45.1
SEP	63.4	30.4		43.6
OCT	87.4	47.6		43.5
NOV	104.6	107.8		43.5
DEC	75.8	63.8		43.8
Totals	809.8	702.2	335	533.4

Temora Research & Advisory Station - Rainfall
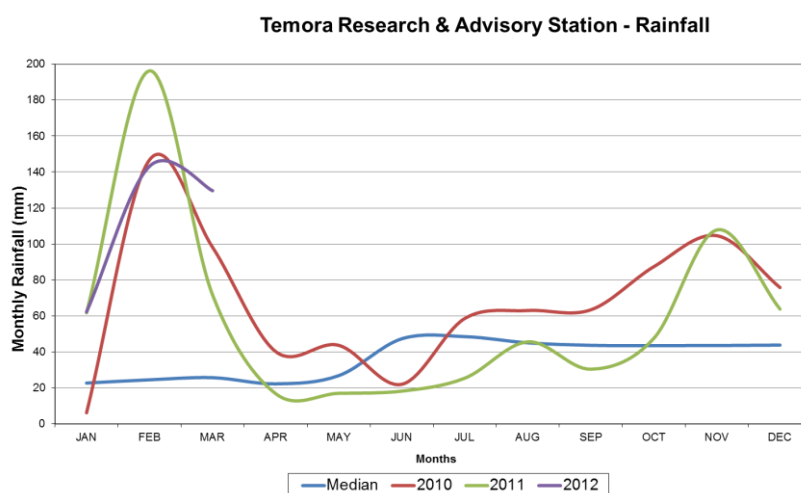
*Source: TARAS records and BOM. Average 1988-2012.

Assessment and management program

Activity	Date/s	Age (months)	Wool (months)
Selection of ewes & allocation of ewes for mating	01.12.2010		
Artificial Insemination	16.01.2011		
Pregnancy scanning	04.04.2011		
Separated into sire lambing groups	08.06.2011		
Lambing: start – finish	13 to 20.06.2011		
Lambing mobs boxed to 1 sex management group	25.06.2011	14-21 days	
Tagging/pigment scores (age in days)	25.06.2011	14-21 days	
Marked and scored for breech traits	28.07.2011	45 days	
Weaning (age in days)	13.08.2011	92 days	
Pre assessment (even-up) shearing	NA		
Crutching • 1st • 2nd	03.01.2012	7	7
Fat and eye muscle scanning and body weight	25.03.2012	10	
Fleece sampling assessment • 1st • 2nd	29.03.2012	10	10
Staple length assessment • 1st • 2nd	29.03.2012	10	10
Classer's Grade assessment • 1st • 2nd	29.03.2012	10	10
Pre shearing scoring assessment • 1st • 2nd	29.03.2012	10	10
Assessment shearing • 1st • 2nd	30.03.2012	10	10
Post shearing scoring assessment • 1st • 2nd			
Body weigh assessment • Weaning • Early Post Weaning • Post Weaning • Yearling • Adult	13.09.2011 15.11.2011 02.01.2012 25.03.2012	3 5 7 10	
Worm egg count sampling • 1st • 2nd	19.11.2011		
Sire's Progeny Group Evenness assessment			
Vaccination	Marking, weaning, post shearing		
Drench	As required based on worm egg counts		
Supplementary feeding: start – finish			
Field day or public display of sheep	**(1)** 10.10.2011; **(2)** 29.11.2011; **(3)** 30.03.2012		

Visual trait assessment

1st Stage Assessment

Classer's Grade: Malcolm Peake

Trait Scores: Sally Martin (Breech and Pigment Traits) and Malcolm Peake (all other traits).

Site Breeding Objective used to assess the Classer's Grades - 1st Stage Assessment

The Breeding Objective used to select the Classer's Tops (20%), Flock (60%) and Cull (20%) was based a visual assessment where the animal performed well for growth, structurally sound with good wool quality traits including long soft handling wool and fleece weight.   *(For the first assessment of the 2011 drop no reference was made to measured performance and was based on the visual presentation of all traits).*

Within Site Analysis

This report provides information within site on the performance of the progeny of the sires being evaluated. Adjustments have been made for singles and twins. The ASBVs have not been taken into consideration in the within site analysis, however will be used in the across site (MSS) analysis.

All the rams (excluding the link and common sire(s)) were unproven prior to be entered in the Bluechip Livestock Young Sire Program. The information presented is a reflection of one sires performance, not the bloodline.

Publication of results in both Merino Superior Sires (MSS) and MerinoSelect will be presented as across flock Australian Sheep Breeding Values (ASBV's) and will included additional data collected on farm, at other sire evaluation sites and the Information Nucleus Flock sites.

Bluechip Livestock Young Sire Program – Ram progeny - prior to 1ˢᵗ Assessment

Summary graph: visual and measured performance

Each ram that had 15 or more progeny assessed at 1st Assessment is located on Figure 1 and describes performance for combined measured traits and combined visual assessment.

The combined measured traits in Figure 1 are based on an AMSEA Merino 7% index (equal emphasis on fleece weight and fibre diameter with enough emphasis on body weight to provide a moderate increase in this trait). Visual trait performance is a combination of Classer's Grade performance (Tops and Culls). More information is found in "Calculation of combined performance" (page 22).

