

# Elders Balmoral

2015 Drop  
Post Weaning, Yearling and Adult  
Assessment

## Within-Site Results

Conducted by

Elders Balmoral Sire Evaluation Group



under the auspices of

**The Australian Merino Sire Evaluation Association**



**Merino Lifetime Productivity (MLP) Project Site**



June 2017

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## **Acknowledgement**

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The Merino Lifetime Productivity (MLP) Project is being undertaken in partnership between the Australian Merino Sire Evaluation Association Incorporated (AMSEA) and Australian Wool Innovation (AWI). AMSEA and AWI would like to acknowledge those entities who also contribute funding, namely Woolgrowers through sire evaluation entry fees, site hosts, site committee in-kind contributions, and sponsors of AMSEA. A special acknowledgement is also made to the Australian Government who support research, development and marketing of Australian wool.

## **Disclaimer**

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Australian Merino Sire Evaluation Association Incorporated (AMSEA) is funded by Australian Wool Innovation Limited (AWI) which gratefully acknowledges the funds provided by the Australian Government to support research, development and marketing of Australian wool. AMSEA sponsors, woolgrower entry fees and site committee in-kind contributions also contribute to AMSEA funding. This publication should only be used as a general aid and is not a substitute for specific advice. To the extent permitted by law, AWI and AMSEA exclude all liability for loss or damage arising from the use of the information in this publication. © 2017 Australian Wool Innovation Limited and Australian Merino Sire Evaluation Association Incorporated. All rights reserved.

The Australian Merino Sire Evaluation Association has approved the format used in this report.

## Foreword

The Elders Balmoral Sire Evaluation Trials aim to evaluate and promote leading sires suited to fine wool production in Western Victoria.

This goal is achieved by informing participants, their clients and interested woolgrowers about the events surrounding the trials, and through producing and distributing annual reports and periodic newsletters. To further promote the evaluation, displays have been on show at the Australian Sheep & Wool Show now held in Bendigo, Balmoral Show and Hamilton Sheepvention.

Since 1999 successful annual open days have been held at host properties (listed below) to allow progeny inspections and to discuss the sire evaluation program with interested woolgrowers.

In 1997 a small group of stud breeders met to form what is now known as the Elders Balmoral Sire Evaluation Group. The Sire Evaluation Trials commenced in 1998 and as of this year there will be 20 progeny drops: 1998 - 2017. All trials are run for a minimum of 2 years. The site planning and direction is provided by the Elders Balmoral Sire Evaluation Management Committee.

Evaluations have been held on privately owned host properties around the Balmoral district progressing to a new property mostly every two years. Host properties run Merino fine wool ewes with genetics suitable for the district's environment.

- 1998 & 1999 "The Mountain Dam", Balmoral
- 2000 & 2002 "Kerrsville", Balmoral
- 2002 & 2003 "White Oaks", Balmoral
- 2004 & 2005 "Arundale", Balmoral
- 2006 & 2007 "Tuloona", Harrow
- 2008 & 2009 "Mokanger, Cavendish
- 2010 & 2011 "Yiddinga", Edenhope
- 2012 & 2013 "Wando Estate", Casterton
- 2014 "Mepungah", Wannon
- 2015 & 2016 "Tuloona", Harrow (including Merino Lifetime Productivity project)
- 2017 "Koorinal", Coleraine

### Merino Lifetime Productivity (MLP) Project

Over recent years we have used the base trials to value add with additional trials. An example of this is the fertility analysis of sires from the 2010 drop progeny, a pedigree collection comparison in 2012 and now the Merino Lifetime Productivity Project (MLP) trials in 2015 and 2016.

The MLP project is a partnership between AWI and AMSEA that aims to comprehensively explore lifetime relationships between wool production, carcase performance and fertility and compare early life measurements against lifetime performance. For modern Merino selection systems to be successful we need to understand and accommodate the lifetime relationships between all these production elements - and there are current data gaps. The MLP is set to fill these gaps through increasing our understanding of the genetics of the modern Merino sheep over its lifetime, across different locations and genotypes.

The Tuloona trial is one of five standard sire evaluation sites across Australia, that will join via AI for two years and retain their ewe progeny for annual natural mating, classing and lifetime assessment. The sites will initially operate like a standard sire evaluation site – following the rigorous and independently measured and visual assessment protocols. At the conclusion of the standard sire evaluation (once progeny are 18-24 months of age) AWI will support the ongoing measurement and visual classing of ewe progeny through 4-5 joinings and annual shearings. The number of ewes AI'd to each sire is increased to 90 ewes to ensure that there will be sufficient ewe progeny numbers per sire throughout life. More MLP information is available at [www.wool.com/MLP](http://www.wool.com/MLP).

Thank you to our hosts, sponsors, committee and participants for enabling this valuable assessment of Merino genetics.

Tom Silcock  
Chairman - Elders Balmoral Sire Evaluation Group

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## 2015 Drop Post Weaning and Yearling Assessment

The information in this Site Report provides an update of the assessment of the 2015 drop, including the Post Weaning, Yearling and Adult assessments of the sire's progeny performance for measured and visually assessed traits.

The Post Weaning fleece and visual assessments of the ewes were made at 7 months of age with 7 months of wool growth. Post Weaning shearing of the ewes was conducted at 7.5 months of age with 7.5 months of wool growth.

The Yearling fleece assessments and shearing of the wethers was conducted at 12 months of age with 12 months of wool growth. No visual assessment of the wethers was undertaken.

The Adult fleece and visual assessments of the ewes were made at 18 months of age with 10 months of wool growth. Adult shearing of the ewes was conducted at 19 months of age with 11 months of wool growth.

### Site Committee

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## Sire and Contact Details

Breeders flock, Sire name Sire ID #, Breed †	Contact Details
<b>Billandri Poll, 130087 (Link)</b> 600571-2013-130087, Poll Merino	<b>Bill Sandilands</b> Billandri, Kendenup WA 6323 P: (08) 9851 4030, M: 0427 51 4030, E: csandilands@bordnet.com.au
<b>Bogo, 111424 (Link)</b> 504792-2011-111424, Merino	<b>Malcolm Peake</b> Ravenswood, Boambolo Road, Yass NSW 2582 P: (02) 6227 1223, M: 0408 42 6103, E: info@bogomerinos.com.au
<b>Bundaleer Poll, 13V741</b> 601449-2013-13V741, Poll Merino	<b>Peter and Gavin Lieschke</b> Pine Ridge, RMB 123, Walla Walla NSW 2659 P: (02) 6029 0142, M: 0409 77 8220, E: lieschke@skymesh.com.au
<b>Bundilla, 111265</b> 504081-2011-111265, Merino	<b>Ross, Rick &amp; Jill Baldwin</b> Bundilla, Tubbul Road, Young NSW 2594 P: (02) 6383 3802, M: 0429 83 3837, E: bundillamerinos@bigpond.com
<b>Centre Plus Poll, 207316</b> 601250-2012-207316, Poll Merino	<b>Robert Mortimer</b> Devondale, Tullamore NSW 2874 P: (02) 6892 8259, M: 0429 92 8292, E: robert@centreplus.com.au
<b>Darriwell, 130941</b> 503655-2013-130941, Merino	<b>Russell Jones</b> Darriwell, 924 Darriwell Rd, Trundle NSW 2875 P: (02) 6869 9242, M: 0428 69 9243, E: darriwool@hotmail.com
<b>Glenpaen, 120042</b> 504654-2012-120042, Merino	<b>Rod Miller</b> 733 Victoria Valley Rd, Brimpaen VIC 3401 P: (03) 5383 9227, M: 0428 53 9227, E: glenpaen@gmail.com
<b>Greenfields Poll, 130599</b> 600240-2013-130599, Poll Merino	<b>Daryl Smith</b> Glenville, Cowell SA 5602 P: (08) 8628 5032, M: 0428 28 5033, E: glenville@activ8.net.au
<b>Hazeldean, 11.43 (Link)</b> 500383-2011-000043, Merino	<b>Jim Litchfield</b> Hazeldean Pty Ltd, Cooma NSW 2630 P: (02) 6453 5555, M: 0417 67 6561, E: admin@hazeldean.com.au
<b>Kurra-Wirra, SR5681</b> 504173-2013-SR5681, Merino	<b>Anthony Close</b> Kurra Wirra, 770 Moree-Culla Rd, Culla VIC 3315 P: (03) 5570 4238, M: 0437 08 5217, E: kurrawirra@skymesh.com.au
<b>Leahcim Poll, 090918 (Link)</b> 600815-2009-090918, Poll Merino	<b>Andrew and Rosemary Michael</b> PO Box 31, Snowtown SA 5520 P: (08) 8865 2085, M: 0418 82 8431, E: leahcimgenetics@bigpond.com
<b>Leahcim Poll, 123153</b> 600815-2012-123153, Poll Merino	<b>Andrew and Rosemary Michael</b> PO Box 31, Snowtown SA 5520 P: (08) 8865 2085, M: 0418 82 8431, E: leahcimgenetics@bigpond.com
<b>Merinotech WA Poll, 100081 (Unreg)</b> 609040-2010-100081, Poll Merino	<b>Ian Robertson</b> Pine Ridge, RMB 123, Walla Walla NSW 2659 P: (08) 9833 6251, E: yarrak311@optusnet.com.au
<b>Mokanger, 120092 (Link)</b> 504888-2012-120092, Merino	<b>Richard McShane</b> Mokanger Past Co, 711 Mokanger Road, Cavendish VIC 3314 P: (03) 5574 2367, M: 0418 52 8763, E: mokanger2@bigpond.com
<b>Moojepin, 100248 (Link)</b> 504637-2010-100248, Merino	<b>Mark Wootton</b> 1874 Hensley Park Road, Hensley Park VIC 3315 P: (03) 5574 8246, M: 0427 74 8252, E: office@jigsawfarms.com.au

## Sire and Contact Details

Breeders flock, Sire name Sire ID #, Breed †	Contact Details
<b>Mumblebone, 130389 (Link)</b> 500063-2013-130389, Merino	<b>Chad Taylor</b> Marapana, 456 Wuuluman Road, Wellington NSW 2820 P: (02) 6845 3620, M: 0458 45 3608, E: chad@mumblebone.com.au
<b>Mumblebone, 130850 (Link)</b> 500063-2013-130850, Merino	<b>Chad Taylor</b> Marapana, 456 Wuuluman Road, Wellington NSW 2820 P: (02) 6845 3620, M: 0458 45 3608, E: chad@mumblebone.com.au
<b>Nareeb Nareeb, 130380</b> 500246-2013-130380, Merino	<b>Richard Beggs</b> 4395 Hamilton Chatsworth Rd, Nareeb VIC 3293 P: (03) 5577 8222, M: 0429 02 5056, E: office@nareebnareeb.com.au
<b>Nerstane, 130467</b> 503298-2013-130467, Merino	<b>John, Hamish and Jock McLaren</b> Nerstane, Woolbrook NSW 2354 P: (02) 6777 5881, M: 0429 77 5891, E: info@nerstane.com.au
<b>One Oak No. 2, R56 (Link)</b> 503855-2010-100R56, Merino	<b>Graham Wells</b> 1763 Great Alpine Road, Smoko VIC 3741 M: 0428 44 2930, E: oneoakpl@bigpond.com
<b>Roseville Park, 140019 (Link)</b> 504166-2014-140019, Merino	<b>Matthew and Cherie Coddington</b> Glenwood, 39R Dilladerry Rd MS3, Dubbo NSW 2830 P: (02) 6887 7286, M: 0428 63 5386, E: rpmerinos@bigpond.com
<b>The Mountain Dam, 11/ESA004 (Link)</b> 504572-2011-ESA004, Merino	<b>Tom Silcock</b> The Mountain Dam, 429 Silcocks Road, Telangatuk East VIC 3401 P: (03) 5388 2288, M: 0419 88 2239, E: tom@themountaindam.com.au
<b>Tuckwood Poll, 121021</b> 601053-2012-121021, Poll Merino	<b>Geoff Tucker</b> PMB 21, Millicent SA 5280 P: (08) 8734 2050, M: 0427 34 2050, E: geomag@activ8.net.au
<b>Yalgoo, 120043 (Link)</b> 501552-2012-120043, Merino	<b>Jock Nivison</b> Yalgoo, PO Box 141, Walcha NSW 2354 P: (02) 6777 2088, M: 0497 76 2977, E: jock@yalgoogenetics.com.au
<b>Yiddinga, 130374 (Unreg)</b> 509242-2013-130374, Merino	<b>Jim Farran</b> 220 Edenhope-Penola Road, Edenhope VIC 3318 P: (03) 5585 1888, M: 0408 31 0107, E: j.farran@bigpond.com

**(Link)** Sire 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*.

**(Unreg)** Sire bred in an unregistered flock.

# 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

### Host Property for 2015 drop progeny and location

“Tuloona” is operated by the Craig family and is located approximately 5km out of Harrow. Tuloona receives a winter dominated rainfall of approximately 470mm annually.

### Ewe Base

The ewe base is a traditional super fine wool flock that has focussed over the past ten years on improving growth rate, wool cut and fertility whilst attempting to retain micron and quality. The mature ewe flock averages 17.2um and cuts 38kg/ha of clean wool (4.7kg at 63% yield, 2.96kg CFW) and weighing 52kg.

Ewes for the Merino Lifetime Productivity project were selected from three age groups totalling 3,500 ewes. Selection was based on evenness.

### Joining

Laparoscopic insemination of 2160 ewes was conducted by Genstock Jerilderie between the 23-26 March, 2015. 25 sires were inseminated. Ewes averaged approximately condition score 2.9 at joining.

Owing to a mix up of semen at an AI centre, the semen sent for the Mumblebone sire was from two different Mumblebone sires. Both sires are reported in this report and the intended sire entrant has been re-joined and will have additional progeny in the 2016 drop.

