

# **NORTH EAST VICTORIA (Dookie College)**

## **Central Test Sire Evaluation**

**2007 Drop 2<sup>nd</sup> 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 Services



Allflex Australia

October 2009

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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 46. 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
Frank O'Connor	03 58339 200	Site Manager
Murray McKenzie	03 57666 278	
Lyndon Kubeil	03 57611 649	
Bill McInnes	03 57273 281	
Mathew Allen	03 57251 665	
Paul Wallace	03 58339 200	Data Manager

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Date of publication: October 2009

## 2007 Drop 2<sup>nd</sup> Evaluation ~ North East Victoria (Dookie College) Sire Evaluation

The information in this site report provides a comprehensive assessment of the North East Victoria, 2007 drop, 2<sup>nd</sup> evaluation sire's progeny performance, both measured and visually assessed. Three graphs and a table provide a summary of the results and eight 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 2<sup>nd</sup> Evaluation 20 months of age with 10 months wool growth.

This is the final assessment of the 2007 Drop progeny.

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## 2007 Drop 2<sup>nd</sup> Evaluation ~ North East Victoria (Dookie College) Sire Evaluation

North East Victoria 2007 drop 2<sup>nd</sup> Evaluation: Age – 20 months, Wool growth – 10 months

### Sire and owner details

Sire code	Sire name Sire ID <sup>#</sup> , Breed <sup>†</sup>	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, Poll 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, Bobinawarra VIC 3678 Ph:(03) 5727 3281, Fax:(03) 5727 3281
8	Pastora Poll, 107 60-1090-2005-050107, Poll 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, Poll 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, Poll 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, Poll 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*.

<sup>UR</sup> 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.

<sup>†</sup> 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

Month	Dookie College Rainfall (mm per month) *					Average
	2005	2006	2007	2008	2009	
January	32.6	13.2	11.8	69.2	9.0	27.16
February	227.6	21.8	16.2	10.6	2.8	55.8
March	6.4	11.4	37.6	43.8	46.8	29.2
April	8.8	15	25.2	12.2	36.6	19.56
May	5	21.6	80.6	36.2	16.0	31.88
June	115	28.4	33.2	19	64.6	52.04
July	38.4	43.6	78.6	71.2	41.4	54.64
August	77.4	19.2	14.4	26.8	26.0	32.76
September	69	16.8	7.4	24.6	39.4	31.44
October	82.6	0.4	20.4	12.2	21.4	27.4
November	58.8	9	72.6	80.6		55.25
December	39.4	9	85	44.0		44.35
Total	761.4	209	483	450.4		461.48

\* Dookie Agriculture College Weather Station

## Managers Report

### Evaluation and Management Program

Event	Date/s	Age (months)	Wool (months)
Selection of ewes	10 <sup>th</sup> February 2007		
Joining	15 <sup>th</sup> March 2007		
Lambing: start – finish	8 <sup>th</sup> August – 15 <sup>th</sup> August		
Tagging/pigment assessment (age in days)	25 <sup>th</sup> August	10 days	
Weaning (age in days)	15 <sup>th</sup> October 2007	60 days	
Weaning body weight (age in days)	15 <sup>th</sup> October 2007	60 days	
Even-up shearing	N/A		
Crutching	19 <sup>th</sup> February 2008	6	6
Fleece sampling	<ul style="list-style-type: none"> <li>• 1st Evaluation: 23<sup>rd</sup> June 2008</li> <li>• 2nd Evaluation: 23<sup>rd</sup> May 2009</li> </ul>	10 20	10 10
Staple length	<ul style="list-style-type: none"> <li>• 1st Evaluation: 23<sup>rd</sup> June 2008</li> <li>• 2nd Evaluation: 23<sup>rd</sup> May 2009</li> </ul>	10 20	10 10
Assessment shearing	<ul style="list-style-type: none"> <li>• 1st Evaluation: 30<sup>th</sup> June 2008</li> <li>• 2nd Evaluation: 25<sup>th</sup> May 2009</li> </ul>	10 20	10 10
Classer's Group	<ul style="list-style-type: none"> <li>• 1st Evaluation: 23<sup>rd</sup> June 2008</li> <li>• 2nd Evaluation: 23<sup>rd</sup> May 2009</li> </ul>	10 20	10 10
Pre shearing scoring	<ul style="list-style-type: none"> <li>• 1st Evaluation: 23<sup>rd</sup> June 2008</li> <li>• 2nd Evaluation: 23<sup>rd</sup> May 2009</li> </ul>	10 20	10 10
Post shearing scoring	<ul style="list-style-type: none"> <li>• 1st Evaluation: 30<sup>th</sup> June 2008</li> <li>• 2nd Evaluation: 25<sup>th</sup> May 2009</li> </ul>	10 20	0 0
Body weigh	<ul style="list-style-type: none"> <li>• 1st Evaluation: 30<sup>th</sup> June 2008</li> <li>• 2nd Evaluation: 25<sup>th</sup> May 2009</li> </ul>	10 20	0 0
WEC sampling	• 1st Evaluation: 26 <sup>th</sup> November 2008	15	3
Vaccination	25 <sup>th</sup> August 2007	10 Days	