Rams that are above average performers for combined measured traits and Classer's Grade are located in the top right hand quarter.
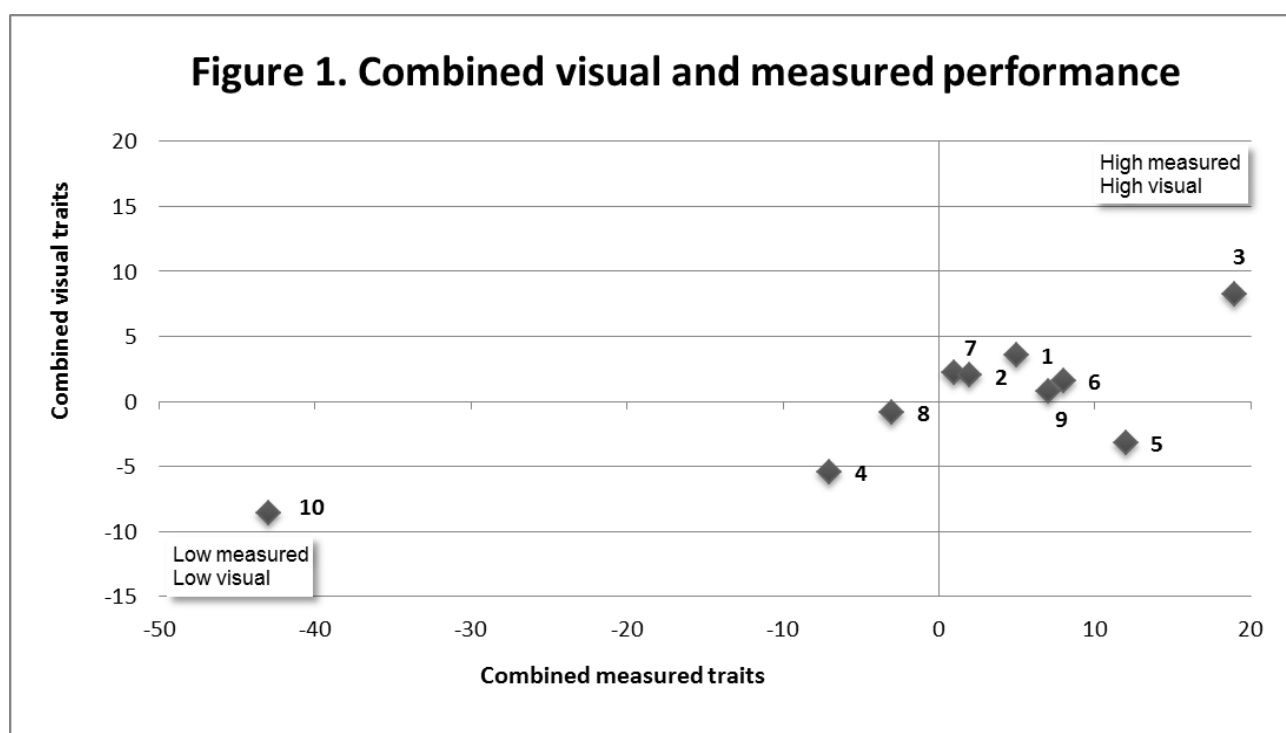
Rams reported in Figure 1 and 1a			
Ram code	Breeders flock, Ram number	Ram code	Breeders flock, Ram number
1	Bundilla, 090121 - 504081-2009-090121	6*	Coromandel Poll, ET2 - 600553-2007-070002
2**	Pooginook, Silver - 500788-2008-081290	7	Pastora Poll, B2893 - 601090-2008-082893
3**	Roseville Park, 090014 - 504166-2009-090014	8	*Identity withheld at breeders request*
4	*Identity withheld at breeders request*	9	Woodpark Poll, 090700 - 601151-2009-090700
5	Hazeldean, 9.794 - 500383-2009-000794	10	*Identity withheld at breeders request*

* Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

** Common rams (in addition to Link Rams) between this CTSE site and other sites.

Table A. AMSEA Index values and Classer's Grade

The highest performing 2 rams for each trait (i.e., trait leaders) are highlighted by shading. Each ram is listed for Classer's Grade and the same three indexes at all site evaluations. An additional index (Fine Merino 20% + SS) considered relevant to this site evaluation is also reported.

The index values reported are based on Flock Breeding Values (within flock) measured trait performance with varying emphasis on fleece weight, fibre diameter, body weight, staple strength and worm egg count. (See 'Index Options' on page 21 for more information on the indexes presented in the table below.) **AMSEA Indexes are the same as MERINOSELECT Indexes apart from NLW (Number of Lambs Weaned) which is given a zero FBV value in AMSEA calculations.**

- ■ **Merino 14% +SS**   High emphasis on fibre diameter and low emphasis on fleece weight plus moderate emphasis on live weight and staple strength.
- ■ **Fine 10% +SS**   Moderate emphasis on fleece weight and fibre diameter plus moderate emphasis on staple strength.
- ■ **Dual Purpose 7%**   Moderate emphasis on fleece weight and fibre diameter plus high emphasis on live weight.
- ■ **Fine 20% +SS**   Maintain emphasis on fleece weight and high emphasis on fibre diameter (20% Micron Premium) plus moderate emphasis on staple strength and maintain performance on other traits.

Ram code	Breeders flock, Ram number	No of Progeny	AMSEA Indexes values				Classer's Grade	
			Merino 14% +SS	Fine 10% +SS	Dual Purpose 7%	Fine Merino 20% +SS	Tops % (dev) Y^	Culls % (dev) Y
1	Bundilla, 090121	22	108	105	98	106	3	-15
2**	Pooginook, Silver	28	98	97	113	93	-1	-11
3**	Roseville Park, 090014	25	107	116	91	104	27	-14
4	Identity withheld at breeders request	27	100	97	90	103	-17	10
5	Hazeldean, 9.794	21	108	114	107	110	-6	10
6*	Coromandel Poll, ET2	33	101	104	110	98	5	-3
7	Pastora Poll, B2893	24	102	104	95	105	10	-1
8	Identity withheld at breeders request	18	94	95	75	93	-2	2
9	Woodpark Poll, 090700	17	110	109	110	111	1	-3
10	Identity withheld at breeders request	23	72	58	112	75	-19	24
Average performance		**24**	**100**	**100**	**100**	**100**	**18**	**19**

*   Link ram: Ram evaluated to provide links between site evaluations and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

** Common rams (in addition to Link Rams) between this CTSE site and other sites.

^   Y = Yearling (300 to 400 days).

