NORTH EAST VICTORIA
(Dookie College)

Central Test Sire Evaluation

2007 Drop 1st Evaluation

Conducted by

North East Victoria Stud Merino Breeders Inc.

under the auspices of

The Australian Merino Sire Evaluation Association

with support from

Livestock Breeding Service

Allflex Australia

December 2008

Disclaimer
The information contained in this publication is based on knowledge and understanding at the time of writing December 2008. 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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Foreword

North East Victoria (Dookie College) - Central Test Sire Evaluation

The North East Victoria (Dookie College) site is an accredited Central Test Sire Evaluation (CTSE) site. It conforms to the requirements of the Australian Merino Sire Evaluation Association (AMSEA).

A subcommittee of the North East Merinos and other co-opted members run the North East Victoria Sire Evaluation site. They are listed in the table below.

The North East Victoria Sire Evaluation started in 1997. The 2008 drop progeny are the twelfth evaluation since 1997, all of which have been conducted at Dookie College. The Dookie College ewes are Toland blood and only ewes which have lambed previously are included in the AI program. Ewes are randomly allocated, ensuring an even number of each age group is allocated to each sire. Fifty ewes were joined per sire, with progeny numbers ranging from 20 to 48. The Dookie College adult ewe flock averages 19 micron, with an average fleece weight of 5.5kg.

Members of the North East Merino group are offered first opportunity to fill the sire positions. If they are not taken up by the North East Merino Breeders, positions are offered to those who have expressed interest or sires of interest are approached to participate.

Current members of the Site Committee

Name	Phone	Position on committee
Phil Toland	03 57981 605	Chairperson
Lyndon Kubeil	03 57611 649	Data Manager
Frank O'Connor	03 58339 200	Site Manager
Murray McKenzie	03 57666 278	
Bill McInnes	03 57273 281	
Mathew Allen	03 57251 665	

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2007 Drop 1st Evaluation ~ North East Sire Evaluation

The information in this site report provides a comprehensive assessment of the North East Victoria, 2007 drop, 1st evaluation sire's progeny performance, both measured and visually assessed. Three graphs and a table provide a summary of the results and seven tables provide the detailed performance information for the standard sire evaluation analysis. Additional measurements have been taken to give an average production value.

This report provides the results from the 2007 drop 1st Evaluation progeny at ten months of age with ten months wool growth.

The second assessment will be in May 2009 when the progeny will be twenty months of age and will have ten months wool growth.

Contents

2007 Drop 1st Evaluation ~ North East Sire Evaluation

North East Sire Evaluation 2007 drop 1st Evaluation: Age - 10 months, Wool growth - 10 months

Sire and owner details

Sire code	Sire name Sire ID#, Breed†	Contact Name, Address Phone and Fax Number
1	Avington, 345 50-4902-2005-050345, Merino	*Noel and Lyndsay Henderson, Sidonia Road, Sidonia VIC 3444* *Ph:(03) 5423 7100 Fax:(03) 5423 7101*
2	Cahirblonig, 5079 50-4214-2005-050079, Merino	*Matthew Ipsen, 912 Maryborough - St Arnaud Rd, Wareek VIC 3465* *Ph:(03) 5423 7100, Fax:(03) 5423 7101*
3	Centre Plus Poll, 107351 60-1250-2001-107351, Merino	*William Harvey, Centre Plus WA, RMB 156, Kojonup WA 6395* *Ph:(08) 9832 3017, Fax:(08) 9832 3037*
4	Eilan Donan, 66 50-1747-2005-050066, Merino	*Jock MacRae 747 Sutton Grange Road, Elphinstone VIC 3448* *Ph:03 54733256*
5 **	Kilfeera Park, 1.444 50-3425-2001-010444, Merino	*Murray & Fiona McKenzie, 131 Brock Rd, Lurg VIC 3673* *Ph:(03) 5766 6278, Fax:(03) 5766 6248*
6	Kilfeera Park, 5.690 50-3425-2005-050690, Merino	*Murray & Fiona McKenzie, 131 Brock Rd, Lurg VIC 3673* *Ph:(03) 5766 6278, Fax:(03) 5766 6248*
7	King Valley, Yellow 46 50-4984-2005-050046, Merino	*Bill McInnes, 452 McInnes Lane, Bobinawarrah VIC 3678* *Ph:(03) 5727 3281, Fax:(03) 5727 3281*
8	Pastora Poll, 107 60-1090-2005-050107, Merino	*Tim Westblade, Pastora, 22 Drummond St, Lockhart NSW 2656* *Ph:(02) 6920 5681 Fax:(02) 6920 5682*
9	Terrick West Poll, 6.87 60-0121-2006-060087, Merino	*Ross McGauchie, Terrick West, 2400 Echuca - Serpentine Rd, Prairie VIC 3572* *Ph:(03) 5436 8270, Fax:(03) 5436 8470*
10	Toland Poll, Red 1008 60-1082-2006-061008, Merino	*Phil Toland, RMB 2005, 1888 Feltrim Rd, Violet Town VIC 3669 Ph:(03) 5798 1605, Fax:(03) 5798 1404*
11	Toland Poll, Red 1029 60-1082-2006-061029, Merino	*Phil Toland, RMB 2005, 1888 Feltrim Rd, Violet Town VIC 3669 Ph:(03) 5798 1605, Fax:(03) 5798 1404*
12 **	Toland, W611 50-4485-2001-010611, Merino	*Phil Toland, RMB 2005, 1888 Feltrim Rd, Violet Town VIC 3669 Ph:(03) 5798 1605, Fax:(03) 5798 1404*

** Link Sires: Sires 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.*

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.