### Visual tait assessment

#### 1st Evaluation

Classer's Grade: Mr Luke Marple

Trait Scores: Mr Luke Marple (all other traits)

#### 2nd 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.

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.

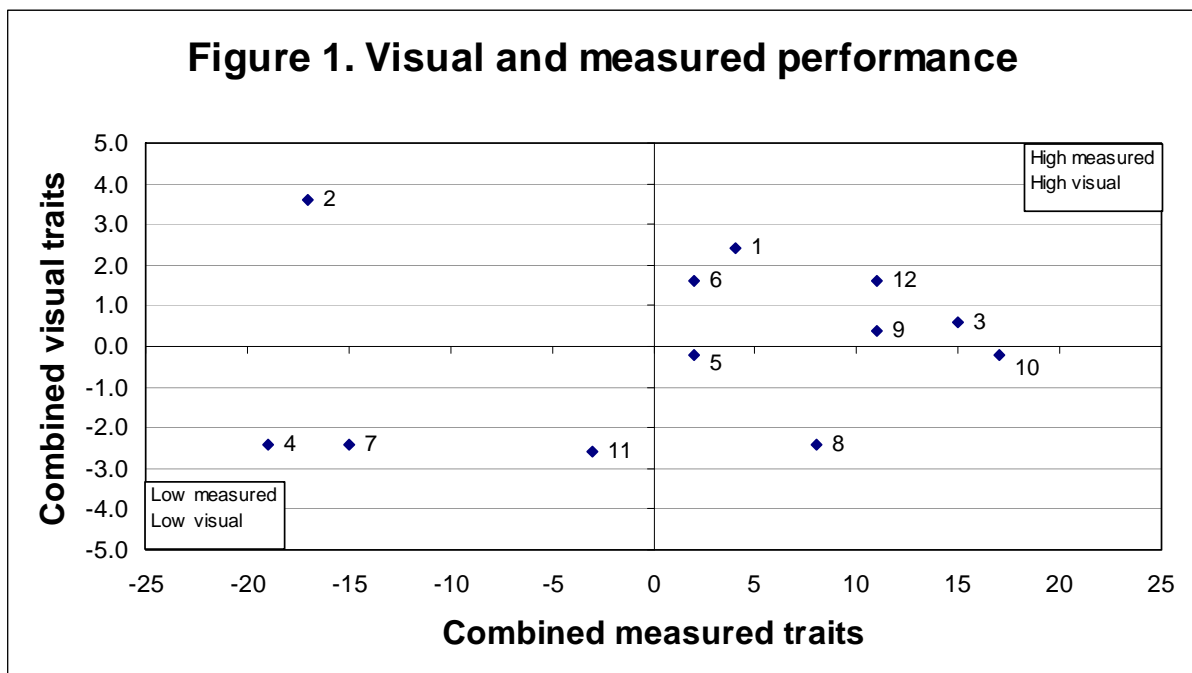
## Figure 1. Combined measured traits and visual trait performance

### Summary graph: visual and measured performance

Each sire that had 20 or more progeny assessed at 2nd 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.