[1] Classer's Grade is expressed as the percentage deviation of average Tops% and Culls%

Figure 2 Fleece weight by fibre diameter - describes performance for fleece weight on the side axis and fibre diameter on the bottom axis. Rams that are above average for fleece weight and below average fibre diameter are located in the <u>top left hand quarter.</u>
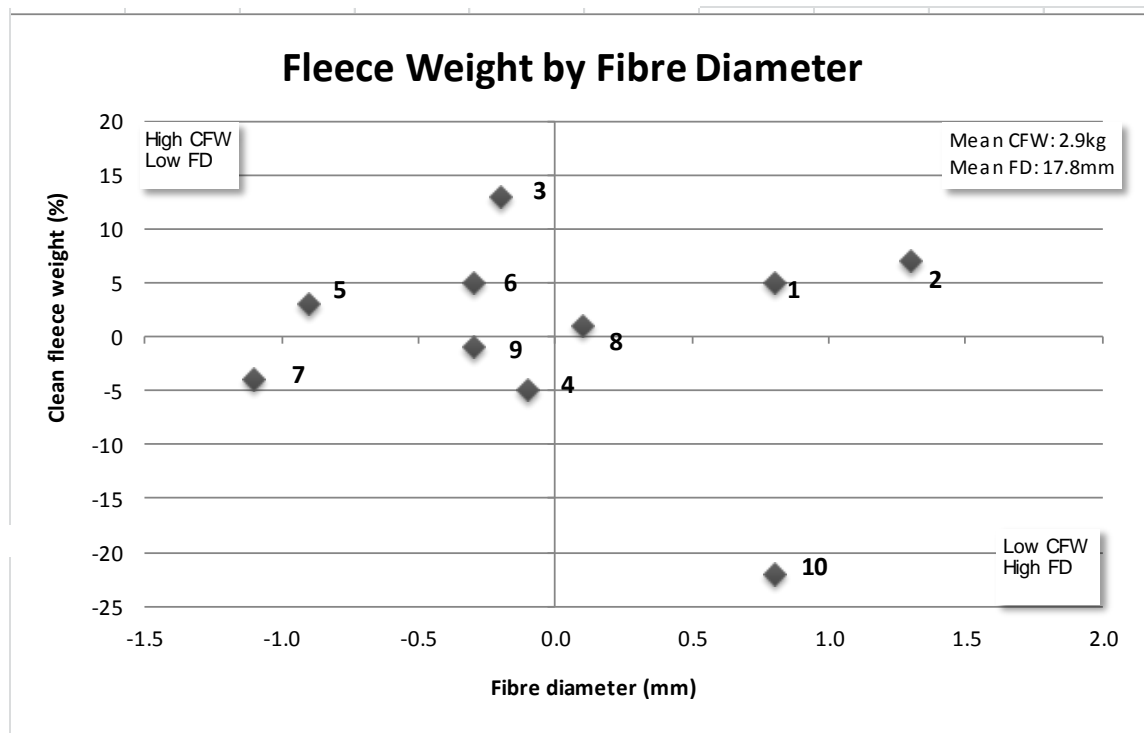
Figure 3 Classer's Tops by Cull Grade - describes performance for Classer's Tops Grade on the side axis and Cull Grade on the bottom axis. Rams that have above average Tops and below average Culls are in the <u>top left hand quarter.</u> Classer's Tops (20%), Flock (60%) and Cull (20%) is based a visual assessment where the progeny performed well for growth, structurally sound with good wool quality traits including long soft handling wool and fleece weight.
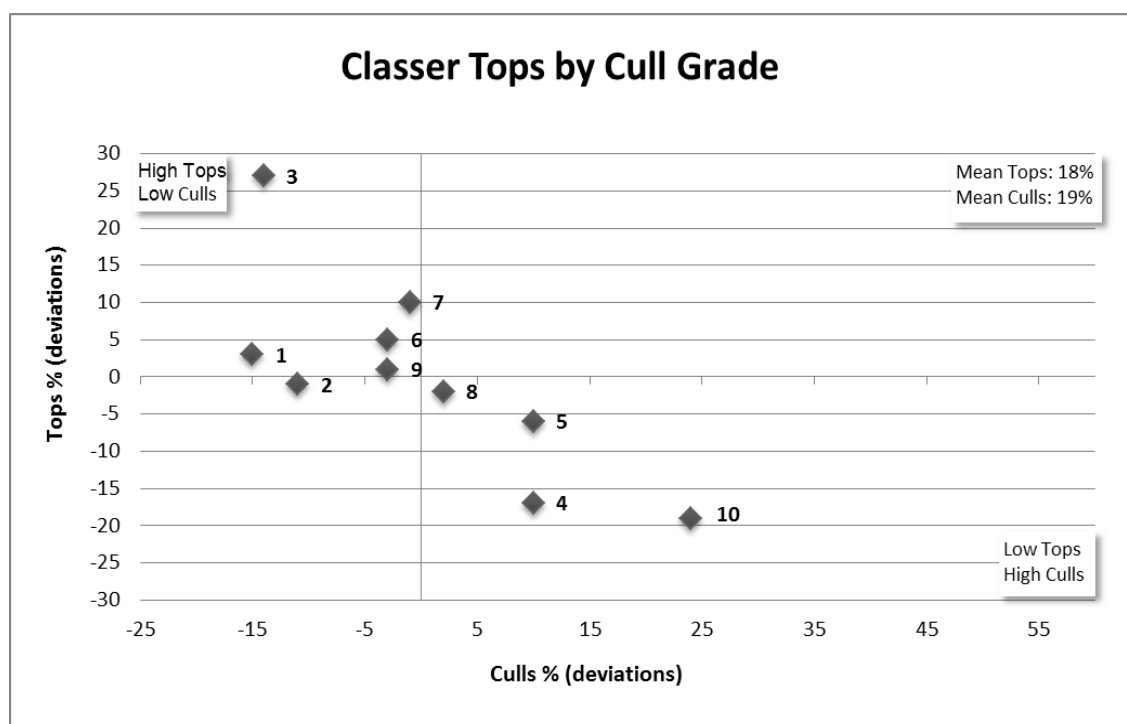
Measured trait performance and Classer's Grade – Tables 1 and 2 – pages 13 and 14.