† Breed of flock in which the sire was born

Managers Report

1. **Location**
   - The Dookie College site is run on The University of Melbourne Dookie Campus Farm, located 30 kilometers east of Shepparton, off the Midland Highway.
   - The Dookie College farm is 2200 hectares of undulating country with sheep and cropping the two main broadacre enterprises.
   - The sheep enterprise is predominantly a self-replacing merino flock of 3000 merino ewes joined to both merino and terminal sires.
   - Pastures range from phalaris/sub clover based to annual grasses/sub clover, with some Lucerne also available.
   - Soil types vary from river sands to heavy clays, the most predominant soil type being clay/loams, suitable for cropping.

2. **Selection and joining**
   - 600 ewes inseminated on the 15th March 2007,
   - Ewes are selected to provide a uniform line with good conformation, even wool quality and productivity. Ewes are allocated randomly ensuring that an even balance of age groups are allocated to each sire,
   - 12 sires evaluated,
   - Ewes condition score 3 at the time of selection and insemination,
   - Livestock Breeding Services conducted the insemination,
   - 50 ewes were allocated to each sire

3. **Pregnancy and lambing**
   - Pregnancy scanning on the 14th May 2007
   - 583 ewes were scanned with a conception rate of 72%,
   - 216 Singles, 204 Twins with a potential 624 lambs,
   - Ewes were managed to maintain condition
   - Lambing 8th August – 15th August
   - Lambs tagged 25th August and run in one mob

4. **Weaning and seasonal conditions**
   - Lambs marked 25th August,
   - Lambs weaned 15th October,
   - Lambs weaned onto Lucerne pasture

5. **Rainfall**

	Dookie College Rainfall (mm per month) *					
Month	2004	2005	2006	2007	2008	Average
January	4.2	32.6	13.2	11.8	69.2	26.2
February	4.2	227.6	21.8	16.2	10.6	56.1
March	4.6	6.4	11.4	37.6	43.8	20.8
April	13.8	8.8	15.0	25.2	12.2	15.0
May	31.6	5.0	21.6	80.6	36.2	35.0
June	53.6	115	28.4	33.2	19.0	49.8
July	51.6	38.4	43.6	78.6	71.2	56.7
August	49.6	77.4	19.2	14.4	26.8	37.5
September	60.0	69	16.8	7.4	24.6	35.6
October	14.8	82.6	0.4	20.4	12.2	26.1
November	61.2	58.8	9.0	72.6	80.6	56.4
December	48.4	39.4	9.0	85.0	44.0	45.2
Total	398	761.4	209	483	450.4	460.4

* Dookie College Weather Station.

Managers Report

Evaluation and Management Program

Event		Date/s	Age (months)	Wool (months)
Selection of ewes		10th February		
Joining		15th March 2007		
Lambing: start – finish		8th August – 15th August		
Tagging/pigment assessment		25th August	10 days	
Weaning		15th October 2007	60 days	
Weaning body weight		15th October 2007	60 days	
Even-up shearing		N/A		
Crutching		19 February 2008	6	6
Fleece sampling	• 1st Evaluation: • 2nd Evaluation:	23rd June 2008	10	10
Staple length	• 1st Evaluation: • 2nd Evaluation:	23rd June 2008	10	10
Assessment shearing	• 1st Evaluation: • 2nd Evaluation:	30th June 2008	10	10
Classer's Group	• 1st Evaluation: • 2nd Evaluation:	23rd June 2008	10	10
Pre shearing scoring	• 1st Evaluation: • 2nd Evaluation:	23rd June 2008	10	10
Post shearing scoring	• 1st Evaluation: • 2nd Evaluation:	30th June 2008	10	10
Body weigh	• 1st Evaluation: • 2nd Evaluation:	30th June 2008	10	10
Muscle – fat scanning	• 1st Evaluation: • 2nd Evaluation:			
WEC sampling	• 1st Evaluation: • 2nd Evaluation:	25th November 2008	15	3

Visual tait assessment

1st Evaluation
Classer's Grade: Mr Luke Marple
Trait Scores: Mr Luke Marple (all other traits)

Site Breeding Objective used to assess the Classer's Grades

The Breeding Objective used by the classer/s when selecting the Classers Tops, Flock and Cull Grades is described below. The Breeding Objectives below were developed by the site committee in consultation with the classer prior to the grading.