### Summary Of Sires.

1. Avington, 345
2. Cahirblonig, 5079
3. Centre Plus Poll, 107351
4. Eilan Donan, 66
5. \*\*Kilfeera Park, 1.444 (Link)
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 (Link)

\*\* Link Sires

**Table A. AMSEA Index values and Classer's Grade**

The highest performing sires for each trait in any table is shaded grey to highlight the top two trait leaders. 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 20 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			
			Merino 14% +SS	Fine 10% +SS	Dual Purpose 7%	Option %	Tops % (dev)		Culls % (dev)	
							Y^	A	Y	A
1	Avington, 345	46	102	106	100					
2	Cahirblonig, 5079	34	89	81	86	-10	11	-10	-7	
3	Centre Plus Poll, 107351	30	112	109	127	28	-3	-14	-6	
4	Eilan Donan, 66	20	87	78	87	-2	-3	4	9	
5**	Kilfeera Park, 1.444	37	96	98	110	13	0	-10	1	
6	Kilfeera Park, 5.690	45	94	97	106	-2	5	0	-3	
7	King Valley, Yellow 46	36	88	85	83	-15	-3	13	9	
8	Pastora Poll, 107	37	113	113	111	-7	-3	6	9	
9	Terrick West Poll, 6.87	45	105	112	105	-10	1	8	-1	
10	Toland Poll, Red 1008	26	111	119	101	5	-2	9	-1	
11	Toland Poll, Red 1029	38	102	102	95	-8	-5	-1	8	
12**	Toland, W611	35	110	114	101	12	-2	-7	-10	
Average performance						17%	19%	14%	14%	

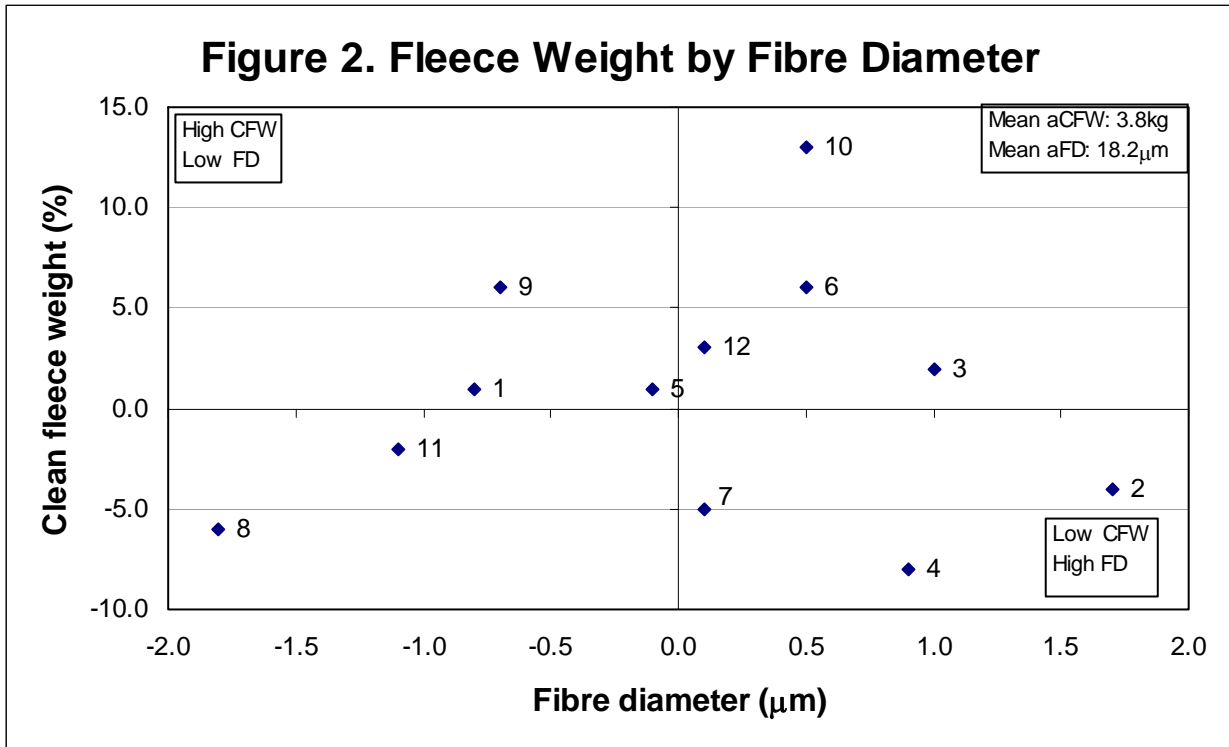
\* Link Sires: Sires evaluated to provide links between years and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires*.