### Pregnancy and lambing

The ewes were pregnancy scanned on the 19 May, 2015. The results of which were disappointing with a relative low total number of foetuses. This was largely driven by a very low number of twin bearing ewes being scanned. In total, 67.3% foetuses to ewes joined were scanned.

Ewes were split following pregnancy scanning with the single bearing ewes divided into heavy condition and light condition in order to maximise lamb survival. It was also decided to lamb the single bearing ewes in groups of approximately 200 to increase the possibility of lamb survival.

Ewes completed lambing at Tuloona in late August 2015. A total of 1268 lambs were tagged on 3 September. This represented 87% of the number of foetuses scanned. DNA samples were taken at tagging to determine sire and dam parentage.

The lambs were marked at tagging and scored for breech traits. On 9 November the lambs were weaned with an average weaning weight of 23.4kg.

### Weaning to Adult Assessment

Lambs tracked well for growth rate and body weight gain from weaning until affected with lupinosis in March 2016. Body weights collected early March 2016 averaged 31.2kg (up from 25.5 on 28/1/16 – 160 grams/day) with an average condition score of 2.98. A combination of managing the lupinosis and a number of trial activities further impacted on growth. With shearing completed and green feed in front of them, all lambs did well. WEC's were high enough to take individual samples in October 2016 where they had a weight of 36.5kg Avg. In March 2017 pre joining weights and condition scores were taken, with an average weight of 43.1kg and 2.9 CS.

### Seasonal conditions

The Spring leading up to the Summer of 2016, gave us record rainfall deficiencies leading to many livestock water storages being dry for the first time ever. As a result, lambs were heavily supplemented from weaning to May 2016. Record low levels of dry matter and water availability was replaced with an abundance of both. The wet growing season then provided a big challenge to breakdown in wool and wool quality. An unscheduled fly protection application was applied. Most fleece issues had lifted by 2017 shearing, although a small number required antibiotics pre shearing to lift dermatitis. Ewes had their final off shears assessment at the end of March 2017 and were immediately naturally joined off shears into one of the best autumn breaks on record.



## Assessment and Management Program

Activity		Date/s	Age	Wool
Selection of ewes		February 2015		
Allocation of ewes for mating		March 2015		
Pregnancy scanning		19 May 2015		
Allocated to lambing paddocks		10 August 2015		
Lambing: start – finish		16 – 23 August 2015		
Lambing mobs boxed to one management group		3 September 2015	14 days	
Tagging, pigmentation and breech scoring		3 September 2015	14 days	
Marking		3 September 2015	14 days	
Weaning		9 November 2015	81 days	
Mid side fleece sampling	P	17 March 2016	7 months	7 months
	Y (wethers)	17 August 2016	12 months	12 months
	A	6 March 2017	19 months	11 months
Visual trait scoring	P	17 March 2016	7 months	7 months
	A	6 March 2017	18 months	10 months
Shearing	P	11 April 2016	7.5 months	7.5 months
	Y (wethers)	17 August 2016	12 months	12 months
	A	31 March 2016	19 months	11 months
Fat and eye muscle scanning	Y	26 September 2016	13 months	6 months
	H	15 March 2017	18 months	10 months
Worm egg count sampling	H	10 October 2016	13.5 months	
Body weighing	W	9 November 2015	81 days	
	P	28 January 2016	5 months	
	P	24 March 2016	7 months	
	Y (wethers)	17 August 2016	12 months	
	Y	26 September 2016	13 months	
	H	17 November 2017	15 months	
	A	31 March 2017	19 months	
Drench	Drenched at weaning. Ewes drenched in September 2016 when WEC samples were collected.			
Fly treatment	Treated with Clik® at marking. Progeny are not mulesed. Ewes received a body and breech application of Clik® in September 2016. Ewes were crutched 14 December 2016			
Supplementary feeding	Silage, Barley and Lupins post weaning 2016-17 summer feeding program was Barley and lupins which started in December and finished in April.			
Field day or public display of 2015 drop progeny	Field Day & Progeny Display– April 2016 and March 2017 Annuals display at Balmoral Show, Sheepvention and Bendigo Sheep and Wool Show <b>Next Field Day 16 February 2018</b>			

## Visual Trait Assessment and Site Breeding Objective

### Visual trait assessment

Classer's Grade: Mr David Whyte, Elders Limited

Trait Scores: Committee

### Site Breeding Objective used to assess the Visual 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 Objective for both measured and visual assessed traits was developed by the site committee in consultation with the classer prior to the grading.

### Breeding Objective

The goal is to select sheep that are productive and well grown, with sound conformation and carrying heavy fine wool fleeces of good character, colour and nourishment suitable for the western Victorian environment.

## Sire Codes and Pedigrees

Sire code	Breeders flock, Sire number	Sheep Genetics ID	Sire of Sire
1	Billandri Poll, 130087	600571-2013-130087	509605-2009-090122
2	Bogo, 111424	504792-2011-111424	Unknown
3	Bundaleer Poll, 13V741	601449-2013-13V741	Unknown
4	Bundilla, 111265	504081-2011-111265	504081-2009-090044
5	Centre Plus Poll, 207316	601250-2012-207316	601250-2009-907538 (Centre Plus Poll, 907538)
6	Darriwell, 130941	503655-2013-130941	503655-2011-000952
7	Glenpaen, 120042	504654-2012-120042	503298-2009-090910 (Nerstane, 090910)
8	Greenfields Poll, 130599	600240-2013-130599	600240-2010-100087
9	Hazeldean, 11.43	500383-2011-000043	600553-2007-070002 (Coromandel Poll, ET2)
10	Kurra-Wirra, SR5681	504173-2013-SR5681	504173-2010-SR4862
11	Leahcim Poll, 090918	600815-2009-090918	600815-2007-070319
12	Leahcim Poll, 123153	600815-2012-123153	600815-2010-101009
13	Merinotech WA Poll, 100081	609040-2010-100081	609040-2008-088578
14	Mokanger, 120092	504888-2012-120092	504888-2009-000004
15	Moojepin, 100248	504637-2010-100248	504637-2008-081206
16	Mumblebone, 130389	500063-2013-130389	601365-2009-090399
17	Mumblebone, 130850	500063-2013-130850	500063-2010-100186
18	Nareeb Nareeb, 130380	500246-2013-130380	503855-2011-BL0115
19	Nerstane, 130467	503298-2013-130467	503298-2010-100919 (Nerstane, 100919)
20	One Oak No. 2, R56	503855-2010-100R56	503855-2008-080004
21	Roseville Park, 140019	504166-2014-140019	601050-2009-090853 (Stockman Poll, 090853)
22	The Mountain Dam, 11/ESA004	504572-2011-ESA004	600792-2009-090576 (Mernowie Poll, 090576)
23	Tuckwood Poll, 121021	601053-2012-121021	601082-2008-081375
24	Yalgoo, 120043	501552-2012-120043	503298-2008-080121 (Nerstane, 080121)
25	Yiddinga, 130374	509242-2013-130374	509242-2011-000076

## Index Options

A breeding index combines multiple measured traits into a single value that reflects a certain emphasis on these traits. It is important that you use an index that best matches the breeding objective and production system of the flock you are selecting for.

It is recommended that the performance of individual measured and visually assessed traits is used in conjunction with an index as selection indexes assist in making balanced selection decisions.

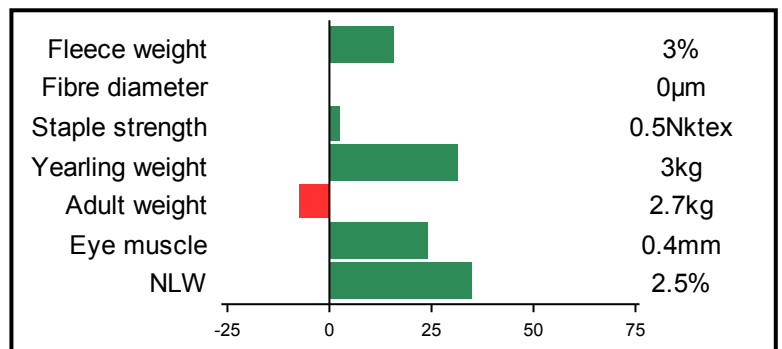
Site Reports present 4 indexes, DP+; MP+; FP+ and WP+. These indexes are the same as MERINOSELECT indexes of that name but account for the fact that direct reproduction records have not been captured by AMSEA sire evaluation. The WP+ index was established by AMSEA and is now available as custom MERINOSELECT index

Provided is the percentage contribution that each trait makes to economic gain in a commercial flock that uses an index for sire selection. Additionally, included for each index are the likely within-flock responses from using an index for 10 years. These responses are based on a ram breeding flock with a standard breeding program, no introduction of outside genetics and uses 35% of their selection emphasis on traits that are not in the index (such as visually assessed performance).

### Dual Purpose Plus (DP+)

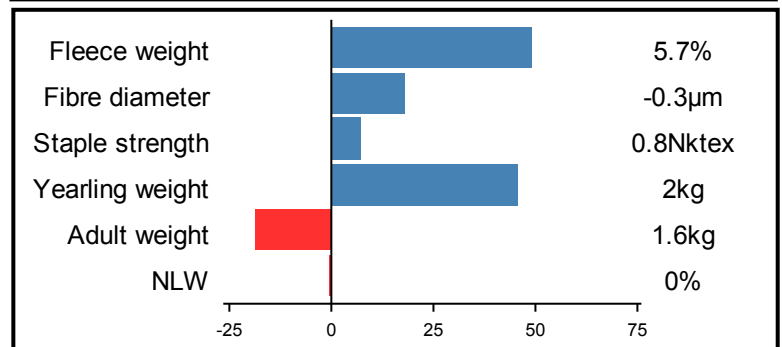
Based on a meat focused production system where surplus progeny are sold as lambs and a portion of ewes are joined to terminal sires. Large increase in body weight and carcass traits. Moderate increase in fleece weight. Maintain fibre diameter and staple strength. Moderate increase in reproduction.

**Percentage Contribution to Economic Gain**      **Trait Gain**



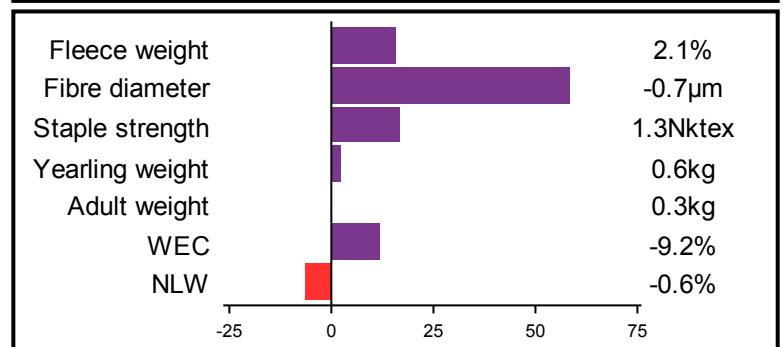
### Merino Production Plus (MP+)

Based on a balanced wool and meat production system where surplus progeny are sold as hoggets. Balanced emphasis on increasing fleece weight and reduction in fibre diameter. Moderate increase in body weight, with little change in reproduction.



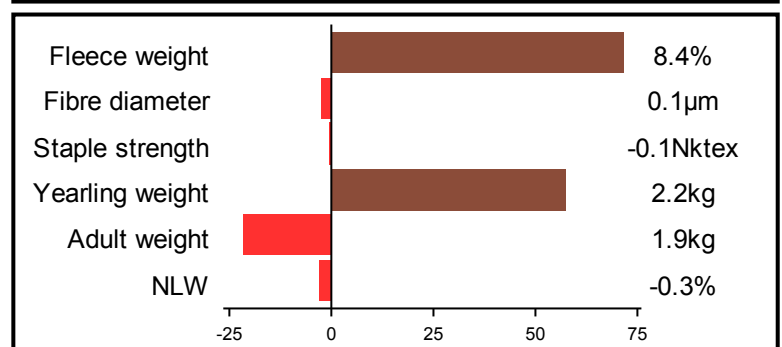
### Fibre Production Plus (FP+)

Based on a wool production system where wethers are retained, operating in an environment where worms cause economic losses. Large reduction in fibre diameter. Moderate increase in staple strength. Small reduction in WEC (if measured in the breeding program). Small increase in fleece weight. Little change in body weight and reproduction.



### Wool Production Plus (WP+)

Based on the MP+ production system with a greater emphasis on increasing fleece weight, while maintaining fibre diameter and a moderate emphasis on increasing body weight.



**Table 1. AMSEA Index Values and Classer's Visual Grade**

The index values reported are based on measured traits FBV performance with varying emphasis on fleece weight, fibre diameter, body weight, staple strength and worm egg count. See 'Index Options' (page 9) for more information on the indexes presented in the table below.

The highest performing sires for each trait (trait leaders) are highlighted by shading. Each sire is listed for Classer's Visual Grade and the same four indexes at all site evaluations.