Ram code:	Allows a ram to be located on the summary graphs and some tables.
Ram name:	Identity of the breeder's flock and the ram's number or name.
Number of progeny:	The number of progeny a ram had at the most recent measured analysis.
Flock Breeding Values:	Flock Breeding Values (FBVs) are Estimated Breeding Values (EBVs) calculated by Sheep Genetics for the ram's evaluated in this report. Only data from this site evaluation is used in the calculation of these FBVs. FBVs describe the relative breeding value (genetic performance) of the rams (in this case based on the performance of their progeny). A ram's progeny will express half of their ram's FBV. FBVs do not necessarily reflect the rams observed performance, which is a combination of both genetic and environmental influences. FBVs are an estimate of the genetic component of the sheep's performance.

Traits:

Abbreviation, trait and the (units reported)

GFW:	Greasy fleece weight (percentage).
CFW:	Clean fleece weight (percentage).
FD:	Average fibre diameter (micron).
WT:	Body weight (kilograms).
FDCV:	Fibre diameter coefficient of variation (percentage).
SL:	Staple length (mm) at the mid-side.
SS:	Staple strength (N/ktex) at the mid-side.
EMD:	Eye muscle depth (mm) at the 'C' site.
FAT:	Fat depth (mm) at the 'C' site.
CURV:	Fibre curvature (degrees)
WEC:	Worm egg count (% deviation in worm burden of ram's progeny)

Age at assessment:

Y = Yearling	- 300 to 400 days (10 to 13 months of age).
H = Hogget	- 400 to 540 days (13 to 18 months of age).
A = Adult	- 540 days or older (18 months and older).

Classer's Grade: A classer grades all progeny as Tops, Flocks or Culls based on visual assessment of all traits relative to the site's Breeding Objective (page 6). The percentage deviation from the average of Tops and Culls is presented in this report.

Table 1. **Major measured traits and Classer's Grades**

Ram code	Breeders flock, Ram number	No. of prog.	Flock Breeding Values (deviations)				Classer's Grade[1]	
			GFW % Y^	CFW % Y	FD µm Y	WT kg Y	Tops % (dev) Y	Culls % (dev) Y
1	Bundilla, 090121	22	5.0	5.0	0.8	1.2	3	-15
2**	Pooginook, Silver	28	5.0	7.0	1.3	2.8	-1	-11
3**	Roseville Park, 090014	25	11.0	13.0	-0.2	0.1	27	-14
4	Identity withheld at breeders request	27	-6.0	-5.0	-0.1	-3.4	-17	10
5	Hazeldean, 9.794	21	4.0	3.0	-0.9	-1.5	-6	10
6*	Coromandel Poll, ET2	33	3.0	5.0	-0.3	1.8	5	-3
7	Pastora Poll, B2893	24	-2.0	-4.0	-1.1	-2.3	10	-1
8	Identity withheld at breeders request	18	1.0	1.0	0.1	-0.5	-2	2
9	Woodpark Poll, 090700	17	1.0	-1.0	-0.3	1.2	1	-3
10	Identity withheld at breeders request	23	-22.0	-22.0	0.8	0.7	-19	24
	Average performance	**24**	**4.1** kg	**2.9** kg	**17.8** µm	**50.2** kg	**18** %	**19** %

* Link ram: Ram evaluated to provide links between site evaluations and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

** Common rams (in addition to Link Rams) between this CTSE site and other sites.

^ Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older).

[1] Classer's Grade is expressed as the percentage deviation of average Tops% and Culls%

■ Information on how to use the results in the table above can be found on page 12.

Table 2. **Other measured traits**

Ram code	Breeders flock, Ram number	No. of prog.	Flock Breeding Values (deviations)						
			FDCV % Y^	SL mm Y	SS N/ktex Y	Curv deg/mm Y	Fat mm Y	EMD mm Y	WEC % P
1	Bundilla, 090121	22	-0.9	5.5	6.3	-0.3	-0.4	-0.6	-29
2**	Pooginook, Silver	28	-0.4	5.7	3.4	-8.8	0.4	0.7	-40
3**	Roseville Park, 090014	25	1.0	1.1	-3.0	-0.5	-0.9	-2.3	4
4	Identity withheld at breeders request	27	0.3	-4.7	3.2	1.9	0.5	0.0	68
5	Hazeldean, 9.794	21	0.3	4.9	-4.2	-3.0	1.0	-0.1	-15
6*	Coromandel Poll, ET2	33	0.7	-5.0	-2.3	2.8	-1.0	0.1	109
7	Pastora Poll, B2893	24	0.8	-0.4	-3.6	0.7	-0.8	-0.2	6
8	Identity withheld at breeders request	18	0.4	-5.0	-2.0	0.8	-0.8	-2.1	69
9	Woodpark Poll, 090700	17	-1.0	1.3	1.1	0.6	0.1	0.2	-19
10	Identity withheld at breeders request	23	-1.2	-3.1	1.1	5.6	1.9	4.2	-66
	Average performance	**24**	**16.4**	**82.0**	**38.5**	**92.5**	**2.7**	**26.3**	

*   Link ram: Ram evaluated to provide links between site evaluations and sites so that the all evaluations can be combined into one report, e.g., *Merino Superior Sires.*

**   Common rams (in addition to Link Rams) between this CTSE site and other sites.

^   Y = Yearling (300 to 400 days);

■   Information on how to use the results in the table above can be found on page 12.