^ 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**

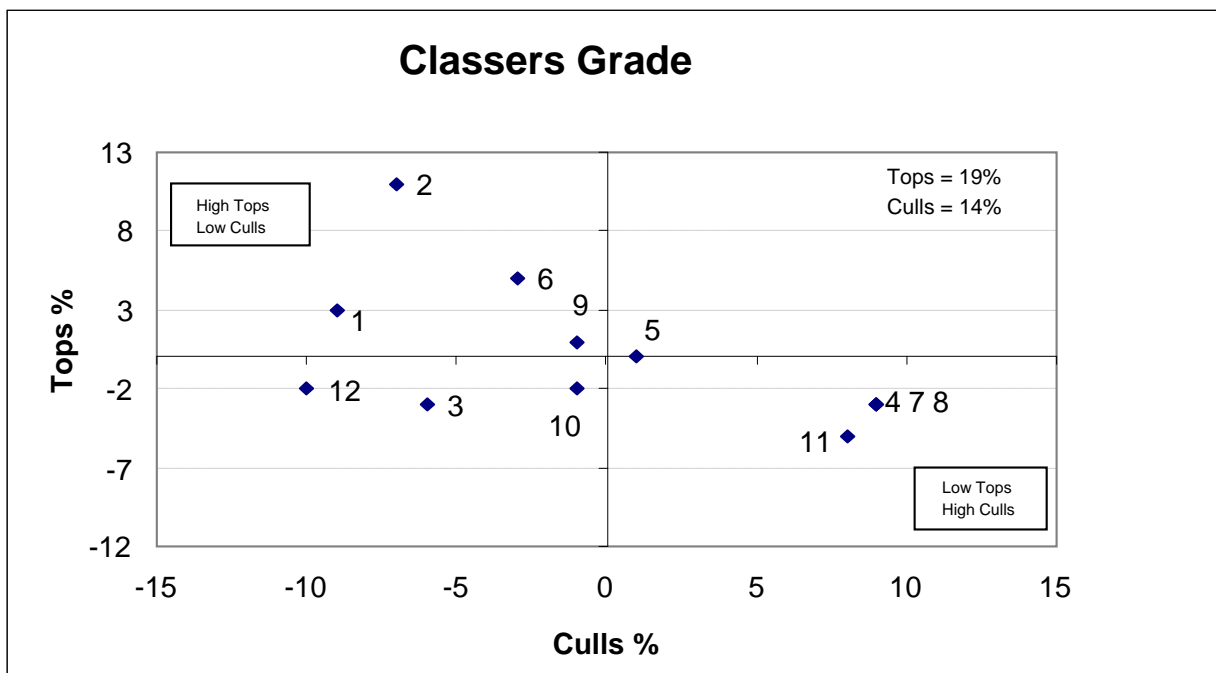
**Figure 2. Fleece weight by fibre diameter**

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

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<b>Sire code:</b>	Allows a sire to be located on the summary graphs and some tables.
<b>Sire name:</b>	Identity of the breeder's flock and the sire's number or name.
<b>No. of progeny:</b>	The number of progeny a sire had at the most recent measured analysis.
<b>Flock Breeding Values:</b>	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.
<b>Traits:</b>	GFW: Greasy fleece weight (percentage).
Abbreviation, trait and the (units reported)	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)
<b>Age at assessment:</b>	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).
<b>Classer's Grade:</b>	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 <sup>1</sup>			
			GFW%		CFW%		FD µm		WT kg		Tops % (dev)		Culls % (dev)	
			Y <sup>^</sup>	A	Y	A	Y	A	Y	A	Y	A	Y	A
1	Avington, 345	46	-0.1	0.1	-0.1	0.1	-0.4	-0.4	-0.8	-0.2	-4	3	3	-9
2	Cahirblonig, 5079	34	-0.1	-0.2	-0.1	-0.1	0.9	1.1	-0.8	-0.8	-10	11	-10	-7
3	Centre Plus Poll, 107351	30	0.5	0.2	0.3	-0.1	0.9	0.5	4.1	4.6	28	-3	-14	-6
4	Eilan Donan, 66	20	0	-0.3	-0.1	-0.3	0.5	0.6	0.1	-1.2	-2	-3	4	9
5**	Kilfeera Park, 1.444	37	0	0	0.1	0	0.1	-0.1	1.8	2.3	13	0	-10	1
6	Kilfeera Park, 5.690	45	0.1	0.2	0	0.1	0.3	0.2	1.3	0.9	-2	5	0	-3
7	King Valley, Yellow 46	36	-0.2	-0.3	-0.2	-0.2	-0.3	0.1	-1.5	-1.6	-15	-3	13	9
8	Pastora Poll, 107	37	0	-0.2	-0.1	-0.2	-0.9	-1.1	1.3	0.6	-7	-3	6	9
9	Terrick West Poll, 6.87	45	0.1	0.2	0.1	0.1	-0.3	-0.6	-0.6	0.3	-10	1	8	-1
10	Toland Poll, Red 1008	26	0.1	0.4	0.2	0.4	0	0.3	-2.8	-4.7	5	-2	9	-1
11	Toland Poll, Red 1029	38	-0.3	-0.2	-0.2	0	-0.7	-0.8	-1.0	2.0	-8	-5	-1	8
12**	Toland, W611	35	0	0	0.2	0.2	0	0.1	-1.0	-2.4	12	-2	-7	-10
Average performance			3.6	6.0	2.5	3.8	16.4	18.2	28.8	44.3	17	19	14	14
			kg	kg	kg	kg	µm	µm	kg	kg	%	%	%	%