Sire Code	Breeder's flock, Sire name	Number of progeny	AMSEA Index Values				Classer's Visual Grade	
			Dual Purpose Plus	Merino Production Plus	Fibre Production Plus	Wool Production Plus	Tops % A^	Culls % A
1	Billandri Poll, 130087	41	88	97	96	102	0	-5
2	Bogo, 111424	50	104	99	104	97	26	-19
3	Bundaleer Poll, 13V741	54	97	98	103	93	-14	5
4	Bundilla, 111265	37	135	123	105	131	-17	12
5	Centre Plus Poll, 207316	44	102	102	109	96	-9	3
6	Darriwell, 130941	49	96	110	105	110	-10	-2
7	Glenpaen, 120042	49	81	107	110	101	-15	29
8	Greenfields Poll, 130599	48	94	107	105	108	8	-9
9	Hazeldean, 11.43	56	121	118	108	123	13	-5
10	Kurra-Wirra, SR5681	48	73	89	98	88	6	4
11	Leahcim Poll, 090918	59	88	73	80	74	-9	17
12	Leahcim Poll, 123153	40	106	84	85	87	-15	3
13	Merinotech WA Poll, 100081	55	119	110	114	104	19	-12
14	Mokanger, 120092	37	104	110	111	106	-27	36
15	Moojepin, 100248	48	140	105	89	118	-9	14
16	Mumblebone, 130389	29	87	78	82	80	10	3
17	Mumblebone, 130850	27	105	90	85	92	18	-12
18	Nareeb Nareeb, 130380	45	74	99	100	98	1	-15
19	Nerstane, 130467	44	82	105	106	104	24	-11
20	One Oak No. 2, R56	57	90	89	90	95	-11	0
21	Roseville Park, 140019	34	92	92	93	93	-10	-8
22	The Mountain Dam, 11/ESA004	57	100	90	93	91	-5	0
23	Tuckwood Poll, 121021	48	119	118	104	120	17	-6
24	Yalgoo, 120043	57	101	102	113	92	9	-10
25	Yiddinga, 130374	49	106	105	109	99	2	-12
	<b>Average performance</b>	<b>46</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>28</b>	<b>19</b>

Figure 1a. Combined measured traits (DP+ index) and combined visually assessed traits for the site objective.

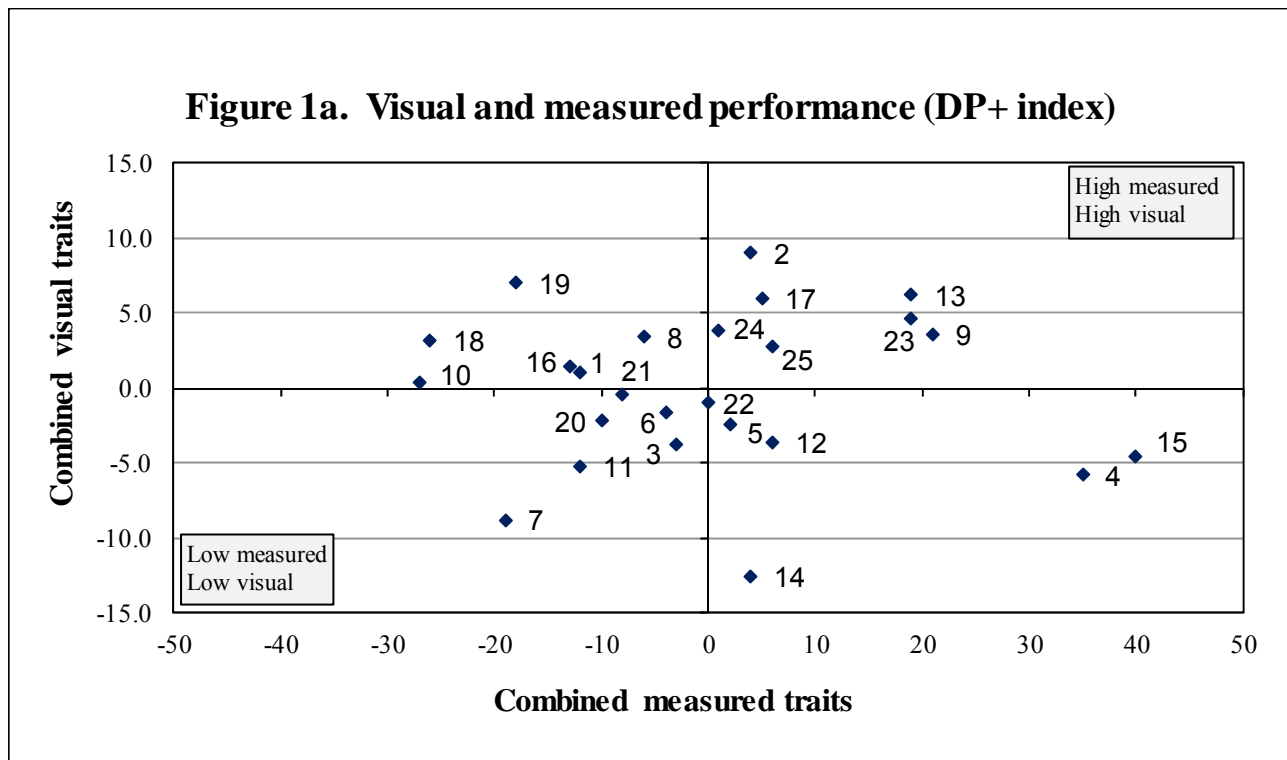


Figure 1b. Combined measured traits (MP+ index) and combined visually assessed traits for the site objective.

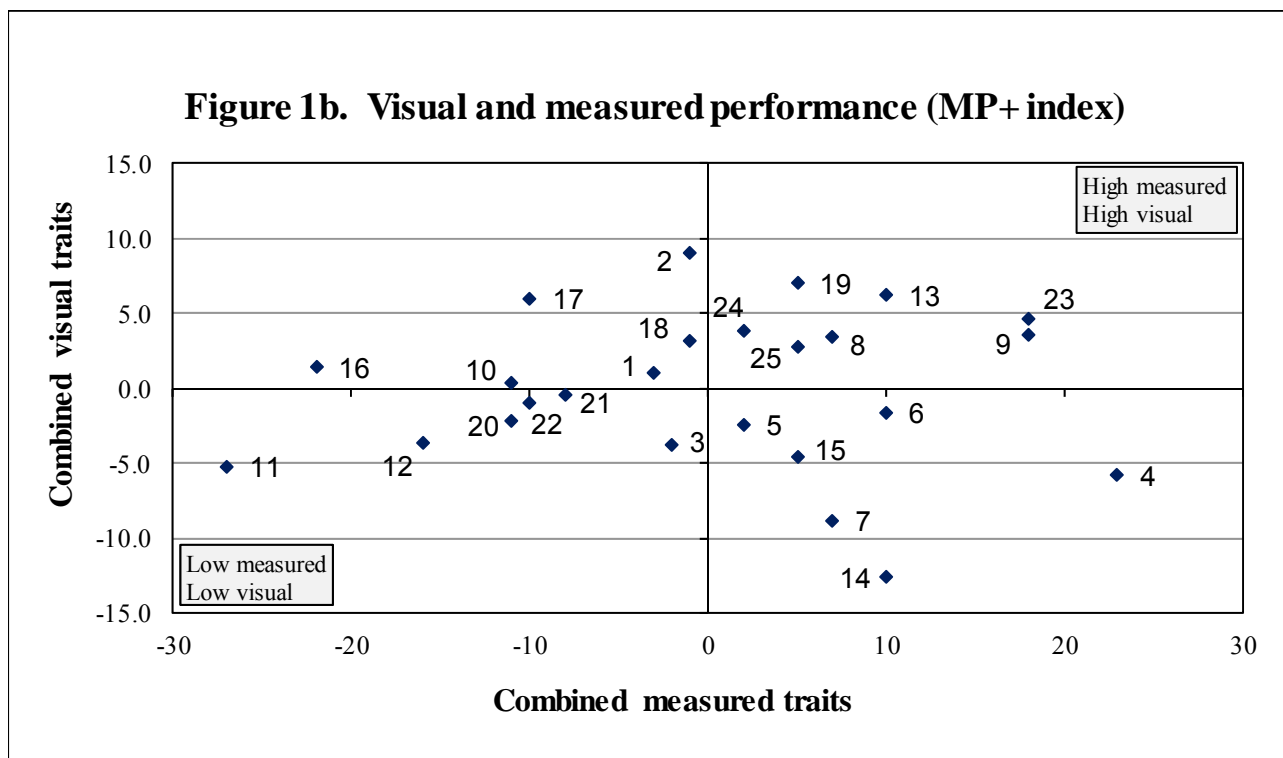


Figure 1c. Combined measured traits (FP+ index) and combined visually assessed traits for the site objective.

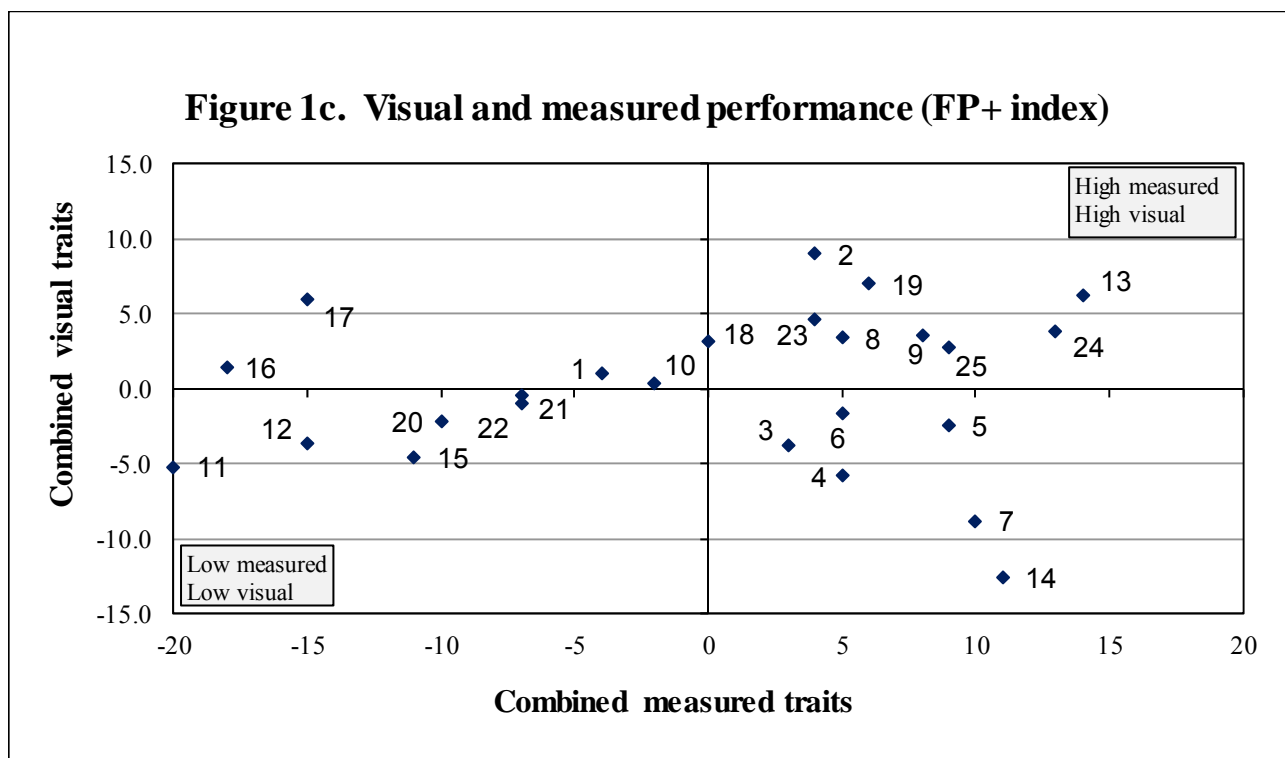
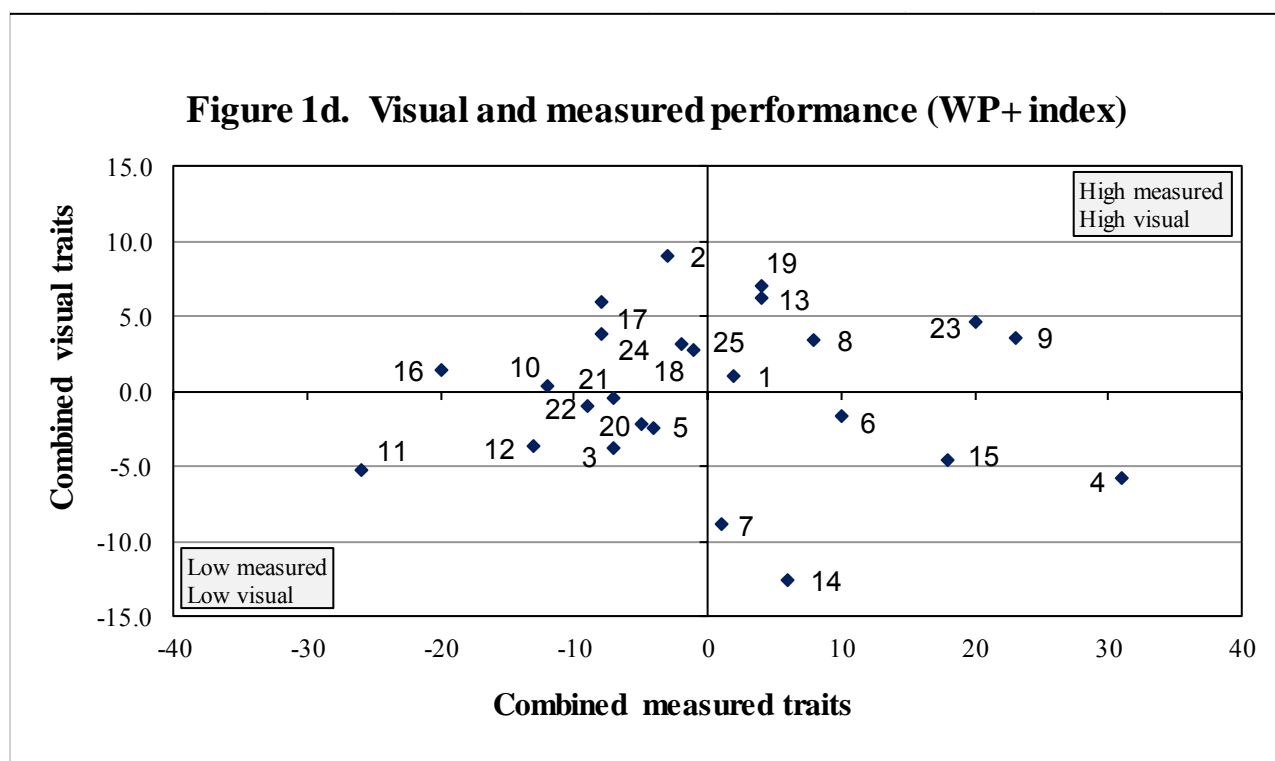
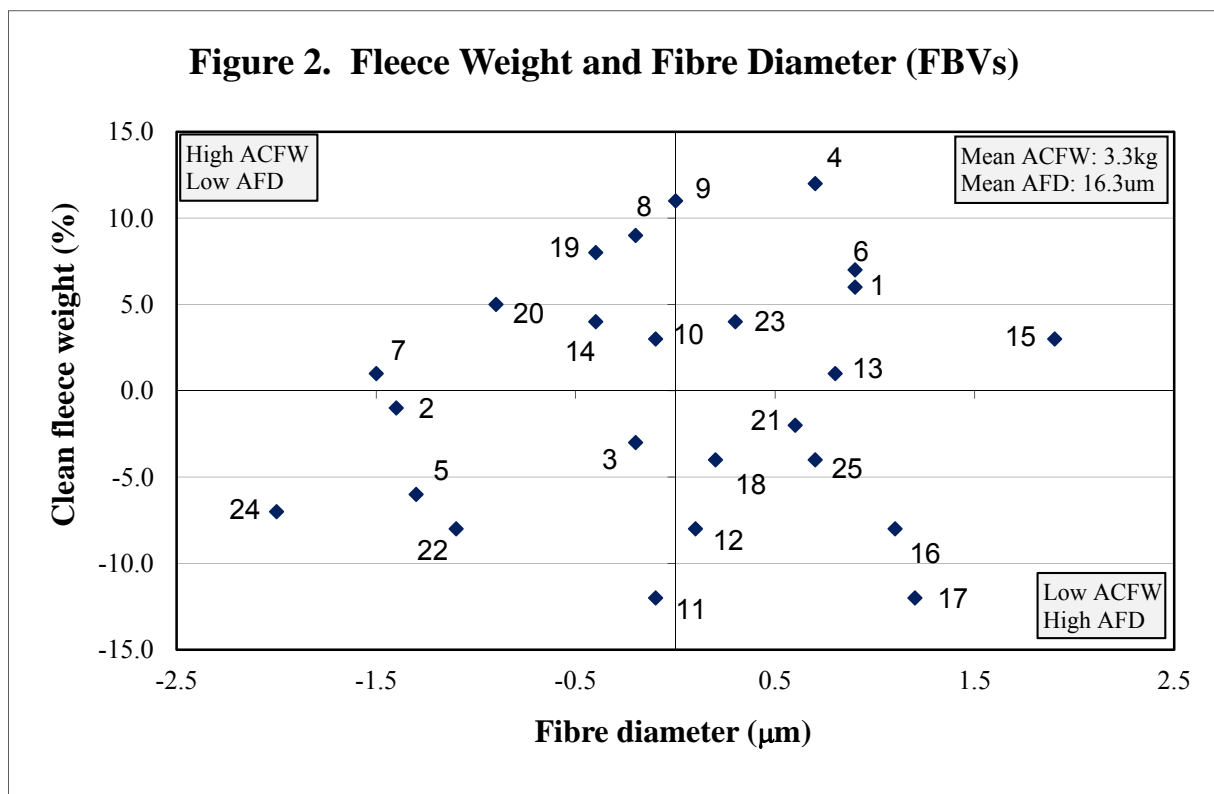