Scored trait performance – Tables 3a to 3d – pages 16 to 19 The following description of trait scores is a summary of the detailed word and diagrammatical description of these scores in the Visual Sheep Scores booklet (free on application to AWI telephone 02 92995155). A deviation from the average trait score for all progeny is reported as well as the percentage of the ram's progeny recorded for each trait.

■	Fleece rot:	The severity of fleece rot from **1** (no fleece rot), **2 and 3** (bands of bacterial staining but no crusting), and **4 and 5** (bands of crusty fleece rot).
■	Wool colour:	Greasy wool colour scored from **1** (whitest) to **5** (yellow).
■	Wool character:	Definition and variation of crimp between and along the staple scored from **1** (well defined and regular) to **5** (undefined and large variation).
■	Dust penetration:	Degree of dust penetration from **1** (only tip <5%) to **5** (80 to 100% of staple).
■	Staple weathering:	The deterioration due to light and water from **1** (least, <5% of staple) to **5** (most, 30 to 50%) reflect the depth and degree of deterioration.
■	Staple structure:	The size and diameter of each staple from **1** (<5mm) to **5** (30 to 50 mm)
■	Face cover:	Wool cover on the face scored from **1** (open face) to **5** (fully covered face).
■	Feet/Legs:	Conformation of feet and legs scored from **1** (very good) to **5** (very poor).
■	Body wrinkle:	The degree of body wrinkle from **1** (no wrinkle) to **5** (extensive wrinkle).
■	Jaw:	Under- or over-shot lower jaw (and teeth) relative to the top jaw. Three scores: **1** (very well aligned), **3** (marginally under or over) and **5** (heavily under or over).
■	Back/Shoulder:	Conformation of the back and shoulder from **1** (very good) to **5** (very poor).
■	Fibre pigmentation:	The percentage of dark fibres on any part of the sheep from **1** (0 pigmented fibres at any site) to **5** (76 to 100% pigmented fibres at one or more sites). This trait does not include random spot or recessive black.
■	Non-fibre pigmentation:	The percentage of pigmentation on the areas not shorn from **1** (0 pigmentation at any site) to **5** (76 to 100% pigmented area on one or more bare skin sites, **and/or** 76 to 100% of the total hoof area).
■	Recessive black: (black)	Recessive black (black) is identified by relatively symmetrical markings on both sides of the face. There are two scores **1** (no recessive markings) and **5** (recessive markings). This trait does not include random spot or fibre pigmentation.
■	Random spot: (spot)	Random spot (spot) is identified by rounded wool or hair spot/s, not symmetrical. There are two scores **1** (no spot/s) and **5** (spot/s). If both sides of the face or body are spotted the sheep should be scored as a recessive black.
■	Breech cover	Size of natural bare area around the breech from **1** (large) to **5** (no bare).
■	Crutch cover	Size of natural bare area in the pubic and groin from **1** (large) to **5** (no bare).
■	Breech wrinkle	Degree of wrinkle at the tail set and kind legs from **1** (nil) to **5** (extensive).
■	Dag	Degree of dag adhering to the breech and legs from **1** (nil) to **5** (extensive).
■	Injury/Disease:	Non-genetic effects due to injury, misadventure or infection – Yes or No.

Table 3a. **Visual trait assessments – Wool quality**

Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported.
For the majority of breeder's objectives a negative deviation would be considered favourable and the larger the deviation the better.

Ram code	Wool Quality																								
	Fleece Rot						Wool Colour						Wool Character						Dust Penetration					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5
1	-0.5	71	5	0	10	14	-0.1	48	33	19	0	0	0.3	24	48	19	9	0	-0.2	0	0	43	52	5
2**	0.2	52	0	0	30	18	0.0	33	48	19	0	0	0.0	33	56	11	0	0	-0.1	0	4	33	44	19
3**	0.1	54	0	4	21	21	-0.4	67	25	8	0	0	-0.2	54	29	17	0	0	-0.1	0	0	33	58	9
4	-0.3	65	0	0	23	12	0.0	42	42	12	4	0	0.1	15	77	4	4	0	-0.2	0	0	46	42	12
5	0.6	45	0	0	20	35	0.2	25	45	30	0	0	-0.2	40	55	5	0	0	-0.2	0	5	35	55	5
6*	0.1	55	0	6	16	23	-0.2	48	45	7	0	0	-0.2	45	52	3	0	0	-0.1	0	0	39	45	16
7	0.2	55	0	0	22	23	0.1	36	36	28	0	0	-0.3	50	45	5	0	0	0.4	0	0	5	68	27
8	-0.5	73	0	0	14	13	0.3	20	53	27	0	0	0.1	27	60	6	7	0	0.4	0	0	20	40	40
9	-0.5	71	0	0	29	0	0.1	29	47	24	0	0	0.0	35	47	18	0	0	-0.1	0	0	47	29	24
10	0.6	43	0	5	13	39	0.0	35	52	13	0	0	0.4	13	65	9	13	0	0.1	0	0	26	57	17
Avg.	**2.4**	**58**	**0**	**2**	**20**	**20**	**1.8**	**38**	**43**	**19**	**0**	**0**	**1.8**	**34**	**53**	**10**	**3**	**0**	**3.8**	**0**	**1**	**33**	**49**	**17**

*   Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

**   Common rams (in addition to Link Rams) between this CTSE site and other sites.

■   Information on how to use the results in the table above can be found on page 15.

Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported. For the majority of breeder's objectives a negative deviation would be considered favourable and the larger the deviation the better.

Four pigmentation traits are reported as described on page 15. These are Fibre pigmentation, Non-fibre pigmentation, Recessive "black" and Random "spot". Fibre pigmentation and Non-fibre pigmentation are scored **1** to **5** however recessive black and random spot are scored **1** (no pigmentation of this type) or **5** (when the trait is expressed). Only the percentage scored 5 are reported for recessive black and random spot.

| Ram code | Wool Quality | | | | | | | | | | | | Pigmentation | | | | | | | | | | | | Black | Spot |
| | Staple Weathering | | | | | | Staple Structure | | | | | | Fibre pigmentation | | | | | | Non-fibre pigmentation | | | | | | | |
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	5	5
1	0.1	0	86	14	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	0.4	5	9	86	0	0	0	0
2**	0.1	0	93	3	0	4	0.0	0	100	0	0	0	0.0	100	0	0	0	0	0	15	21	64	0	0	0	0
3**	0.0	0	96	4	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	0.4	4	12	80	4	0	0	0
4	-0.1	0	100	0	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	0.2	11	26	52	11	0	0	0
5	0.0	0	95	5	0	0	0.0	0	100	0	0	0	0.1	95	0	5	0	0	0.4	5	14	71	5	5	0	0
6*	-0.1	0	100	0	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	-0.2	24	30	42	4	0	0	6*
7	0.0	0	91	9	0	0	0.0	5	95	0	0	0	0.0	100	0	0	0	0	0.5	0	21	67	12	0	0	0
8	0.0	0	93	7	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	-0.6	39	39	22	0	0	0	0
9	0.1	0	82	18	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	-0.8	47	41	12	0	0	0	0
10	0.0	0	87	13	0	0	0.0	0	100	0	0	0	0.0	100	0	0	0	0	-0.2	22	30	48	0	0	0	0
Avg.	2.1	0	92	8	0	0	2.0	0	100	0	0	0	1.0	100	0	0	0	0	2.5	17	24	54	5	0	0	0

*   Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

**   Common rams (in addition to Link Rams) between this CTSE site and other sites.

■   Information on how to use the results in the table above can be found on page 15.

Table 3c. Visual trait assessments – Conformation

Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported. For the majority of breeder's objectives a negative deviation would be considered favorable and the larger the deviation the better. Face cover and body wrinkle are possible exceptions when for many breeders the optimum score is in the middle of the range.

Ram code	Conformation																								
	Jaw						Legs and Feet						Shoulder and Back						Face Cover						
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	
1	0	100	0	0	0	0	-0.1	90	10	0	0	0	-0.1	100	0	0	0	0	-0.1	0	19	81	0	0	
2**	0	100	0	0	0	0	0	85	15	0	0	0	-0.1	100	0	0	0	0	0	0	11	89	0	0	
3**	0	100	0	0	0	0	-0.1	92	8	0	0	0	0	96	4	0	0	0	0	0	4	96	0	0	
4	0	100	0	0	0	0	0.3	73	15	8	4	0	-0.1	100	0	0	0	0	0	0	8	92	0	0	
5	0	100	0	0	0	0	0.1	80	15	5	0	0	0.1	85	15	0	0	0	0.1	0	0	100	0	0	
6*	0	100	0	0	0	0	0	87	10	3	0	0	0	94	3	3	0	0	0	0	3	97	0	0	
7	0	100	0	0	0	0	0.2	82	9	4	5	0	0	95	5	0	0	0	0	0	9	91	0	0	
8	0	100	0	0	0	0	-0.1	93	7	0	0	0	-0.1	100	0	0	0	0	0.1	0	0	93	7	0	
9	0	100	0	0	0	0	-0.1	94	6	0	0	0	0	94	0	6	0	0	0	0	6	94	0	0	
10	0	100	0	0	0	0	-0.1	96	4	0	0	0	0.3	74	17	9	0	0	-0.1	4	9	87	0	0	
Avg.	**1.0**	**100**	**0**	**0**	**0**	**0**	**1.2**	**87**	**10**	**2**	**1**	**0**	**1.1**	**94**	**4**	**2**	**0**	**0**	**2.9**	**0**	**7**	**92**	**1**	**0**	

*   Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

**   Common rams (in addition to Link Rams) between this CTSE site and other sites

■   Information on how to use the results in the table above can be found on page 15.

Table 3d. Visual trait assessments – Breech

Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported.
For the majority of breeder's objectives a negative deviation would be considered favorable and the larger the deviation the better.

Ram code	Breech Cover						Breech Wrinkle					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5
1	-0.2	0	0	0	36	64	-0	23	36	27	14	0
2**	0.1	0	0	0	14	86	-1	39	32	21	4	4
3**	0.2	0	0	0	4	96	-0	20	36	28	16	0
4	0.1	0	0	0	11	89	0.7	3	15	41	37	4
5	-0.3	4	0	10	10	76	0.5	8	29	24	29	10
6*	0.1	0	0	0	9	91	0.2	18	21	39	18	4
7	0.0	0	0	0	21	79	0	25	21	29	25	0
8	0.0	0	0	0	22	78	0.1	12	33	44	11	0
9	0.0	0	0	0	18	82	-0	29	18	41	12	0
10	0.1	0	0	0	13	87	-1	48	30	9	13	0
Avg.	4.8	0	0	1	16	83	2.5	23	27	30	18	2

*   Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

**   Common rams (in addition to Link Rams) between this CTSE site and other sites

■   Information on how to use the results in the table above can be found on page 15.