1st Evaluation
The North East Sire Evaluation Committee asked Luke to base his selection using an equal emphasis on fibre diameter reduction and an increase in fleece weight, also taking into consideration animals that had performed well for growth, structural soundness and wool quality traits such as staple length, colour and character. This objective would allow different sheep types to perform equally without bias against animals sired by a finer type or a stronger heavier type.

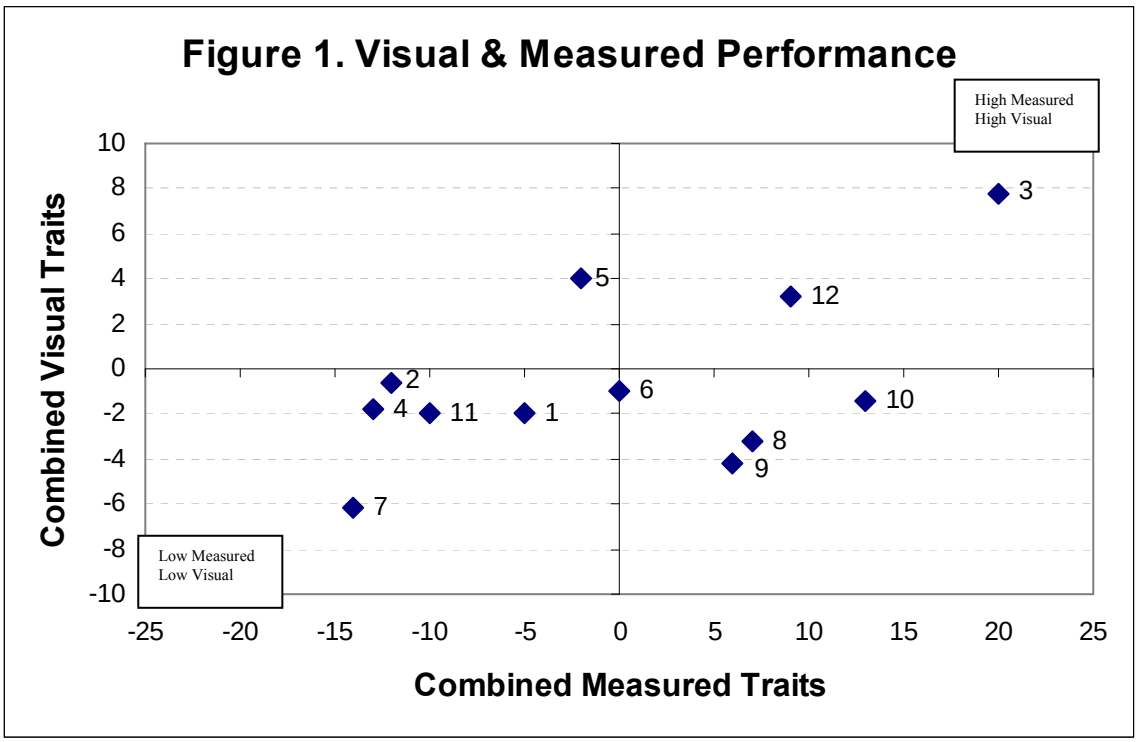
Figure 1. Combined measured traits and visual trait performance

Summary graph: visual and measured performance

Each sire that had 20 or more progeny assessed at 1st Evaluation is located on the graph. The graph describes performance for combined measured traits and combined visual assessment.

Figure 1 is combined measured traits based on a AMSEA Merino 7% index. Visual trait performance is a combination of Classer's Grade performance (Tops and Culls). More information is found in "Calculation of combined performance" (page 20).

Sires that are above average performers for combined measured traits and visual assessment are located in the top right hand quarter.



Sire Code	Sire name
1	Avington, 345
2	Cahirblonig, 5079
3	Centre Plus Poll, 107351
4	Eilan Donan, 66
5	Kilfeera Park, 1.444
6	Kilfeera Park, 5.690
7	King Valley, Yellow 46
8	Pastora Poll, 107
9	Terrick West Poll, 6.87
10	Toland Poll, Red 1008
11	Toland Poll, Red 1029
12	Toland, W611

Table A. AMSEA Index values and Classer's Grade

The highest performing sire/s for each trait in any table is grey shaded to highlight the trait leader/s. Each sire is listed for Classer's Grade and the same three indexes at all sites. The index values reported are based on measured traits FBV performance with varying the emphasis on fleece weight, fibre diameter, body weight, staple strength and worm egg count. See 'Index Options' on page 19 for more information on the indexes presented in the table below.

AMSEA Indexes are the same as MERINOSELECT Indexes apart from the NLW (Number of Lambs Weaned) effect where NLW is given a zero FBV value.

- **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 and reproduction.