Figure 1d. Combined measured traits (WP+ index) and combined visually assessed traits for the site objective.



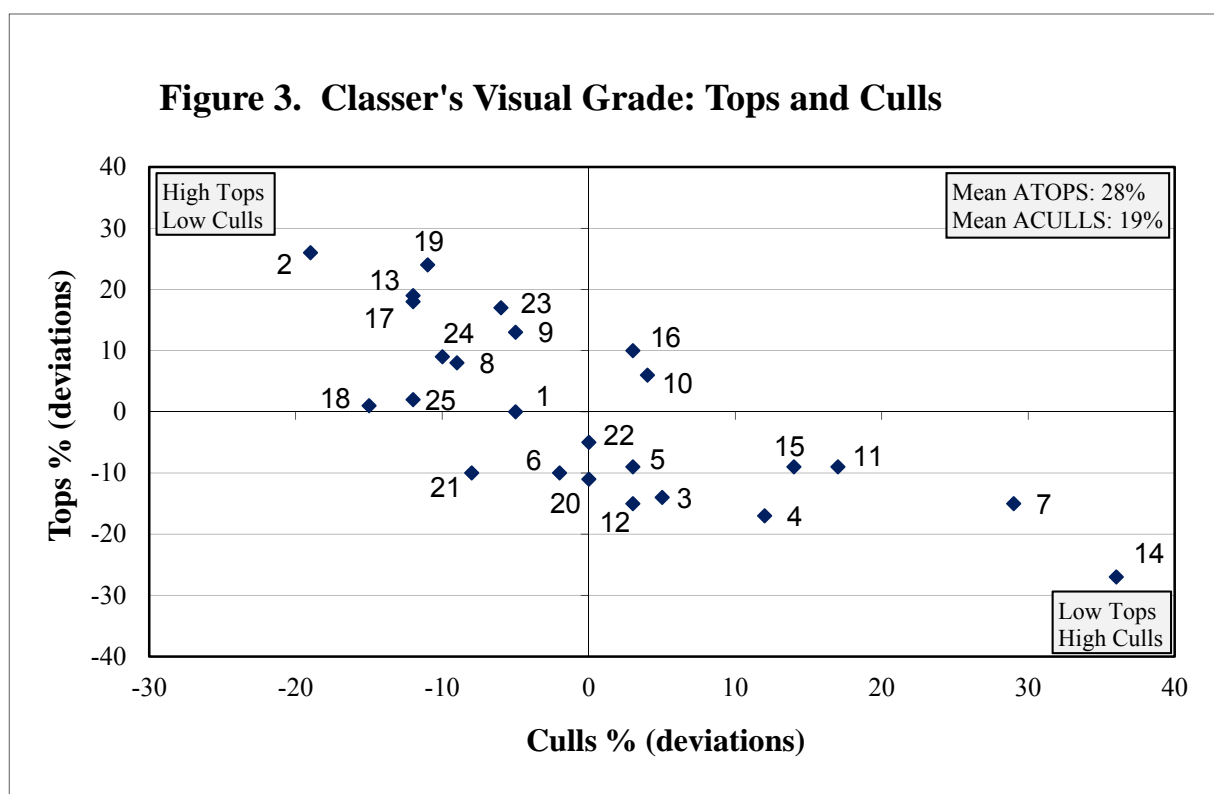
**Figure 2. Fleece weight and fibre diameter (FBVs)**

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.



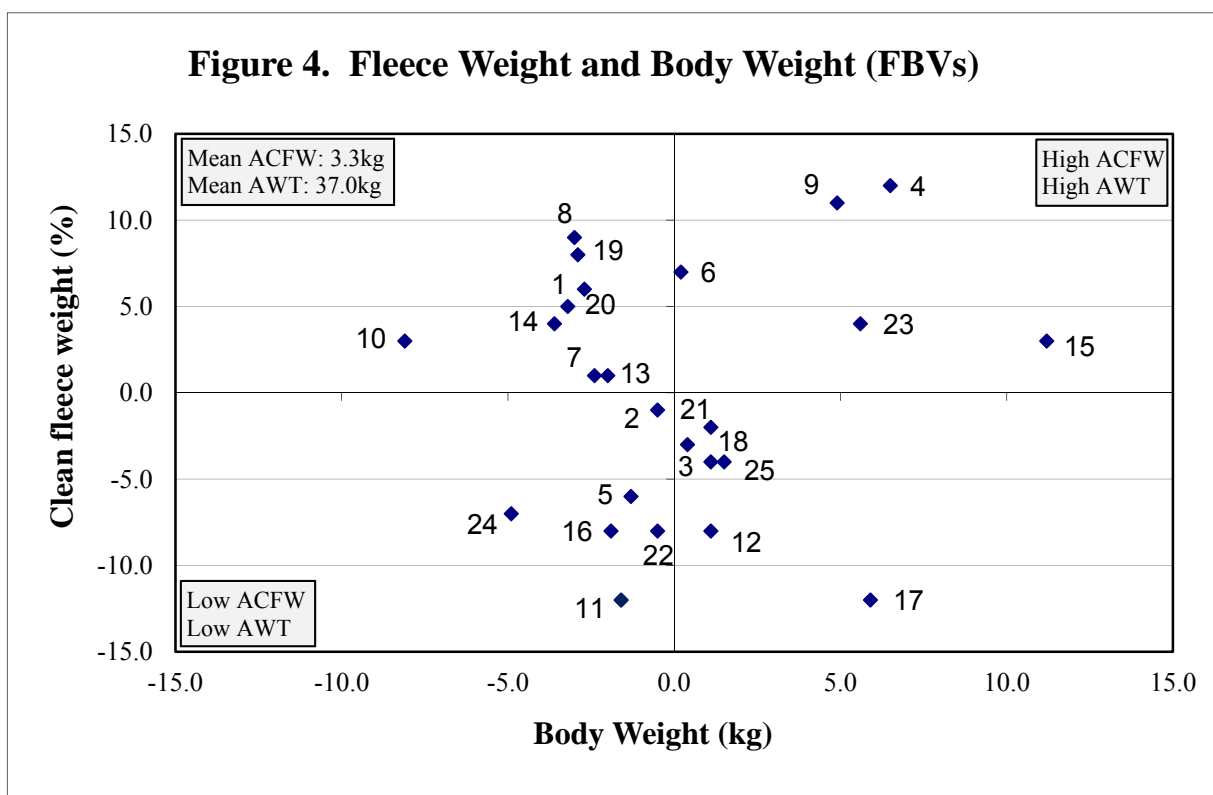
**Figure 3. Classer's Visual Grade - Tops and Culls**

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



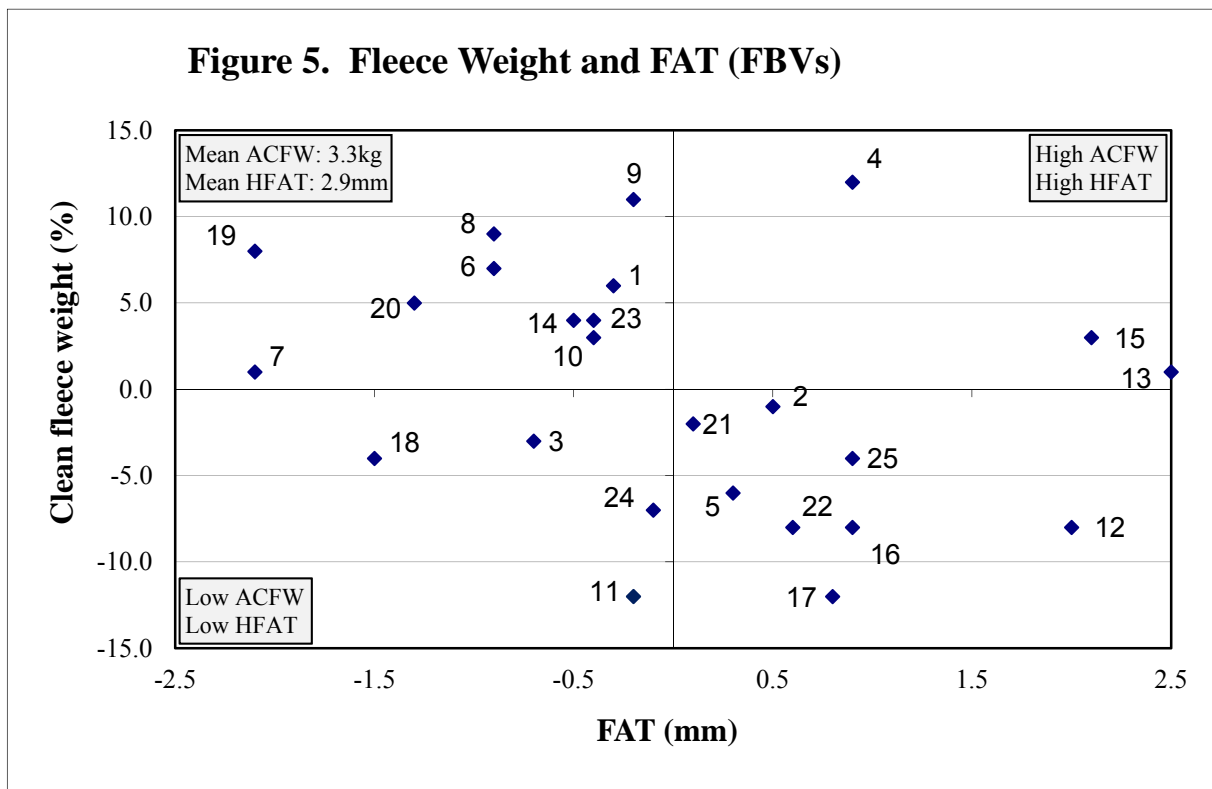
**Figure 4. Fleece weight and body weight (FBVs)**

The graph describes performance for fleece weight on the side axis and body weight on the bottom axis. Sires that are above average for fleece weight and above average for body weight are located in the top right hand quarter.