Table 4. **Ram averages for measured traits**

Ram averages are the average performance of all the progeny of a ram. No account is made for factors that can improve the ram average value accuracy.

Ram code	Breeders flock, Ram number	No. of prog.	GFW % Y^	CFW % Y	FD µm Y	WT kg Y	Fat mm Y	EMD mm Y	FDCV % Y	Curv deg/mm Y	SL mm Y	SS N/ktex Y
			Ram averages for measured traits (deviations)									
1	Bundilla, 090121	22	0.2	0.1	0.6	0.5	-0.2	-0.6	-0.5	1.2	5.1	6.7
2**	Pooginook, Silver	28	0.1	0.1	0.9	2.6	0.1	0.4	-0.2	-7.7	3.8	3.9
3**	Roseville Park, 090014	25	0.4	0.3	-0.2	0.9	-0.2	-2.0	0.7	0.6	1.0	-2.6
4	Identity withheld at breeders request	27	-0.3	-0.1	-0.1	-3.0	0.2	0.1	0.4	1.5	-3.3	4.0
5	Hazeldean, 9.794	21	0.2	0.1	-0.8	-0.9	0.5	-0.1	0.2	-2.2	5.1	-4.4
6*	Coromandel Poll, ET2	33	0.1	0.2	-0.1	1.0	-0.4	0.4	0.3	2.5	-4.6	-2.2
7	Pastora Poll, B2893	24	0.0	-0.2	-0.9	-2.2	-0.3	0.1	0.4	0.9	-0.2	-2.7
8	Identity withheld at breeders request	18	0.0	0.0	0.2	-0.3	-0.2	-2.2	0.3	-0.1	-5.0	-2.9
9	Woodpark Poll, 090700	17	0.2	0.0	-0.3	1.3	0.0	0.3	-1.0	0.2	0.7	0.4
10	Identity withheld at breeders request	23	-0.8	-0.4	0.7	0.1	0.4	3.7	-0.7	3.1	-2.7	-0.2
	Average performance	**24**	**4.1 kg**	**2.9 kg**	**17.8 µm**	**50.2 kg**	**2.7 mm**	**26.3 mm**	**16.4 %**	**92.5 deg/mm**	**82.0 mm**	**38.5 N/ktex**

* Link ram: Ram evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

** Common rams (in addition to Link Rams) between this CTSE site and other sites

^ Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older).

Index Options – indexes reported on page 10

Breeding Objective index options provide the relative value of rams based on a combination of the <u>measured traits' genetic performance</u>. The indexes used in this report are only some of the many indexes that can be used to describe an individual breeder's objective for measured traits.

If a breeder is considering using a ram in this report it is critical to consider the performance of the breeder's flock relative to the performance standard in this report. The relative performance must be considered to establish the result that can be expected when a ram is used in a breeder's flock.

All AMSEA site evaluation reports present 3 standard indexes to provide combined **measured** trait performance. These 3 AMSEA indexes are Fine 10% + SS; Merino 14% + SS; and Dual Purpose 7%. These indexes are the same as MERINOSELECT indexes of that name however as there is no direct reproduction records captured by sire evaluation AMSEA <u>do not</u> include a Reproduction (NLW) FBV in their index calculations. As a result the 14% contribution by NLW in the Dual Purpose 7% index is not effectively applied by the index calculation.