Sire Code	Sire name	No. of prog.	AMSEA Index values			Classer's Grade			
						Tops % (dev)		Culls % (dev)	
			Merino 14% +SS	Fine 10% +SS	Dual Purpose 7%	Y^	A	Y	A
1	Avington, 345	46	95	97	93	-4		3	
2	Cahirblonig, 5079	34	92	86	80	-10		-10	
3	Centre Plus Poll, 107351	30	113	114	139	28		-14	
4	Eilan Donan, 66	20	88	85	89	-2		4	
5	Kilfeera Park, 1.444	37	91	93	110	13		-10	
6	Kilfeera Park, 5.690	45	91	90	109	-2		0	
7	King Valley, Yellow 46	36	91	91	81	-15		13	
8	Pastora Poll, 107	37	115	114	119	-7		6	
9	Terrick West Poll, 6.87	45	103	105	102	-10		8	
10	Toland Poll, Red 1008	26	104	114	91	5		9	
11	Toland Poll, Red 1029	38	101	98	85	-8		-1	
12	Toland, W611	35	106	113	103	12		-7	
Average performance						17 %		14 %	

* Link Sires: Sires 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.*

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

Figures 2 and 3 – Summary Graphs – FW and FD, Tops and Culls

Figure 2. Fleece weight by fibre diameter
The graph describes performance for fleece weight on the side axis and fibre diameter on the bottom axis. Sires that are above average for fleece weight and below average fibre diameter are located in the top left hand quarter.

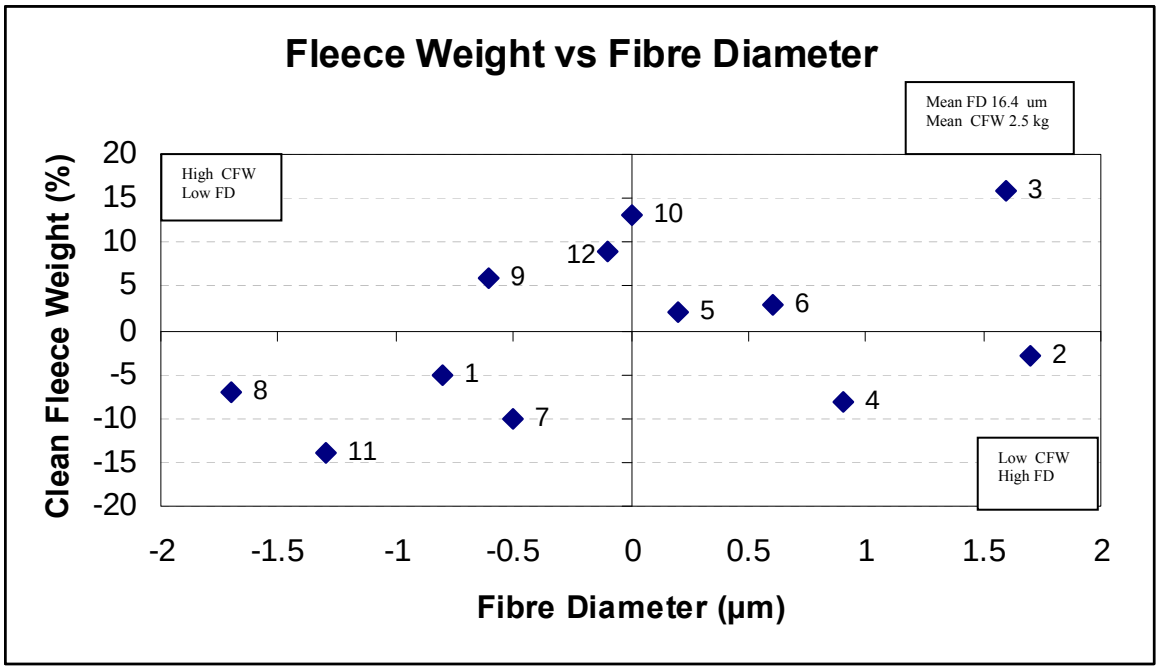
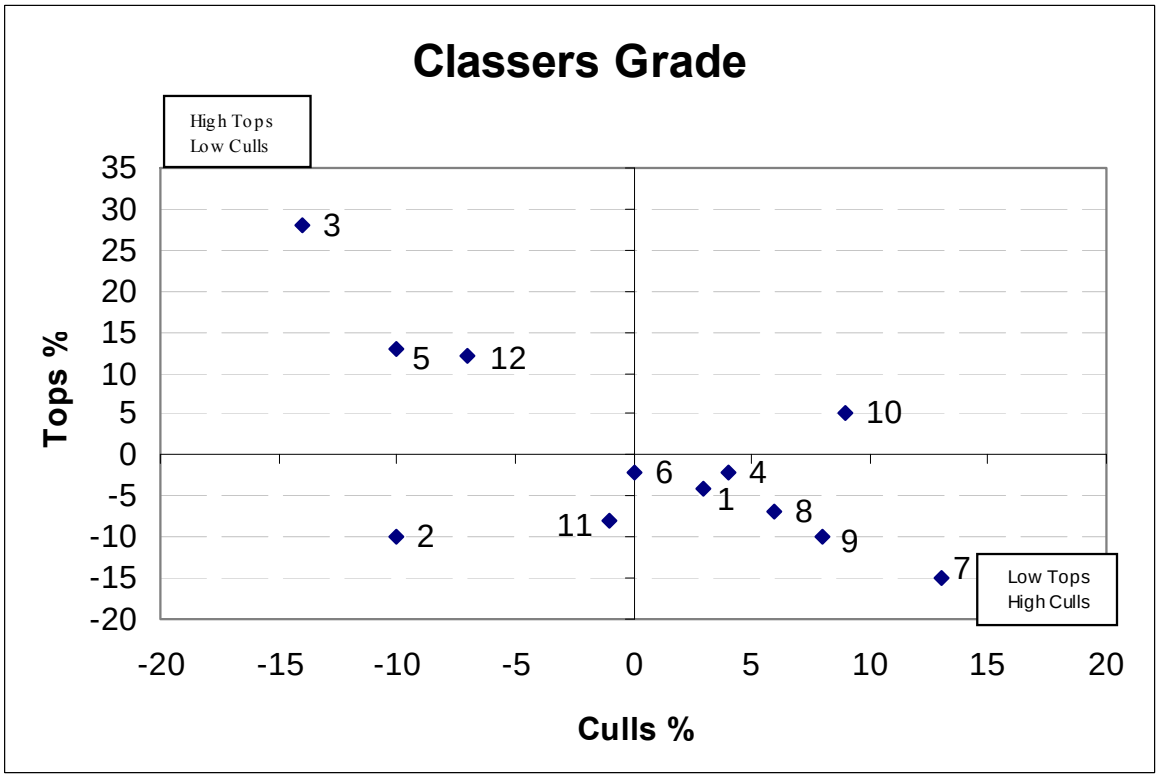