**Figure 5. Fleece weight and fat (FBVs)**

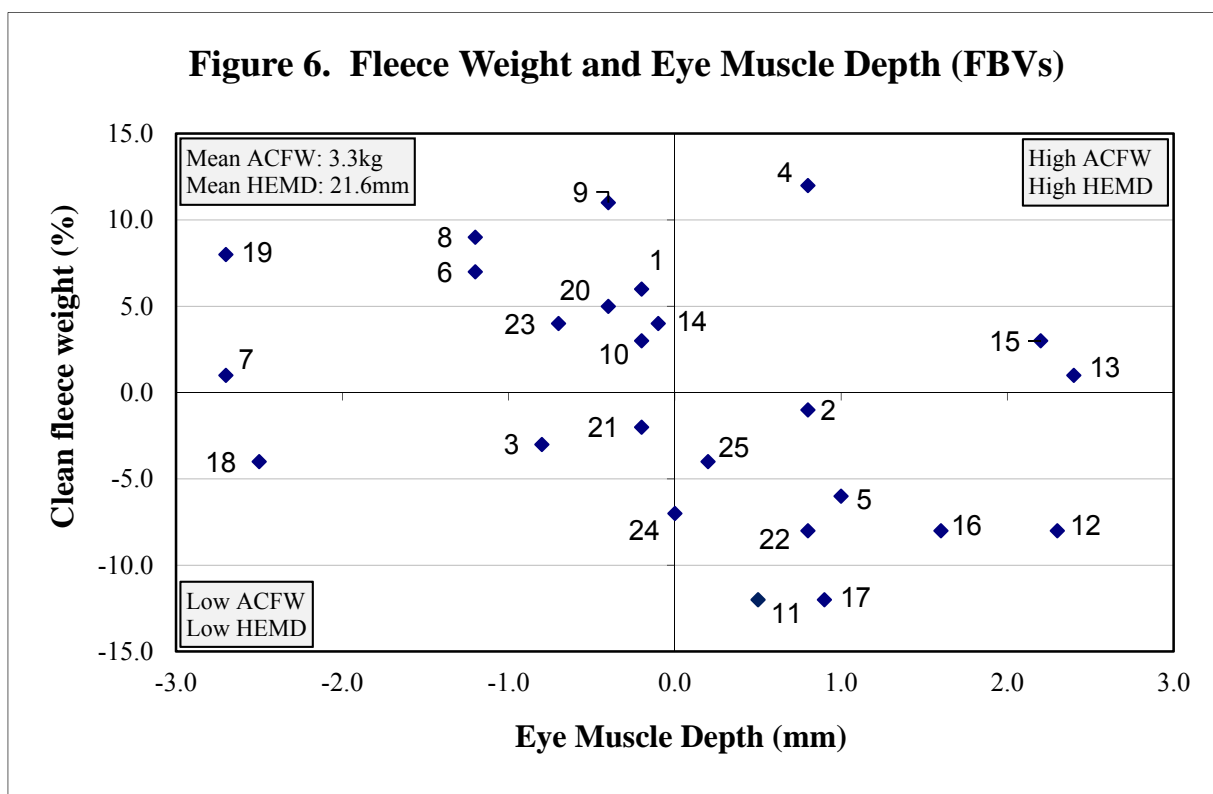
The graph describes performance for fleece weight on the side axis and fat depth on the bottom axis. Sires that are above average for fleece weight and above average for fat are located in the top right hand quarter.





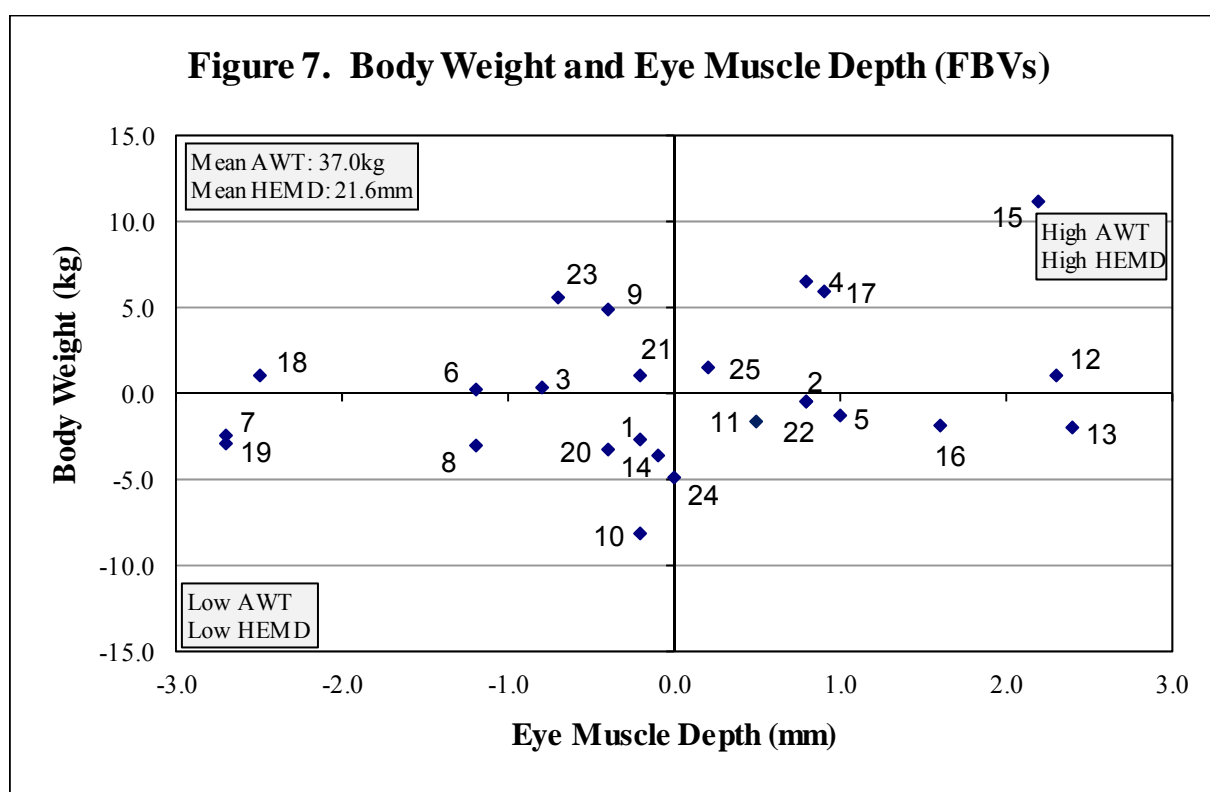
**Figure 6. Fleece weight by eye muscle depth (FBVs)**

The graph describes performance for fleece weight on the side axis and eye muscle depth on the bottom axis. Sires that are above average for fleece weight and above average for eye muscle depth are located in the top right hand quarter.



**Figure 7. Body weight by eye muscle depth (FBVs)**

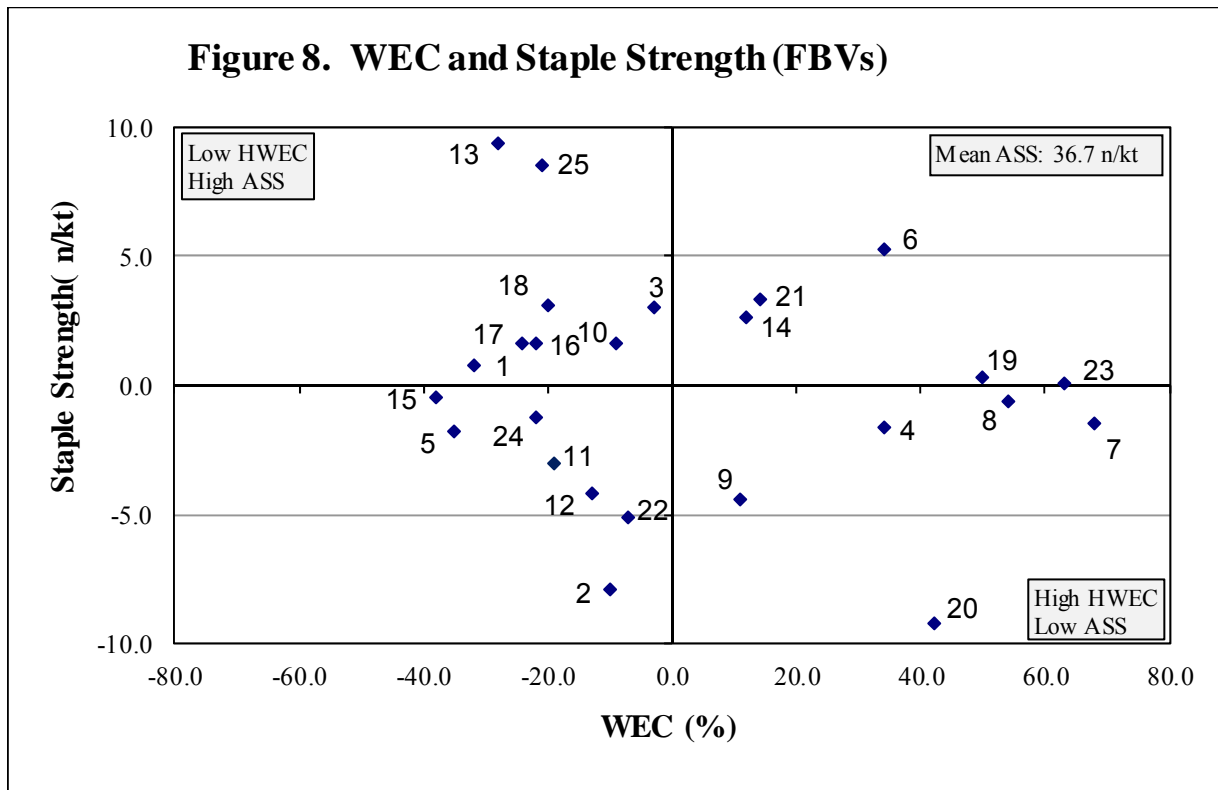
The graph describes performance for body weight on the side axis and eye muscle depth on the bottom axis. Sires that are above average for body weight and above average for eye muscle depth are located in the top right hand quarter.



**Figure 8. Summary Graphs – SS and WEC**

**Figure 8. Staple strength by worm egg count (FBVs)**

The graph describes performance for staple strength on the side axis and worm egg count on the bottom axis. Sires that are above average for staple strength and above average for worm egg count are located in the top left hand quarter.



## Understanding the Results

### Measured trait performance and Classer's Visual Grade – Tables 2 and 3

<b>Breeders flock, Sire number:</b>	Identity of the breeder's flock and the sire's number or name.
<b>Number of progeny:</b>	The number of progeny a sire had at the most recent measured analysis. Average number of progeny is included in Table 1.
<b>Flock Breeding Values:</b>	<p>Flock Breeding Values (FBVs) are Estimated Breeding Values (EBVs) calculated by Sheep Genetics for the sires 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 sires (in this case based on the performance of their progeny). A sire's progeny will express half of their sire's FBV. FBVs do not necessarily reflect the sire's 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.</p> <p>The highest performing sires for each trait (trait leaders) are highlighted by shading. Curvature is the possible exception when for many breeders the optimum score is in the middle of the range therefore trait leaders have not been highlighted.</p>
<b>Traits:</b> Abbreviation, trait and the (units reported)	<p>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).</p>
<b>Age at assessment:</b>	<p>W = Weaning - 42 to 120 days (6 weeks to 4 months of age).            E = Early Post Weaning - 120 to 210 days (4 to 7 months of age).            P = Post Weaning - 210 to 300 days (7 to 10 months of age).            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).</p>
<b>Classer's Visual Grade:</b>	<p>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. The percentage deviation from the average of Tops and Culls is presented in this report. Average percentage of Tops and Culls for the entire drop is included in Table 1.</p> <p>Page 8 provides more detail on Classer's Visual Grade and the site's Breeding Objective.</p>