\* 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*.

<sup>^</sup> Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older)

<sup>1</sup> 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		Fat mm		EMD mm		
			Y <sup>^</sup>	A	Y	A	Y	A	Y	A	Y	A	
1	Avington, 345	46	0.1	-0.1	-3.0		-3.5						
2	Cahirblonig, 5079	34	-1.4	-0.8	2.2		3.4						
3	Centre Plus Poll, 107351	30	-1.9	-1.5	10.4		2.6						
4	Eilan Donan, 66	20	-1.2	-1.0	0.8		-1.3						
5**	Kilfeera Park, 1.444	37	0.4	0.5	-1.6		-2.7						
6	Kilfeera Park, 5.690	45	1.0	1.0	-1.7		0.1						
7	King Valley, Yellow 46	36	0.7	-0.1	-2.2		-1.6						
8	Pastora Poll, 107	37	0.3	0.3	-5.2		-0.9						
9	Terrick West Poll, 6.87	45	1.5	1.4	-4.6		0.0						
10	Toland Poll, Red 1008	26	0.3	0.2	4.7		2.9						
11	Toland Poll, Red 1029	38	0.8	1.1	-10.0		0.3						
12**	Toland, W611	35	-0.7	-1.0	10.0		0.9						
Average performance			19.8 %	18.3 %	81.6 mm	mm	29.5 N/kT	N/kT					

\* 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*.