Figure 3. Classers Tops by Cull Grade
The graph describes performance for Classer's Tops Grade on the side axis and Cull Grade on the bottom axis. Sires that have above average Tops and below average Culls are in the top left hand quarter.



Understanding the results

Measured trait performance and Classer's Grade – Tables 1 and 2 – pages 10 and 11

Sire code:	Allows a sire to be located on the summary graphs and some tables.
Sire name:	Identity of the breeder's flock and the sire's number or name.
No. of progeny:	The number of progeny a sire 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 sires evaluated in this report. Only data from this evaluation is used in the calculation of these FBVs. FBVs describe the relative breeding value (genetic performance) of the sires (in this case based on the performance of their progeny). A sire's progeny will express half of their Sires FBV. FBVs do not necessarily reflect the sires 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 sire'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 either Tops, Flocks or Culls based on their visual assessment of all traits relative to the site's Breeding Objective (page 5). The percentage deviation from the average of Tops and Culls is presented in this report.

Table 1 – Major measured traits and Classer's Grades

Sire Code	Sire name	No. of prog.	Flock Breeding Values (deviations)								Classer's Grade [1]			
			GFW%		CFW%		FD µm		WT kg		Tops % (dev)		Culls % (dev)	
			Y^	A	Y	A	Y	A	Y	A	Y	A	Y	A
1	Avington, 345	46	-5		-6		-0.7		-1.1		-4		3	
2	Cahirblonig, 5079	34	-3		-2		1.3		-0.5		-10		-10	
3	Centre Plus Poll, 107351	30	15		15		1.5		6.8		28		-14	
4	Eilan Donan, 66	20	-3		-5		0.6		0.8		-2		4	
5	Kilfeera Park, 1.444	37	0		1		0.1		3.1		13		-10	
6	Kilfeera Park, 5.690	45	5		4		0.5		1.8		-2		0	
7	King Valley, Yellow 46	36	-8		-9		-0.5		-2.2		-15		13	
8	Pastora Poll, 107	37	-4		-5		-1.3		1.9		-7		6	
9	Terrick West Poll, 6.87	45	4		4		-0.5		-1.3		-10		8	
10	Toland Poll, Red 1008	26	8		10		0.2		-4.4		5		9	
11	Toland Poll, Red 1029	38	-11		-12		-1.1		-2.1		-8		-1	
12	Toland, W611	35	3		6		0.1		-2.8		12		-7	
Average performance			**3.6kg**		**2.5kg**		**16.4µm**		**28.8kg**		**17%**		**14%**	

* Link Sires: Sires 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.*

^ 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 9.