Table 2. Major Measured Traits and Classer's Visual Grade

Sire Code	Breeders flock, Sire name	Number of Progeny	Flock Breeding Values (deviations)										Classer's Visual Grade <sup>1</sup>			
			GFW %		CFW %		FD µm		WT kg				Tops %		Culls %	
			Y <sup>^</sup>	A	Y	A	Y	A	W	P	Y	A	P	A	P	A
1	Billandri Poll, 130087	41	9	6	9	6	0.8	0.9	-0.1	-0.8	-2.4	-2.7	16	0	-3	-5
2	Bogo, 111424	50	-7	-1	-8	-1	-1.4	-1.4	-1.0	-1.6	-1.1	-0.5	-12	26	3	-19
3	Bundaleer Poll, 13V741	54	-6	-2	-9	-3	-0.3	-0.2	-0.1	0.6	-0.1	0.4	-7	-14	-7	5
4	Bundilla, 111265	37	13	9	15	12	0.9	0.7	2.6	4.6	7.3	6.5	28	-17	-8	12
5	Centre Plus Poll, 207316	44	-4	-4	-6	-6	-1.3	-1.3	-1.4	-2.0	-1.9	-1.3	-19	-9	22	3
6	Darriwell, 130941	49	5	6	7	7	0.7	0.9	1.0	0.8	-0.2	0.2	5	-10	14	-2
7	Glenpaen, 120042	49	2	4	-1	1	-1.5	-1.5	-0.6	-1.2	-2.1	-2.4	-12	-15	7	29
8	Greenfields Poll, 130599	48	7	8	9	9	-0.2	-0.2	-0.8	-1.4	-2.2	-3.0	-10	8	22	-9
9	Hazeldean, 11.43	56	7	9	9	11	-0.1	0.0	1.5	2.7	4.9	4.9	28	13	-13	-5
10	Kurra-Wirra, SR5681	48	-2	3	-1	3	-0.5	-0.1	-3.1	-5.8	-7.7	-8.1	-8	6	28	4
11	Leahcim Poll, 090918	59	-12	-13	-12	-12	-0.2	-0.1	-0.4	-1.3	-1.4	-1.6	-9	-9	1	17
12	Leahcim Poll, 123153	40	-10	-10	-9	-8	0.0	0.1	0.2	0.0	0.1	1.1	-4	-15	-5	3
13	Merinotech WA Poll, 100081	55	1	-1	2	1	1.0	0.8	-2.2	-2.6	-1.6	-2.0	-1	19	-9	-12
14	Mokanger, 120092	37	3	1	5	4	-0.4	-0.4	-0.6	-1.6	-2.1	-3.6	-28	-27	14	36
15	Moojepin, 100248	48	9	2	9	3	2.2	1.9	3.4	6.8	10.5	11.2	-17	-9	15	14
16	Mumblebone, 130389	29	-8	-7	-7	-8	1.1	1.1	-1.0	-1.7	-2.3	-1.9	-12	10	-5	3
17	Mumblebone, 130850	27	-4	-9	-5	-12	1.2	1.2	2.9	4.9	4.5	5.9	43	18	-28	-12
18	Nareeb Nareeb, 130380	45	1	0	1	-4	0.3	0.2	1.3	2.0	0.0	1.1	23	1	-11	-15
19	Nerstane, 130467	44	7	11	5	8	-0.6	-0.4	-1.1	-2.4	-2.1	-2.9	-8	24	3	-11
20	One Oak No. 2, R56	57	-1	4	-1	5	-1.1	-0.9	-1.2	-2.2	-2.7	-3.2	-5	-11	5	0
21	Roseville Park, 140019	34	-5	-1	-6	-2	0.6	0.6	-0.2	0.2	-0.2	1.1	-4	-10	-10	-8
22	The Mountain Dam, 11/ESA004	57	-4	-9	-3	-8	-0.4	-1.1	0.0	0.3	-0.1	-0.5	-2	-5	-15	0
23	Tuckwood Poll, 121021	48	9	4	10	4	0.4	0.3	2.9	4.6	5.9	5.6	4	17	-7	-6
24	Yalgoo, 120043	57	-6	-9	-6	-7	-1.9	-2.0	-1.2	-2.0	-3.0	-4.9	13	9	-11	-10
25	Yiddinga, 130374	49	-5	-3	-5	-4	0.7	0.7	-0.4	-0.2	0.7	1.5	-1	2	-5	-12

<sup>^</sup> W = Weaning (42 to 120 days); P = Post Weaning (210 to 300 days); Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older)

<sup>1</sup> Classer's Visual Grade is expressed as the percentage deviation of average Tops% and Culls%.

Table 3. Other Measured Traits

Sire Code	Breeders flock, Sire name	Number of progeny	Flock Breeding Values (deviations)												
			FDCV %		SL mm		SS N/ktex		CURV deg/mm		FAT mm		EMD mm		WEC %
			Y <sup>^</sup>	A	Y	A	Y	A	Y	A	Y	H	Y	H	H
1	Billandri Poll, 130087	41	0.6	0.2	1.9	2.8	0.0	0.8	-6.9	-6.7	-0.4	-0.3	-0.2	-0.2	-32
2	Bogo, 111424	50	0.4	0.8	-7.8	-6.2	-4.5	-7.9	3.2	1.8	0.0	0.5	0.4	0.8	-10
3	Bundaleer Poll, 13V741	54	-0.6	-0.8	-11.8	-8.5	0.5	3.0	5.6	3.9	-0.4	-0.7	-0.5	-0.8	-3
4	Bundilla, 111265	37	0.8	1.0	-0.7	-2.5	-2.8	-1.6	-0.1	0.3	1.0	0.9	0.8	0.8	34
5	Centre Plus Poll, 207316	44	-0.6	-0.7	0.3	-0.5	-1.4	-1.8	-0.9	0	-0.2	0.3	0.4	1.0	-35
6	Darriwell, 130941	49	0.7	0.4	-5.0	-6.6	4.4	5.3	-2.1	-1.2	-0.7	-0.9	-1.1	-1.2	34
7	Glenpaen, 120042	49	1.3	1.0	-9.4	-7.5	-1.9	-1.5	7.7	7.2	-1.6	-2.1	-2.4	-2.7	68
8	Greenfields Poll, 130599	48	2.1	2.0	-1.4	-0.2	-0.6	-0.6	-2.7	-3.6	-0.6	-0.9	-0.9	-1.2	54
9	Hazeldean, 11.43	56	0.5	0.5	5.0	5.4	-4.0	-4.4	-2.2	-3.6	0.0	-0.2	-0.3	-0.4	11
10	Kurra-Wirra, SR5681	48	1.9	1.3	-8.3	-4.5	-2.3	1.6	-1.2	-1.6	-0.6	-0.4	-0.6	-0.2	-9
11	Leahcim Poll, 090918	59	-0.1	-0.1	1.9	2.9	-2.8	-3.0	0.1	0.6	0.4	-0.2	0.8	0.5	-19
12	Leahcim Poll, 123153	40	-1.1	-1.1	4.4	5.0	-2.2	-4.2	-5.5	-5.4	1.4	2.0	1.8	2.3	-13
13	Merinotech WA Poll, 100081	55	-3.3	-2.2	10.3	6.3	12.3	9.4	1.0	2.1	1.5	2.5	1.8	2.4	-28
14	Mokanger, 120092	37	1.4	1.4	-13.7	-14.4	1.0	2.6	2.5	2.7	-0.1	-0.5	0.1	-0.1	12
15	Moojepin, 100248	48	-1.1	-0.7	25.1	21.2	-0.9	-0.5	-5.7	-4.4	1.7	2.1	2.1	2.2	-38
16	Mumblebone, 130389	29	-1.8	-1.1	5.4	3.2	4.3	1.6	-4.4	-3.7	0.4	0.9	1.1	1.6	-22
17	Mumblebone, 130850	27	-2.3	-2.3	9.3	7.2	4.2	1.6	0.7	2.3	0.5	0.8	0.8	0.9	-24
18	Nareeb Nareeb, 130380	45	-0.1	-0.5	-2.6	-4.2	2.1	3.1	0.2	1.8	-1.5	-1.5	-2.3	-2.5	-20
19	Nerstane, 130467	44	0.7	0.5	2.8	6.0	-2.6	0.3	-0.6	-2.7	-1.4	-2.1	-2.2	-2.7	50
20	One Oak No. 2, R56	57	3.6	3.1	-12.5	-9.1	-10.3	-9.2	5.1	3.1	-0.8	-1.3	-0.2	-0.4	42
21	Roseville Park, 140019	34	0.3	0.3	-0.5	-1.6	1.8	3.3	0.6	1.8	-0.1	0.1	-0.3	-0.2	14
22	The Mountain Dam, 11/ESA004	57	0.5	0.9	4.4	0.5	-3.6	-5.1	-0.1	1.2	0.5	0.6	1.0	0.8	-7
23	Tuckwood Poll, 121021	48	-0.6	-0.6	11.1	9.4	1.6	0.1	-1.8	-1.8	0.0	-0.4	-0.3	-0.7	63
24	Yalgoo, 120043	57	-0.4	-0.7	-7.1	-3.4	-1.8	-1.2	4.2	3	0.3	-0.1	0.4	0.0	-22
25	Yiddinga, 130374	49	-3.0	-2.5	-1.2	-0.8	9.4	8.5	3.9	3.5	0.6	0.9	0.1	0.2	-21

<sup>^</sup> W = Weaning (42 to 120 days); P = Post Weaning (210 to 300 days); Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older).

## Understanding the results

### Visual trait performance – Tables 4a, 4b, 4c, 4d

The following description of trait scores is a summary of the detailed word and diagrammatical description of these scores in Version 2 (2013) of the Visual Sheep Scores booklet that is available free from AWI or at [www.merinosuperiorsires.com.au](http://www.merinosuperiorsires.com.au)

A deviation from the average trait score for all progeny is reported as well as the percentage of the sire's progeny recorded for each trait.

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■ 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) to <b>5</b> (undefined and large variation).
■ Dust penetration:	Degree of dust penetration from <b>1</b> (only tip <6%) to <b>5</b> (71 to 100% of staple).
■ Staple weathering:	The deterioration due to light and water from <b>1</b> (least, <6% of staple) to <b>5</b> (most, 71 to 100%) reflect the depth and degree of deterioration.
■ Staple structure:	The size and diameter of each staple from <b>1</b> (<6mm) to <b>5</b> (>30 mm).
<hr/>	
■ 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> (71 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> (71 to 100% pigmented area on one or more bare skin sites, <b>and/or</b> 71 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.
<hr/>	
■ 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 straight) to <b>5</b> (very angulated).
■ Body wrinkle:	The degree of body wrinkle from <b>1</b> (no wrinkle) to <b>5</b> (extensive wrinkle).
■ Jaw:	The alignment of the lower jaw and its teeth relative to the top jaw from <b>1</b> (very well aligned) to <b>5</b> (heavily undershot or overshot).
■ Back/Shoulder:	Conformation of the back and shoulder from <b>1</b> (very square) to <b>5</b> (very dipped or high).
<hr/>	
■ 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).
■ Urine:	Degree of urine stained wool in the breech area, including the hind legs from <b>1</b> (nil) to <b>5</b> (extensive).

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Table 4a. Visual trait assessments – Wool Quality

Visually assessed traits reported were scored at their latest assessment with the exception of pigmentation which was scored at marking (Spot updated on an ongoing basis) and breech traits recorded at marking time (or later in unmulesed flocks with the exception of Dag and Urine). Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a sire's progeny assessed for each score is also reported. No adjustments are made to the data to improve the accuracy of the results as is the case with sire means or breeding values. For the majority of breeder's objectives a negative deviation would be considered favourable and the larger the deviation the better.

Breeder's flock, Sire name	Wool Quality - Adult																							
	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
Billandri Poll, 130087	0.2	40	33	7	13	7	0.4	0	27	73	0	0	0.0	0	33	53	14	0	0.0	13	40	40	7	0
Bogo, 111424	-0.9	96	4	0	0	0	-0.5	29	58	13	0	0	-0.3	4	46	50	0	0	-0.2	8	67	25	0	0
Bundaleer Poll, 13V741	0.0	55	14	14	14	3	0.3	7	31	55	7	0	-0.1	0	34	62	4	0	-0.2	21	41	38	0	0
Bundilla, 111265	0.6	37	21	16	5	21	-0.1	5	63	32	0	0	0.2	0	16	68	16	0	0.2	0	53	37	10	0
Centre Plus Poll, 207316	0.4	32	23	27	14	4	0.1	5	45	50	0	0	-0.4	9	50	36	5	0	-0.2	9	68	23	0	0
Darriwell, 130941	0.2	39	22	28	11	0	0.1	0	50	50	0	0	0.2	0	22	61	17	0	0.4	0	22	78	0	0
Glenpaen, 120042	1.0	20	20	20	32	8	0.2	12	28	56	4	0	-0.2	4	40	52	4	0	0.1	4	52	36	8	0
Greenfields Poll, 130599	-0.1	45	35	10	10	0	0.3	5	30	60	5	0	0.0	10	10	75	5	0	-0.1	5	60	35	0	0
Hazeldean, 11.43	0.5	19	48	15	11	7	0.1	0	52	48	0	0	-0.2	0	44	52	4	0	-0.2	11	59	30	0	0
Kurra-Wirra, SR5681	-0.3	62	14	19	5	0	-0.2	15	52	33	0	0	-0.1	5	38	43	14	0	-0.2	14	57	29	0	0
Leahcim Poll, 090918	0.5	33	22	19	19	7	0.3	0	30	70	0	0	0.1	0	33	52	15	0	0.1	4	48	44	4	0
Leahcim Poll, 123153	0.1	41	23	32	4	0	0.1	5	50	45	0	0	-0.1	0	45	45	10	0	0.1	14	32	50	4	0
Merinotech WA Poll, 100081	-0.5	73	19	0	8	0	-0.2	12	65	23	0	0	0.2	0	23	58	19	0	0.0	8	50	42	0	0
Mokanger, 120092	0.7	22	22	28	28	0	-0.1	11	50	39	0	0	0.2	0	16	67	17	0	0.3	0	33	61	6	0
Moojepin, 100248	0.2	52	19	10	5	14	0.5	0	14	81	5	0	0.7	0	4	48	48	0	0.5	0	29	57	14	0
Mumblebone, 130389	0.2	31	54	0	7	8	0.0	0	62	38	0	0	-0.1	0	46	46	8	0	0.1	0	54	46	0	0
Mumblebone, 130850	-0.5	62	31	7	0	0	0.0	16	38	46	0	0	-0.2	0	46	54	0	0	0.1	0	54	46	0	0
Nareeb Nareeb, 130380	-0.5	71	17	12	0	0	-0.1	0	79	21	0	0	0.1	5	12	79	4	0	-0.3	8	75	17	0	0
Nerstane, 130467	-0.7	80	20	0	0	0	-0.2	4	76	20	0	0	-0.2	8	32	52	8	0	-0.3	12	64	24	0	0
One Oak No. 2, R56	0.4	19	39	36	6	0	0.2	0	44	56	0	0	0.2	0	25	56	19	0	0.0	3	58	36	3	0
Roseville Park, 140019	0.2	35	35	18	6	6	0.1	6	47	47	0	0	-0.2	0	41	59	0	0	-0.3	11	65	24	0	0
The Mountain Dam, 11/ESA004	-0.2	55	26	13	3	3	0.0	13	39	48	0	0	0.2	4	19	61	16	0	0.0	0	65	35	0	0
Tuckwood Poll, 121021	-0.5	76	17	4	0	3	-0.4	21	62	17	0	0	0.0	11	24	48	17	0	0.3	0	38	59	3	0
Yalgoo, 120043	-0.7	80	17	3	0	0	-0.6	37	50	13	0	0	-0.4	10	43	43	4	0	-0.3	13	67	17	3	0
Yiddinga, 130374	-0.4	59	26	15	0	0	-0.2	11	63	26	0	0	0.2	0	22	56	22	0	0.2	0	41	59	0	0
<b>Average performance</b>	<b>1.9</b>	<b>49</b>	<b>25</b>	<b>14</b>	<b>8</b>	<b>4</b>	<b>2.4</b>	<b>8</b>	<b>48</b>	<b>42</b>	<b>2</b>	<b>0</b>	<b>2.8</b>	<b>3</b>	<b>31</b>	<b>55</b>	<b>11</b>	<b>0</b>	<b>2.4</b>	<b>6</b>	<b>52</b>	<b>39</b>	<b>3</b>	<b>0</b>

**Table 4b. Visual trait assessments – Wool Quality and Pigmentation**

For the majority of breeder’s objectives a negative deviation for wool quality traits would be considered favourable and the larger the deviation the better. Staple Structure is the possible exception when for many breeders the optimum score is in the middle of the range therefore trait leaders have not been highlighted. Four pigmentation traits are reported. 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 progeny for each sire that a score 5 is recorded, are reported for Recessive black and Random spot.