<sup>^</sup> 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 <b>1</b> (no fleece rot), <b>2 and 3</b> (bands of bacterial staining but no crusting), and <b>4 and 5</b> (bands of crusty fleece rot).
■ Wool colour:	Greasy wool colour scored from <b>1</b> (whitest) to <b>5</b> (yellow).
■ Wool character:	Definition and variation of crimp between and along the staple scored from <b>1</b> (well defined and regular along staple) to <b>5</b> (undefined and large variation).
■ Dust penetration:	Degree of dust penetration from <b>1</b> (only tip <5%) to <b>5</b> (80 to 100% of staple).
■ Staple weathering:	The deterioration of the staple due to light and water from <b>1</b> (least, <5% of staple) to <b>5</b> (most, 30 to 50%) reflect the depth and degree of deterioration.
■ Staple structure:	The size and diameter of each staple from <b>1</b> (<5mm) to <b>5</b> (30 to 50 mm)
■ Face cover:	Wool cover on the face scored from <b>1</b> (open face) to <b>5</b> (fully covered face).
■ Feet/Legs:	Conformation of feet and legs scored from <b>1</b> (very good) to <b>5</b> (very poor).
■ Body wrinkle:	The degree of body wrinkle from <b>1</b> (no wrinkle) to <b>5</b> (extensive wrinkle).
■ Jaw:	Under- or over-shot lower jaw (and teeth) relative to the top jaw. Three scores <b>1</b> (very well aligned), <b>3</b> (marginally under or over) and <b>5</b> (heavily under or over).
■ Back/Shoulder:	Conformation of the back and shoulder from <b>1</b> (very good) to <b>5</b> (very poor).
■ Fibre pigmentation:	The percentage of dark fibres on any part of the sheep from <b>1</b> (0 pigmented fibres at any site) to <b>5</b> (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 <b>1</b> (0 pigmentation at any site) to <b>5</b> (76 to 100% pigmented area on one or more bare skin sites, <b>and/or</b> 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 <b>1</b> (no recessive markings) and <b>5</b> (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 <b>1</b> (no spot/s) and <b>5</b> (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 <b>1</b> (large) to <b>5</b> (no bare).
■ Crutch cover	Size of natural bare area in the pubic and groin from <b>1</b> (large) to <b>5</b> (no bare).
■ Breech wrinkle	Degree of wrinkle at the tail set and hind legs from <b>1</b> (nil) to <b>5</b> (extensive).
■ Dag	Degree of dag adhering to the breech and legs from <b>1</b> (nil) to <b>5</b> (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 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	100	0	0	0	0	-0.2	37	54	9	0	0	0	2	46	46	6	0	-0.1	6	74	20	0	0
2	0	97	3	0	0	0	-0.1	33	50	17	0	0	0	0	50	47	3	0	0	4	73	23	0	0
3	0	100	0	0	0	0	0	26	59	15	0	0	0.1	0	44	44	12	0	0.2	0	59	37	4	0
4	0	100	0	0	0	0	0.2	22	56	17	5	0	-0.1	11	39	50	0	0	0.1	0	67	33	0	0
5**	0	100	0	0	0	0	0	20	69	11	0	0	0.2	0	31	60	9	0	-0.1	0	86	14	0	0
6	0	97	0	3	0	0	0.3	18	58	13	11	0	-0.2	2	61	37	0	0	-0.1	3	84	13	0	0
7	0	100	0	0	0	0	0.1	12	76	9	3	0	-0.1	0	53	47	0	0	-0.1	0	88	12	0	0
8	0	100	0	0	0	0	0.1	13	71	16	0	0	0	0	48	48	4	0	-0.1	7	77	16	0	0
9	0.1	92	5	3	0	0	0.3	10	68	20	2	0	-0.1	4	48	48	0	0	-0.2	8	80	12	0	0
10	0	100	0	0	0	0	-0.1	25	75	0	0	0	-0.1	0	54	46	0	0	0.2	0	67	29	4	0
11	0.1	96	0	0	0	4	-0.1	33	59	8	0	0	0.2	0	37	56	7	0	-0.2	0	96	4	0	0
12**	0	100	0	0	0	0	-0.5	60	40	0	0	0	0	7	43	43	7	0	0.3	0	50	47	3	0
Av	1	99	1	0	0	0	1.9	26	61	11	2	0	2.5	2	46	48	4	0	2.2	2	75	22	1	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 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	71	29	0	0	0	0	66	31	3	0
2	0.1	0	63	33	4	0	0	0	63	37	0	0
3	0.4	0	33	59	8	0	0.2	0	52	41	7	0
4	-0.1	5	67	28	0	0	-0.1	6	61	33	0	0
5**	-0.1	0	77	23	0	0	0.2	0	43	54	3	0
6	-0.1	0	79	21	0	0	-0.2	2	74	24	0	0
7	-0.1	2	74	24	0	0	0	0	62	38	0	0
8	-0.2	7	74	19	0	0	-0.1	0	71	29	0	0
9	-0.3	7	78	15	0	0	-0.1	0	75	25	0	0
10	0.2	0	46	54	0	0	-0.1	0	75	25	0	0
11	-0.3	11	74	15	0	0	0	3	56	41	0	0
12**	0.5	0	37	43	20	0	0.1	0	60	37	3	0
Av	2.3	3	64	30	3	0	2.4	1	63	35	1	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 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 Code	Pigmentation													
	Fibre pigmentation					Non-fibre pigmentation					Black	spot		
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	5	5
1														
2														
3														
4														
5**														
6														
7														
8														
9														
10														
11														
12**														
Av														

Conformation						
Jaw						
Dev	1	2	3	4	5	
0	100	0	0	0	0	
0	100	0	0	0	0	
0	100	0	0	0	0	
0	100	0	0	0	0	
0	100	0	0	0	0	
0	100	0	0	0	0	
0.2	94	0	0	0	6	
0	100	0	0	0	0	
0	100	0	0	0	0	
0	100	0	0	0	0	
0	96	0	4	0	0	
0	100	0	0	0	0	
1	100	0	0	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 3d – Visual trait assessments – Conformation**

Conformation traits are reported as 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.