Tables 2 – Other measured traits

Sire Code	Sire name	No. of prog.	Flock Breeding Values (deviations)									
			FDCV%		SL mm		SS N/ktex		WEC %			
			Y^	A	Y	A	Y	A	Y	A		
1	Avington, 345	46	0.1		-4.7		-5.0		91			
2	Cahirblonig, 5079	34	-2.1		3.9		6.2		-9			
3	Centre Plus Poll, 107351	30	-2.9		17.1		3.5		-65			
4	Eilan Donan, 66	20	-1.6		1.8		-0.1		-33			
5	Kilfeera Park, 1.444	37	0.6		-3.1		-4.7		-13			
6	Kilfeera Park, 5.690	45	1.6		-2.6		-0.5		12			
7	King Valley, Yellow 46	36	1.0		-3.5		-2.0		-3			
8	Pastora Poll, 107	37	0.3		-8.0		-1.7		2			
9	Terrick West Poll, 6.87	45	2.4		-7.6		-0.5		-12			
10	Toland Poll, Red 1008	26	0.7		7.5		3.7		0			
11	Toland Poll, Red 1029	38	1.1		-16.5		0.5		89			
12	Toland, W611	35	-1.0		15.9		0.7		8			
	Average performance		19.8 %		81.6 mm		29.4 N/k		450 epg			

* Link Sires: Sires 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.*

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

■ Information on how to use the results in the table above can be found on page 9.

Understanding the results

Scored trait performance – Tables 3a to 3e – pages 13 to 17

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 02 92995155).

A deviation from the average trait score for all progeny is reported as well as the percentage of the sires 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 along staple) 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 of the staple 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

Wool quality traits are reported as a deviation (Dev) from the average trait score for all progeny is reported as well as the percentage of the sires progeny recorded for each trait.

Sire 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	97	3	0	0	0	-0.1	21	77	2	0	0	0	0	72	28	0	0	-0.2	0	77	23	0	0
2	0	100	0	0	0	0	-0.1	19	81	0	0	0	-0.2	0	90	10	0	0	0	0	55	45	0	0
3	0	100	0	0	0	0	0.1	11	78	11	0	0	0	0	78	22	0	0	0	0	59	41	0	0
4	0	100	0	0	0	0	0.1	17	61	22	0	0	0.2	0	56	44	0	0	0.1	0	50	50	0	0
5	0	100	0	0	0	0	0.1	15	70	15	0	0	0.1	0	67	33	0	0	0	0	61	39	0	0
6	0	100	0	0	0	0	0.2	7	77	16	0	0	-0.1	0	86	14	0	0	0.1	0	49	51	0	0
7	0	100	0	0	0	0	0	12	85	0	3	0	0	0	73	27	0	0	-0.1	0	64	36	0	0
8	0	100	0	0	0	0	0.3	3	75	22	0	0	-0.1	0	84	16	0	0	-0.1	0	69	31	0	0
9	0	100	0	0	0	0	0.1	12	81	5	2	0	0	0	76	24	0	0	-0.2	0	79	21	0	0
10	0	100	0	0	0	0	-0.1	18	77	5	0	0	0	0	77	23	0	0	0.1	0	50	50	0	0
11	0	100	0	0	0	0	-0.2	27	73	0	0	0	0.1	0	64	33	3	0	-0.1	0	67	33	0	0
12	0	100	0	0	0	0	-0.3	36	64	0	0	0	0	0	76	24	0	0	0.4	0	21	79	0	0
Av	1	100	0	0	0	0	1.9	17	75	8	0	0	2.3	0	75	25	0	0	2.4	0	58	42	0	0

* Link Sires: Sires 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.*

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

Table 3b – Visual trait assessments – Wool quality

Wool quality traits are reported as a deviation (Dev) from the average trait score for all progeny is reported as well as the percentage of the sires progeny recorded for each trait.

Sire Code	Wool Quality													
	Staple Weathering						Staple Structure							
	Dev	**1**	**2**	**3**	**4**	**5**	**Dev**	**1**	**2**	**3**	**4**	**5**		
1	0	0	44	56	0	0	0	0	77	23	0	0		
2	-0.1	0	55	45	0	0	-0.1	0	94	6	0	0		
3	0.2	0	30	67	3	0	-0.1	0	85	15	0	0		
4	0	0	44	56	0	0	0.2	0	61	39	0	0		
5	0	0	45	55	0	0	0.1	0	73	27	0	0		
6	-0.1	0	47	53	0	0	-0.1	0	93	7	0	0		
7	0	0	45	55	0	0	-0.1	0	88	12	0	0		
8	-0.1	0	50	50	0	0	0	0	84	16	0	0		
9	-0.2	0	60	40	0	0	0.1	0	74	26	0	0		
10	0.2	0	18	82	0	0	0	0	82	18	0	0		
11	-0.1	0	48	52	0	0	0	0	76	24	0	0		
12	0.3	0	12	88	0	0	0.1	0	73	27	0	0		
Av	2.6	0	42	58	0	0	2.2	0	80	20	0	0		

* Link Sires: Sires 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.*

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

Table 3c – Visual trait assessments – Pigmentation and Conformation

Pigmentation and conformation traits are reported as a deviation (Dev) from the average trait score for all progeny is reported as well as the percentage of the sires progeny recorded for each trait.

Four pigmentation traits are reported as described on page 12. These are Fibre pigmentation. Non-fibre pigmentation, Recessive black and Random spot. The first 2 are scored **1** to **5** however the latter 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 (black) and Random spot (spot).