Breeders flock, Sire name	Wool Quality - Adult											Pigmentation - Marking														
	Staple Weathering					Staple Structure						Fibre pigmentation					Non-fibre pigmentation					Black	Spot			
	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
Billandri Poll, 130087	-0.1	26	47	27	0	0	0.1	0	60	20	20	0	0.0	98	2	0	0	0	0.1	33	61	6	0	0	0	2
Bogo, 111424	-0.2	25	62	13	0	0	-0.3	16	46	38	0	0	0.0	94	4	0	2	0	0.0	43	48	9	0	0	0	0
Bundaleer Poll, 13V741	-0.2	34	41	25	0	0	-0.1	17	38	38	7	0	0.0	97	1	2	0	0	-0.2	59	41	0	0	0	0	0
Bundilla, 111265	0.1	11	63	26	0	0	0.3	0	37	47	16	0	0.0	97	0	0	0	3	0.3	21	67	12	0	0	0	5
Centre Plus Poll, 207316	-0.4	41	50	9	0	0	-0.6	27	55	18	0	0	-0.1	100	0	0	0	0	-0.1	43	54	3	0	0	0	0
Darriwell, 130941	0.5	6	44	39	11	0	0.2	0	33	61	6	0	-0.1	100	0	0	0	0	0.3	26	53	21	0	0	0	0
Glenpaen, 120042	0.1	16	48	36	0	0	0.0	4	40	56	0	0	-0.1	100	0	0	0	0	-0.3	69	30	1	0	0	0	2
Greenfields Poll, 130599	-0.1	30	45	25	0	0	0.1	5	40	45	10	0	0.0	96	2	2	0	0	-0.3	65	35	0	0	0	0	0
Hazeldean, 11.43	-0.2	30	52	18	0	0	-0.3	15	48	37	0	0	0.0	97	3	0	0	0	-0.1	48	48	4	0	0	0	0
Kurra-Wirra, SR5681	-0.2	29	52	19	0	0	-0.2	10	57	29	4	0	0.0	95	4	1	0	0	-0.1	51	40	9	0	0	0	4
Leahcim Poll, 090918	0.2	22	30	48	0	0	-0.2	22	33	33	12	0	0.0	97	1	2	0	0	-0.2	62	35	1	2	0	0	0
Leahcim Poll, 123153	0.0	32	27	41	0	0	-0.2	18	41	32	9	0	0.0	93	5	2	0	0	0.0	45	45	10	0	0	0	0
Merinotech WA Poll, 100081	0.0	23	50	27	0	0	0.1	11	31	46	12	0	-0.1	100	0	0	0	0	-0.3	65	35	0	0	0	0	2
Mokanger, 120092	0.4	0	61	33	6	0	0.5	0	22	61	17	0	0.3	79	16	2	0	3	0.4	21	58	18	3	0	0	0
Moojepin, 100248	0.4	4	48	43	5	0	0.8	4	5	48	43	0	0.1	90	8	0	2	0	-0.1	55	39	6	0	0	0	4
Mumblebone, 130389	0.2	23	31	46	0	0	-0.2	7	62	23	8	0	0.1	91	6	0	0	3	0.3	28	50	19	3	0	0	0
Mumblebone, 130850	0.1	8	69	23	0	0	-0.2	16	54	15	15	0	0.0	96	4	0	0	0	0.1	42	46	12	0	0	0	0
Nareeb Nareeb, 130380	-0.3	38	50	12	0	0	-0.1	8	46	42	4	0	0.0	96	2	2	0	0	0.3	25	56	19	0	0	0	2
Nerstane, 130467	-0.4	32	68	0	0	0	-0.3	8	68	24	0	0	0.0	94	6	0	0	0	0.3	17	68	15	0	0	0	0
One Oak No. 2, R56	0.1	8	67	25	0	0	0.2	0	39	56	5	0	0.0	98	2	0	0	0	-0.3	63	37	0	0	0	0	2
Roseville Park, 140019	0.0	18	53	29	0	0	0.2	12	29	35	24	0	-0.1	100	0	0	0	0	0.2	23	69	8	0	0	0	0
The Mountain Dam, 11/ESA004	0.1	6	68	26	0	0	-0.1	13	45	32	10	0	-0.1	100	0	0	0	0	0.0	44	47	7	2	0	0	0
Tuckwood Poll, 121021	0.1	14	52	34	0	0	0.2	7	31	45	17	0	-0.1	100	0	0	0	0	-0.3	61	39	0	0	0	0	0
Yalgoo, 120043	-0.2	33	53	10	4	0	-0.2	17	50	23	10	0	-0.1	100	0	0	0	0	-0.4	78	22	0	0	0	0	0
Yiddinga, 130374	0.1	11	56	33	0	0	0.1	3	41	52	4	0	0.0	96	4	0	0	0	0.3	10	84	6	0	0	0	0
<b>Average performance</b>	<b>2.1</b>	<b>21</b>	<b>51</b>	<b>27</b>	<b>1</b>	<b>0</b>	<b>2.5</b>	<b>10</b>	<b>42</b>	<b>38</b>	<b>10</b>	<b>0</b>	<b>1.1</b>	<b>96</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1.6</b>	<b>44</b>	<b>48</b>	<b>8</b>	<b>0</b>	<b>0</b>		



**Table 4c. Visual trait assessments – Conformation**

Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a sire’s progeny assessed for each score is also reported. No adjustments are made to the data to improve the accuracy of the results as is the case with sire means or breeding values.

For the majority of breeder’s objectives a negative deviation would be considered favourable and the larger the deviation the better. Face cover is the possible exception when for many breeders the optimum score is in the middle of the range therefore trait leaders have not been highlighted.

Breeders flock, Sire name	Conformation - Adult																													
	Jaw					Legs and Feet					Shoulder and 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	Dev	1	2	3	4	5
Billandri Poll, 130087	0.0	100	0	0	0	0	0.1	0	60	40	0	0	0.1	53	40	7	0	0	0.1	0	13	87	0	0	0.2	7	60	33	0	0
Bogo, 111424	0.0	100	0	0	0	0	-0.1	4	71	25	0	0	-0.1	71	29	0	0	0	0.1	0	21	79	0	0	0.2	9	58	33	0	0
Bundaleer Poll, 13V741	0.0	100	0	0	0	0	-0.1	0	76	24	0	0	-0.1	69	31	0	0	0	0.1	0	14	86	0	0	0.2	14	41	45	0	0
Bundilla, 111265	0.0	100	0	0	0	0	0.0	0	68	32	0	0	-0.1	63	37	0	0	0	0.2	0	11	89	0	0	0.0	11	68	21	0	0
Centre Plus Poll, 207316	0.0	95	5	0	0	0	0.0	0	64	36	0	0	-0.2	77	23	0	0	0	-0.4	4	55	41	0	0	0.3	4	55	36	5	0
Darriwell, 130941	0.0	94	6	0	0	0	0.0	0	67	33	0	0	0.4	33	56	11	0	0	0.3	0	5	89	6	0	0.5	0	53	35	12	0
Glenpaen, 120042	0.0	96	4	0	0	0	0.0	0	72	28	0	0	0.2	48	44	8	0	0	0.3	0	4	88	8	0	0.4	4	56	28	12	0
Greenfields Poll, 130599	0.0	100	0	0	0	0	0.0	5	60	35	0	0	0.3	35	60	5	0	0	0.1	0	15	85	0	0	0.0	20	55	20	5	0
Hazeldean, 11.43	0.0	100	0	0	0	0	-0.1	0	78	22	0	0	-0.1	63	37	0	0	0	-0.2	0	44	56	0	0	0.3	7	56	30	7	0
Kurra-Wirra, SR5681	0.0	100	0	0	0	0	0.5	0	19	81	0	0	0.3	24	76	0	0	0	0.1	0	19	81	0	0	0.3	0	62	38	0	0
Leahcim Poll, 090918	0.0	100	0	0	0	0	0.0	0	70	26	4	0	-0.2	74	26	0	0	0	-0.2	0	48	52	0	0	-0.9	85	15	0	0	0
Leahcim Poll, 123153	0.0	100	0	0	0	0	0.2	0	50	50	0	0	-0.1	68	27	5	0	0	-0.3	0	59	41	0	0	-0.8	77	23	0	0	0
Merinotech WA Poll, 100081	0.0	100	0	0	0	0	0.1	0	62	35	3	0	-0.2	80	20	0	0	0	0.0	0	31	69	0	0	0.1	20	44	32	4	0
Mokanger, 120092	0.0	100	0	0	0	0	-0.1	0	83	17	0	0	0.0	59	41	0	0	0	0.2	0	11	89	0	0	0.8	0	29	53	18	0
Moojepin, 100248	0.0	100	0	0	0	0	-0.3	0	95	5	0	0	-0.2	81	19	0	0	0	-0.3	5	52	43	0	0	-0.7	62	38	0	0	0
Mumblebone, 130389	0.0	100	0	0	0	0	0.1	0	62	38	0	0	0.0	69	23	8	0	0	0.0	0	31	69	0	0	-0.8	69	31	0	0	0
Mumblebone, 130850	0.0	100	0	0	0	0	-0.2	0	85	15	0	0	-0.1	77	15	8	0	0	-0.4	0	69	31	0	0	-0.8	77	23	0	0	0
Nareeb Nareeb, 130380	0.0	100	0	0	0	0	-0.1	0	83	17	0	0	0.1	58	29	13	0	0	0.0	0	29	71	0	0	-0.1	29	50	17	4	0
Nerstane, 130467	0.0	96	4	0	0	0	0.0	0	64	36	0	0	0.4	28	64	8	0	0	0.2	0	8	92	0	0	0.5	4	40	52	4	0
One Oak No. 2, R56	0.0	100	0	0	0	0	-0.1	6	69	25	0	0	0.2	53	36	5	6	0	0.3	0	3	94	3	0	0.7	0	42	47	8	3
Roseville Park, 140019	0.0	100	0	0	0	0	0.3	0	41	59	0	0	-0.2	76	24	0	0	0	0.0	0	29	71	0	0	0.1	18	53	24	5	0
The Mountain Dam, 11/ESA004	0.0	97	3	0	0	0	0.1	0	58	42	0	0	0.0	68	23	6	3	0	0.2	0	13	84	3	0	-0.2	35	48	13	4	0
Tuckwood Poll, 121021	0.0	100	0	0	0	0	0.0	0	66	34	0	0	0.0	66	28	6	0	0	-0.1	0	34	66	0	0	-0.4	34	62	4	0	0
Yalgoo, 120043	0.0	100	0	0	0	0	-0.2	3	80	17	0	0	-0.1	69	28	3	0	0	-0.1	0	33	67	0	0	0.3	3	59	38	0	0
Yiddinga, 130374	0.0	100	0	0	0	0	-0.1	4	74	22	0	0	-0.3	89	11	0	0	0	0.0	0	30	70	0	0	-0.2	33	48	19	0	0
<b>Average performance</b>	<b>1.0</b>	<b>99</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2.3</b>	<b>1</b>	<b>67</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>1.4</b>	<b>62</b>	<b>34</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>2.7</b>	<b>0</b>	<b>27</b>	<b>72</b>	<b>1</b>	<b>0</b>	<b>2.1</b>	<b>25</b>	<b>47</b>	<b>25</b>	<b>3</b>	<b>0</b>

Table 4d. Visual trait assessments – Breech

Traits are reported as a deviation (Dev) from the average trait score for all progeny. The percentage of a sire’s progeny assessed for each score is also reported. No adjustments are made to the data to improve the accuracy of the results as is the case with sire means or breeding values.

For the majority of breeder’s objectives a negative deviation would be considered favourable and the larger the deviation the better.