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	97	0	3	0	0																		
2	-0.1	100	0	0	0	0																		
3	0	96	0	4	0	0																		
4	-0.1	100	0	0	0	0																		
5**	0.1	94	0	6	0	0																		
6	0.1	95	0	5	0	0																		
7	-0.1	100	0	0	0	0																		
8	0.1	90	0	10	0	0																		
9	-0.1	100	0	0	0	0																		
10	-0.1	100	0	0	0	0																		
11	-0.1	100	0	0	0	0																		
12**	0	97	0	3	0	0																		
Av	1.1	97	0	3	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 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 $\mu\text{m}$		WT kg		FDCV %		SL mm		SS N/ktex	
			Y <sup>^</sup>	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y	A
1	Avington, 345	46	-0.1	0.1	-0.1	0.1	-0.4	-0.4	-0.8	-0.2	0.1	-0.1	-3.0		-3.5	
2	Cahirblonig, 5079	34	-0.1	-0.2	-0.1	-0.1	0.9	1.1	-0.8	-0.8	-1.4	-0.8	2.2		3.4	
3	Centre Plus Poll, 107351	30	0.5	0.2	0.3	-0.1	0.9	0.5	4.1	4.6	-1.9	-1.5	10.4		2.6	
4	Eilan Donan, 66	20	0	-0.3	-0.1	-0.3	0.5	0.6	0.1	-1.2	-1.2	-1.0	0.8		-1.3	
5**	Kilfeera Park, 1.444	37	0	0	0.1	0	0.1	-0.1	1.8	2.3	0.4	0.5	-1.6		-2.7	
6	Kilfeera Park, 5.690	45	0.1	0.2	0	0.1	0.3	0.2	1.3	0.9	1.0	1.0	-1.7		0.1	
7	King Valley, Yellow 46	36	-0.2	-0.3	-0.2	-0.2	-0.3	0.1	-1.5	-1.6	0.7	-0.1	-2.2		-1.6	
8	Pastora Poll, 107	37	0	-0.2	-0.1	-0.2	-0.9	-1.1	1.3	0.6	0.3	0.3	-5.2		-0.9	
9	Terrick West Poll, 6.87	45	0.1	0.2	0.1	0.1	-0.3	-0.6	-0.6	0.3	1.5	1.4	-4.6		0	
10	Toland Poll, Red 1008	26	0.1	0.4	0.2	0.4	0	0.3	-2.8	-4.7	0.3	0.2	4.7		2.9	
11	Toland Poll, Red 1029	38	-0.3	-0.2	-0.2	0	-0.7	-0.8	-1.0	2.0	0.8	1.1	-10		0.3	
12**	Toland, W611	35	0	0	0.2	0.2	0	0.1	-1.0	-2.4	-0.7	-1.0	10		0.9	
Average performance			3.6	6.0	2.5	3.8	16.4	18.2	28.8	44.3	19.8	18.3	81.6		29.5	
			kg	kg	kg	kg	$\mu\text{m}$	$\mu\text{m}$	kg	kg	%	%	mm	mm	N/kT	N/kT

\* 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).

## Understanding the results

### Index Options

Breeding Objective index options provide the relative value of sires 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 sire 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 sire is used in a breeder's flock.**

All AMSEA site reports present 3 standard indexes to provide combined measured trait performance. These 3 indexes are AMSEA Fine 10% +SS; AMSEA Merino 14% +SS; and AMSEA Dual Purpose 7%. These indexes are similar to MERINOSELECT indexes of the same 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 in this index.

### 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.*

### Index percentage contribution to economic gain

The percentage contribution to economic gain to a commercial merino flock that joins rams selected using an index shown below.

#### AMSEA Fine 10% +SS

Clean fleece weight:	42%
Fibre diameter:	39%
Body weight:	0%
Staple strength	19%
Worm egg count	0%
Number lambs weaned	0%

#### AMSEA Merino 14% +SS

Clean fleece weight:	8%
Fibre diameter:	58%
Body weight:	3%
Staple strength	31%
Worm egg count	0%
Number lambs weaned	0%

#### AMSEA Dual Purpose 7%

Clean fleece weight:	26%
Fibre diameter:	24%
Body weight:	30%
Staple strength	6%
Worm egg count	0%
Number lambs weaned	14%

## Understanding the results – continued

### Accuracy of Flock Breeding Values

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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

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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

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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 - 100 = 19.7
  - Combined Visual =  $((25.5 - 17.6)/5) - ((25.1 - 16.4)/5) = 7.9/5 - 8.7/5 = 1.58 - 1.74 = -0.16$

**North East Victoria Stud Merino Breeders Inc.**