Sire	Pigmentation														Conformation					
	Fibre pigmentation						Non-fibre pigmentation						black	spot	Jaw					
Code	**Dev**	**1**	**2**	**3**	**4**	**5**	**Dev**	**1**	**2**	**3**	**4**	**5**	**5**	**5**	**Dev**	**1**	**2**	**3**	**4**	**5**
1	0	100	0	0	0	0	2	98	0	0	0	2	0	0	0	100	0	0	0	0
2	3	97	0	0	0	3	3	97	0	0	0	3	0	0	0	100	0	0	0	0
3	0	100	0	0	0	0	10	90	0	0	0	10	0	0	0	100	0	0	0	0
4	10	90	0	0	0	10	0	100	0	0	0	0	0	0	0	100	0	0	0	0
5	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0
6	4	96	0	0	0	4	2	98	0	0	0	2	0	0	0	100	0	0	0	0
7	0	100	0	0	0	0	6	94	0	0	0	6	0	0	0.2	94	0	0	0	6
8	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0	0
9	0	100	0	0	0	0	2	98	0	0	0	2	0	0	0	100	0	0	0	0
10	4	96	0	0	0	4	4	96	0	0	0	4	0	0	0	100	0	0	0	0
11	3	97	0	0	0	3	5	95	0	0	0	5	0	0	0	97	0	3	0	0
12	0	100	0	0	0	0	6	94	0	0	0	6	0	0	0	100	0	0	0	0
Av	1.1	98	0	0	0	2	1.1	97	0	0	0	3	0	0	1	99	0	0	0	1

* Link Sires: Sires 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.*

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

Table 3d – Visual trait assessments – Conformation

Conformation traits are reported as a deviation (Dev) from the average trait score for all progeny is reported as well as the percentage of the sires progeny recorded for each trait.

Sire Code	Conformation																						
	Legs/Feet						Shoulder/Back						Face Cover						Body Wrinkle					
	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	92	8	0	0	0	0	69	31	0	0	0	-0.3	0	56	38	6	0	0.4	0	23	46	28	3
2	0	94	6	0	0	0	0	78	16	6	0	0	-0.1	0	39	58	3	0	0	9	34	41	7	9
3	0	96	4	0	0	0	-0.1	89	7	4	0	0	0.1	0	15	81	4	0	-0.1	4	39	57	0	0
4	-0.1	100	0	0	0	0	-0.1	84	16	0	0	0	0.2	0	17	72	11	0	0.1	5	32	47	16	0
5	-0.1	100	0	0	0	0	0.3	54	34	9	3	0	-0.3	0	55	45	0	0	0	3	31	63	0	3
6	0	95	3	2	0	0	-0.1	79	21	0	0	0	-0.1	5	28	67	0	0	0.1	5	35	44	14	2
7	0.1	85	12	3	0	0	0.1	66	34	0	0	0	0.2	4	24	48	24	0	-0.2	9	43	40	6	2
8	-0.1	100	0	0	0	0	-0.1	88	12	0	0	0	-0.1	4	34	56	6	0	-0.1	9	34	50	7	0
9	0	93	7	0	0	0	0	76	19	5	0	0	0.2	0	15	71	14	0	0.2	3	26	50	19	2
10	-0.1	100	0	0	0	0	0.3	54	33	13	0	0	0.2	0	18	64	18	0	0	5	33	54	8	0
11	0	97	0	3	0	0	-0.2	91	9	0	0	0	-0.2	0	42	58	0	0	0	0	42	45	13	0
12	0	91	9	0	0	0	-0.1	87	13	0	0	0	0.2	0	21	64	15	0	-0.4	6	57	37	0	0
Av	1.1	95	4	1	0	0	1.3	76	21	3	0	0	2.8	2	30	60	8	0	2.7	5	36	48	10	1

* Link Sires: Sires 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.*

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

Table 3e – Visual trait assessments – Breech

Breech traits are reported as a deviation (Dev) from the average trait score for all progeny is reported as well as the percentage of the sires progeny recorded for each trait.

Sire Code	Breech																							
	Breech cover						Crutch cover						Breech Wrinkle						Dag					
	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																								
2																								
3																								
4																								
5																								
6	Not Scored						Not Scored						Not Scored						Not Scored					
7																								
8																								
9																								
10																								
11																								
12																								
Av																								