This report has added an additional index – the AMSEA **Fine 20% +SS**

Index *production system* and breeding objectives

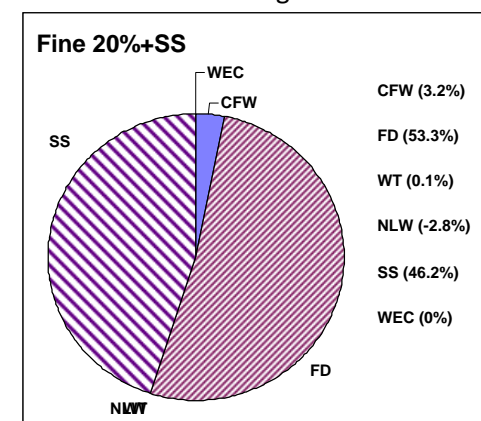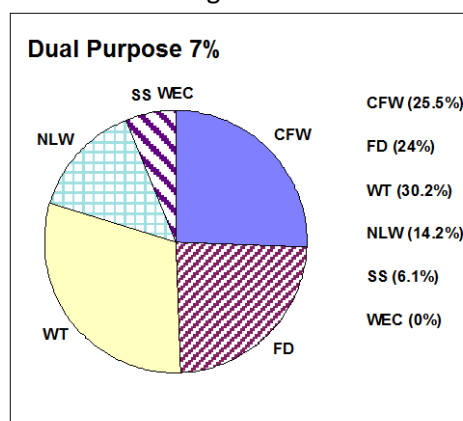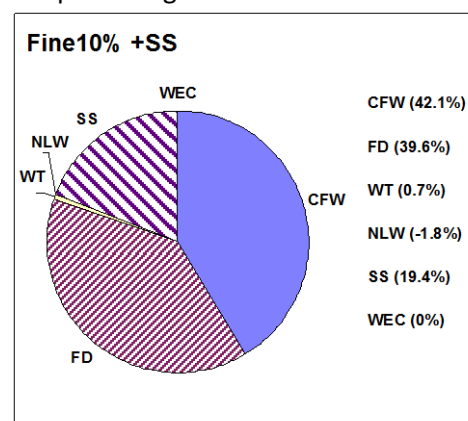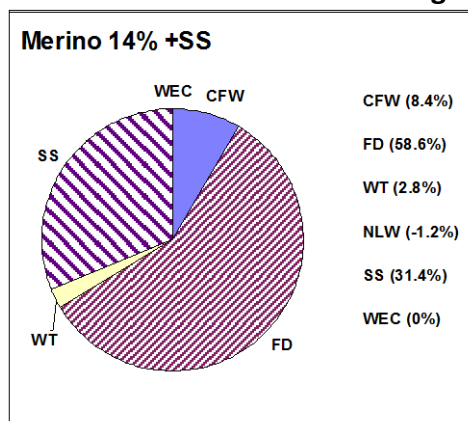|	
AMSEA **Fine 10% +SS** (F10% + SS)	*Fine wool Merino self-replacing production system* with moderate emphasis on fleece weight and fibre diameter (10% Micron Premium) plus moderate emphasis on staple strength and maintain performance on other traits.
AMSEA **Merino 14% +SS** (M14% + SS)	*Medium wool Merino self-replacing production system* with high emphasis on fibre diameter and low emphasis on fleece weight (14% Micron Premium) plus moderate emphasis on live weight and staple strength with maintain performance on other traits.
AMSEA **Dual Purpose 7%** (DP7%)	*Medium wool Merino self-replacing production system (in conjunction with 25% of ewes in terminal lamb production)* with moderate emphasis on fleece weight and fibre diameter (7% Micron Premium) plus high emphasis on live weight and maintain performance on other traits.
AMSEA **Fine 20% +SS** (F20% + SS)	*Fine wool Merino self-replacing production system* with an emphasis to maintain fleece weight and high emphasis to reduce fibre diameter (20% Micron Premium) plus high emphasis on staple strength and maintain performance on other traits.

Traits contribution to economic gain: The percentage contribution of the traits listed to economic gain in a commercial flock that selects rams using the index.

Merino 14% +SS

CFW (8.4%)
FD (58.6%)
WT (2.8%)
NLW (-1.2%)
SS (31.4%)
WEC (0%)

Fine10% +SS

CFW (42.1%)
FD (39.6%)
WT (0.7%)
NLW (-1.8%)
SS (19.4%)
WEC (0%)

Dual Purpose 7%

CFW (25.5%)
FD (24%)
WT (30.2%)
NLW (14.2%)
SS (6.1%)
WEC (0%)

Fine 20%+SS

CFW (3.2%)
FD (53.3%)
WT (0.1%)
NLW (-2.8%)
SS (46.2%)
WEC (0%)

Accuracy of Flock Breeding Values

Flock Breeding Values (FBVs) are reported by Sheep Genetics Australia (SGA). FBVs express the expected performance of progeny of a ram relative to another ram in the evaluation when mated to the same standard of ewes. FBVs improve the accuracy of ram results because they account for the association between traits, adjustment for birth effects and the number of progeny a ram has in the analysis.

True Breeding Values would be achieved if the number of progeny evaluated for each ram were infinite. Because the number of progeny in the evaluation is not infinite, performance shown in this report is described as *Flock* Breeding Values.

Without progeny test information the correlation between the *Flock* and *True* Breeding Value of rams from different sources would be zero (0.0%). The correlation between *Flock* and *True* Breeding Value improves rapidly from 0.0% with no progeny to 77% with 10 progeny. The rate of improvement in correlation slows from 86% with 20 progeny, to 90% with 30 progeny and 92% with 40 progeny. With an infinite population the correlation is 100%. Note that the correlation used in the above example is for a trait such as fibre diameter with a high heritability (0.5).

A heritability of 0.5 indicates that half or 50% of the measured performance is passed onto offspring. A heritability of 0.35 indicates 35% is passed on. The FBVs that are shown in this report have already accounted for heritability and therefore describe the performance that can be expected from a ram's progeny.

Link rams

Link rams provide the 'genetic link' between CTSE sites located across Australia to allow all rams entered in these site evaluations to have their performance reported relative to each other in *Merino Superior Sires*. *Merino Superior Sires* reports rams from across all effectively linked CTSE sites and across all evaluations at these sites. Link rams are therefore a vital component of the Central Test Sire Evaluation.

To be used as a link a ram must have at least 25 progeny assessed at 1st Assessment at one accredited site. Site reports provide valuable information not reported in *Merino Superior Sires* however *Merino Superior Sires* reports the performance of a large number of rams which can provide a wider perspective of the elite rams available across many flocks in Australia and New Zealand.

Combined measured trait and combined visual trait performance

Combined measured trait performance is calculated as (7% MP Index – 100). Combined visual trait performance is calculated as:
(Classer's Grade Tops% – Culls%)/5, expressed as a deviation from
(average Tops% – average Culls%)/5.

Example

Ram's performance: • AMSEA 7% MP Index value = 119.7
　　　　　　　　　　 • Tops% = 25.5 (average Tops% = 25.1)
　　　　　　　　　　 • Culls% = 17.6 (average Culls% = 16.4)

▪ Combined Measured　= 119.7.0 – 100 = 19.7
▪ Combined Visual　　 = ((25.5 – 17.6)/5) – ((25.1 – 16.4)/5)
　　　　　　　　　　　 = 7.9/5 – 8.7/5 = 1.58 – 1.74
　　　　　　　　　　　 = -0.16

Under the auspices of

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