* Link Sires: Sires 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.*

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

Table 4 – **Sire averages for measured traits**

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

Sire code	Sire name	No. of prog.	Sire averages for measured traits (deviations)											
			GFW %		CFW %		FD µm		WT kg		FDCV %		SL mm		SS N/ktex	
			Y^	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y	A
1	Avington, 345	46	-0.1		-0.1		-0.4		-0.8		0.1		-2.9		-3.5	
2	Cahirblonig, 5079	34	-0.1		-0.1		0.9		-0.8		-1.4		2.2		3.4	
3	Centre Plus Poll, 107351	30	0.5		0.3		0.9		4.1		-1.9		10.4		2.6	
4	Eilan Donan, 66	20	0.0		-0.1		0.5		0.1		-1.2		0.9		-1.3	
5	Kilfeera Park, 1.444	37	0.0		0.0		0.1		1.7		0.5		-1.8		-2.8	
6	Kilfeera Park, 5.690	45	0.1		0.0		0.3		1.3		1.0		-1.7		0.1	
7	King Valley, Yellow 46	36	-0.2		-0.2		-0.3		-1.5		0.7		-2.2		-1.6	
8	Pastora Poll, 107	37	0.0		-0.1		-0.9		1.3		0.3		-5.1		-0.9	
9	Terrick West Poll, 6.87	45	0.1		0.1		-0.3		-0.6		1.5		-4.6		0	
10	Toland Poll, Red 1008	26	0.1		0.2		0.0		-2.8		0.3		4.7		2.9	
11	Toland Poll Red, 1029	38	-0.3		-0.2		-0.7		-1.0		0.8		-10		0.3	
12	Toland, W611	35	0.0		0.2		0.0		-1.0		-0.7		10		0.9	
	Average performance		3.6 kg		2.5 kg		16.4 µm		28.8 kg		19.8 %		81.6 mm		29.4 N/k	

* Link Sires: Sires 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.*

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

Index Options – indexes reported on page 7

Breeding Objective index options provide the relative value of rams based on a combination of the measured traits' genetic performance. 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.

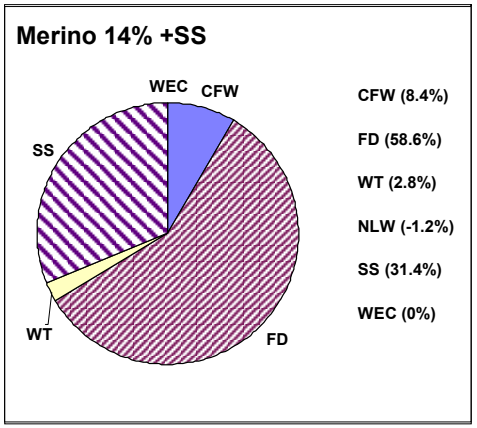
If a breeder is considering using a ram in this report it is critical to consider the performance of the breeder's flock relative to the performance standard in this report. The relative performance must be considered to establish the result that can be expected when a ram is used in a breeder's flock.

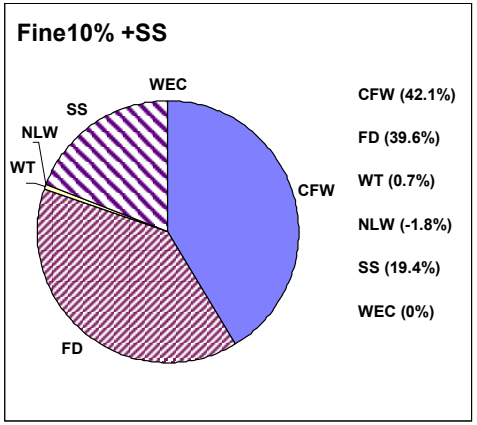
All AMSEA site evaluation reports present 3 standard indexes to provide combined **measured** trait performance These 3 AMSEA indexes are Fine 10% +SS; Merino 14% +SS; and Dual Purpose 7%. These indexes are the same as MERINOSELECT indexes of that name however as there is no direct reproduction records captured by sire evaluation AMSEA do not 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.

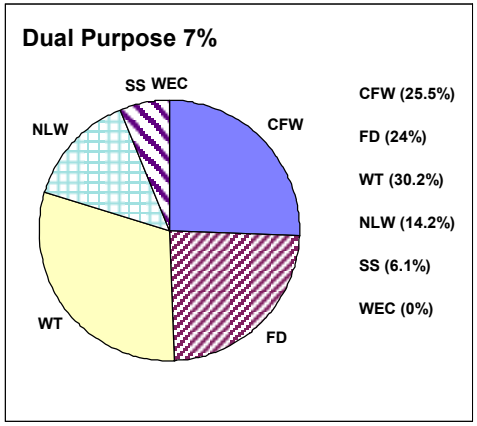
Index *production system* and breeding objectives

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.

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.







Understanding the results – continued

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 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, adjustment for birth effects and the number of progeny a sire has in the analysis.

True Breeding Values would be achieved if the number of progeny evaluated for each sire was 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 sires 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 sire's progeny.

Link Sires

Link sires provide the 'genetic link' between CTSE sites located across Australia to allow all sires entered in these sites to have their performance reported relative to each other in *Merino Superior Sires*. *Merino Superior Sires* reports sires from across all effectively linked CTSE sites and across all years at these sites. Link sires are therefore a vital component of the Central Test Sire Evaluation. To be used as link sire a ram must have at least 25 progeny assessed at 1st Evaluation 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 sires which can provide a wider perspective of the elite rams available across many flocks in Australia and New Zealand.

Calculation of combined measured trait and combined visual trait performance

Combined measured trait performance is calculated as (AMSEA 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

Sire'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

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Central Test Sire Evaluation