Breeders flock, Sire name	Breech Visual Traits																													
	Breech Cover <i>Marking</i>						Breech Wrinkle <i>Marking</i>					Breech Cover <i>Post Weaning</i>					Breech Wrinkle <i>Post Weaning</i>					Dag <i>Post Weaning</i>								
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5
Billandri Poll, 130087	0.0	0	12	60	28	0	0.2	6	42	40	12	0	0.0	0	17	65	18	0	0.1	0	53	41	6	0	-0.3	81	19	0	0	0
Bogo, 111424	-0.1	0	19	57	22	2	0.0	11	43	41	5	0	-0.1	0	21	62	17	0	-0.1	0	67	33	0	0	-0.1	64	28	8	0	0
Bundaleer Poll, 13V741	-0.3	7	24	52	17	0	-0.2	16	53	24	5	2	0.2	0	18	48	34	0	0.1	4	48	48	0	0	0.3	45	31	21	3	0
Bundilla, 111265	0.0	3	15	55	25	2	0.2	5	42	38	12	3	-0.1	0	25	60	15	0	0.1	5	50	40	5	0	-0.3	75	25	0	0	0
Centre Plus Poll, 207316	-0.3	5	30	41	24	0	-0.2	11	59	24	6	0	-0.2	0	35	52	13	0	0.3	5	39	43	13	0	-0.2	70	26	4	0	0
Darriwell, 130941	0.1	0	8	62	26	4	0.2	11	30	43	13	3	0.2	0	21	37	42	0	0.3	0	42	47	11	0	-0.3	79	16	5	0	0
Glenpaen, 120042	0.2	0	9	54	31	6	0.6	1	28	46	19	6	0.2	0	23	31	46	0	0.4	0	35	46	19	0	0.0	65	27	4	0	4
Greenfields Poll, 130599	0.0	0	14	59	25	2	0.0	16	41	34	7	2	-0.1	8	9	61	22	0	0.1	5	43	48	4	0	0.4	41	41	0	18	0
Hazeldean, 11.43	0.1	0	19	45	32	4	0.4	1	31	55	13	0	0.1	0	15	63	22	0	0.2	3	41	52	4	0	-0.1	69	23	8	0	0
Kurra-Wirra, SR5681	0.1	0	14	49	33	4	0.5	2	28	42	28	0	0.1	0	18	52	30	0	0.2	0	48	48	4	0	-0.4	88	12	0	0	0
Leahcim Poll, 090918	-0.4	3	34	48	15	0	-0.8	46	46	8	0	0	-0.2	4	33	44	19	0	-0.6	22	74	4	0	0	-0.3	86	11	3	0	0
Leahcim Poll, 123153	0.0	4	16	45	30	5	-0.5	30	50	20	0	0	-0.1	0	30	52	18	0	-0.6	30	61	9	0	0	0.3	45	32	23	0	0
Merinotech WA Poll, 100081	-0.2	5	26	46	20	3	-0.1	15	44	33	8	0	0.1	0	11	62	27	0	0.1	0	46	54	0	0	0.3	38	42	15	5	0
Mokanger, 120092	0.3	0	2	50	45	3	0.5	3	29	39	29	0	0.1	0	16	58	26	0	0.4	0	26	63	11	0	0.7	30	30	30	10	0
Moojepin, 100248	-0.4	4	30	50	16	0	-0.6	32	52	16	0	0	-0.4	0	43	52	5	0	-0.5	14	86	0	0	0	-0.4	86	14	0	0	0
Mumblebone, 130389	0.2	0	9	53	34	4	-0.1	16	47	31	6	0	-0.1	0	31	46	23	0	0.0	0	62	38	0	0	-0.2	69	31	0	0	0
Mumblebone, 130850	-0.3	0	33	52	15	0	-0.9	52	44	4	0	0	-0.5	7	40	53	0	0	-1.1	73	27	0	0	0	-0.3	80	20	0	0	0
Nareeb Nareeb, 130380	0.0	0	16	51	31	2	-0.2	18	41	37	4	0	0.0	0	28	44	28	0	0.3	0	36	60	4	0	0.0	60	32	8	0	0
Nerstane, 130467	0.5	0	8	32	47	13	0.6	3	25	40	28	4	0.6	0	0	46	50	4	0.5	0	19	73	8	0	0.4	42	35	15	8	0
One Oak No. 2, R56	0.7	1	3	29	48	19	1.0	0	14	41	37	8	0.1	0	16	56	28	0	0.3	0	39	53	8	0	-0.1	72	19	6	3	0
Roseville Park, 140019	-0.1	3	11	64	22	0	-0.4	31	42	25	2	0	0.0	0	16	67	17	0	0.2	6	39	44	11	0	-0.1	72	22	0	6	0
The Mountain Dam, 11/ESA004	0.1	2	16	44	36	2	-0.2	21	43	33	3	0	0.0	0	22	50	28	0	-0.3	9	72	19	0	0	-0.1	65	32	0	3	0
Tuckwood Poll, 121021	-0.1	2	31	37	22	8	-0.1	20	37	35	8	0	0.2	0	14	55	28	3	-0.3	0	86	14	0	0	0.1	59	26	7	4	4
Yalgoo, 120043	0.1	2	10	56	27	5	0.3	10	24	46	20	0	0.1	0	13	58	29	0	0.2	0	45	48	7	0	0.2	50	33	10	7	0
Yiddinga, 130374	-0.1	0	19	54	27	0	-0.3	17	52	31	0	0	-0.1	0	22	59	19	0	-0.2	14	56	30	0	0	0.5	37	33	22	4	4
<b>Average performance</b>	<b>3.1</b>	<b>2</b>	<b>17</b>	<b>50</b>	<b>28</b>	<b>3</b>	<b>2.4</b>	<b>16</b>	<b>39</b>	<b>33</b>	<b>11</b>	<b>1</b>	<b>3.0</b>	<b>2</b>	<b>21</b>	<b>53</b>	<b>24</b>	<b>0</b>	<b>2.4</b>	<b>8</b>	<b>50</b>	<b>38</b>	<b>4</b>	<b>0</b>	<b>1.5</b>	<b>63</b>	<b>26</b>	<b>8</b>	<b>3</b>	<b>0</b>

**Table 5. Sire Means for Measured Traits**

Sire means are the average performance of all the progeny of a sire adjusted for all available information on sex, birth type, rear type, age of dam, age of measurement and management group, in order to improve the accuracy. No account is made for trait heritability and genetic correlations between traits that can improve the breeding value accuracy, as is the case in Table 1.

The highest performing sires for each trait (trait leaders) are highlighted by shading. Curvature is the possible exception when for many breeders the optimum score is in the middle of the range therefore trait leaders have not been highlighted. The **Progeny group average** listed at the bottom of the table is the actual mean of the progeny group.

Breeders flock, Sire name	Number of Progeny	Sire means for measured traits (deviations from the site mean)																			
		GFW		CFW		FD		FDCV		SL		SS		WT				FAT		EMD	
		Y <sup>^</sup>	A	Y	A	Y	A	Y	A	Y	A	Y	A	W	P	Y	A	Y	H	Y	H
Billandri Poll, 130087	41	0.1	0.3	0.0	0.2	0.3	0.6	0.6	-0.3	-2.0	3.7	-0.3	0.3	0.1	0.0	-1.3	-0.9	-0.1	0.0	0.1	-0.1
Bogo, 111424	50	-0.1	0.0	-0.1	0.0	-0.5	-0.9	0.1	0.5	-6.7	-2.9	-0.3	-9.3	-0.3	-1.4	-0.1	-1.0	0.0	0.1	0.1	0.6
Bundaleer Poll, 13V741	54	-0.1	0.1	-0.2	0.0	0.0	0.0	-0.3	-0.6	-10.3	-4.6	-2.0	3.1	-0.5	0.3	-0.4	0.4	-0.1	-0.1	-0.3	-0.6
Bundilla, 111265	37	0.3	0.3	0.2	0.3	0.3	0.4	0.1	1.2	-0.7	-3.1	-4.8	2.0	1.2	1.7	4.2	3.3	0.3	0.1	0.3	0.4
Centre Plus Poll, 207316	44	0.0	-0.1	-0.1	-0.2	-0.7	-0.7	0.0	-0.9	0.8	-1.3	-0.9	-1.0	-0.8	-1.6	-0.6	-1.2	-0.1	0.1	0.1	0.9
Darriwell, 130941	49	0.1	0.2	0.1	0.3	0.3	0.5	0.7	-0.1	-2.5	-5.8	3.1	5.5	0.9	0.5	-0.1	-0.1	-0.2	-0.2	-0.7	-0.8
Glenpaen, 120042	49	0.1	0.1	0.0	0.0	-0.7	-0.7	1.0	0.3	-6.7	-3.8	-1.0	-0.5	-0.2	-0.6	-0.8	-1.0	-0.2	-0.4	-1.1	-1.6
Greenfields Poll, 130599	48	0.2	0.2	0.2	0.2	-0.2	0.0	1.3	1.8	-1.2	0.2	1.2	-0.3	-0.5	-0.4	-1.1	-2.2	-0.1	-0.2	-0.1	-1.1
Hazeldean, 11.43	56	0.0	0.3	0.1	0.3	0.0	0.0	0.0	0.5	5.2	1.7	-2.5	-3.6	0.7	0.4	3.1	1.4	0.0	-0.1	-0.3	-0.4
Kurra-Wirra, SR5681	48	-0.1	0.0	0.0	0.2	-0.3	0.0	1.4	0.6	-7.9	-1.3	-4.3	4.9	-1.1	-3.1	-3.3	-4.3	-0.1	-0.1	-0.5	0.3
Leahcim Poll, 090918	59	-0.2	-0.3	-0.1	-0.3	-0.5	0.4	-0.2	0.2	1.6	2.6	-2.8	-2.1	0.1	-0.4	-1.0	-0.3	0.0	0.0	0.6	0.2
Leahcim Poll, 123153	40	-0.2	-0.3	-0.1	-0.2	-0.3	0.2	-0.3	-1.0	1.8	4.1	-1.5	-5.3	0.2	0.6	-0.2	0.3	0.3	0.4	0.7	1.7
Merinotech WA Poll, 100081	55	0.1	0.0	0.1	0.1	0.6	0.2	-2.3	-1.0	10.5	2.2	11.2	4.8	-1.4	-1.1	-1.4	0.6	0.3	0.5	0.8	1.7
Mokanger, 120092	37	0.2	0.0	0.2	0.1	-0.2	-0.1	0.4	1.2	-9.3	-10.6	0.7	4.8	0.1	-0.8	-1.4	-1.2	0.0	-0.1	0.4	-0.1
Moojepin, 100248	48	0.2	0.1	0.1	-0.1	1.1	0.9	-0.6	-0.3	21.0	10.8	-2.1	1.3	0.8	3.2	5.6	5.2	0.3	0.4	1.0	1.0
Mumblebone, 130389	29	-0.2	-0.3	-0.1	-0.3	0.7	0.5	-1.9	0.0	4.2	2.7	5.3	-2.9	-0.7	-0.1	-2.1	-1.8	0.1	0.2	0.5	1.2
Mumblebone, 130850	27	-0.1	-0.3	0.0	-0.4	0.6	0.5	-0.9	-1.8	7.9	4.7	6.0	-3.7	1.3	3.4	1.2	2.9	-0.1	0.2	0.3	0.4
Nareeb Nareeb, 130380	45	0.0	-0.2	0.0	0.0	0.4	0.1	0.4	-0.5	-2.9	-2.5	0.0	2.4	0.7	1.2	-0.5	1.2	-0.3	-0.2	-1.4	-1.4
Nerstane, 130467	44	0.1	0.5	0.0	0.3	-0.1	-0.2	0.1	0.3	3.3	3.9	-5.5	3.1	-0.1	-1.9	0.5	-1.6	-0.2	-0.5	-0.9	-1.8
One Oak No. 2, R56	57	0.0	0.1	-0.1	0.2	-0.5	-0.5	3.1	1.3	-10.8	-4.9	-8.5	-5.6	-0.6	-1.3	-0.9	-1.9	-0.1	-0.2	0.0	-0.1
Roseville Park, 140019	34	-0.2	-0.1	-0.2	0.0	0.3	0.4	0.2	0.4	1.1	-2.0	-0.2	4.8	-0.4	0.4	-0.3	1.6	0.0	0.0	-0.3	-0.1
The Mountain Dam, 11/ESA00	57	0.0	-0.3	0.1	-0.3	-0.1	-0.7	0.0	0.8	4.7	-0.2	-0.9	-4.1	-0.1	0.5	-1.0	-0.4	0.0	0.1	0.6	0.2
Tuckwood Poll, 121021	48	0.2	0.0	0.1	0.1	0.1	0.2	-0.7	-0.3	9.9	5.0	3.1	-1.4	1.7	2.2	2.8	2.4	0.0	-0.1	-0.3	-0.5
Yalgoo, 120043	57	-0.1	-0.3	0.0	-0.2	-1.0	-1.1	0.2	-0.7	-7.9	0.1	-1.6	-0.5	-0.3	-1.1	-1.5	-2.8	0.1	0.0	0.4	0.0
Yiddinga, 130374	49	-0.1	0.0	-0.1	-0.1	0.5	0.1	-2.2	-1.5	-3.0	1.1	8.7	3.4	-0.6	-0.7	0.6	1.3	0.1	0.2	-0.1	0.1
<b>Progeny group average</b>	<b>46</b>	<b>2.6</b>	<b>4.4</b>	<b>1.8</b>	<b>3.3</b>	<b>14.2</b>	<b>16.3</b>	<b>19.6</b>	<b>17.3</b>	<b>82.0</b>	<b>90.7</b>	<b>30.5</b>	<b>36.7</b>	<b>23.4</b>	<b>28.4</b>	<b>32.6</b>	<b>37.0</b>	<b>2.6</b>	<b>2.9</b>	<b>21.1</b>	<b>21.6</b>
		kg		kg		µm		%		mm		N/ktex		kg				mm		mm	

<sup>^</sup> W = Weaning (42 to 120 days); P = Post Weaning (210 to 300 days); Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older)

### Accuracy of Flock Breeding Values

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Flock Breeding Values (FBVs) are reported by Sheep Genetics (SG). 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 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 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 sire evaluation sites located across Australia to allow all sires entered in these site evaluations to have their performance reported relative to each other in Merino Superior Sires. Merino Superior Sires reports sires from across all effectively linked sire evaluation sites and across all evaluations at these sites. Link sires are therefore a vital component of the sire evaluation.

To be used as a link a sire 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 sires which can provide a wider perspective of the elite sires available across many flocks in Australia.

### Calculation of Combined Information

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Combined measured trait performance is calculated as Index – 100. Three different index options are provided to cater for breeders' different breeding objectives.

Combined visual trait performance is calculated as:

$(\text{Classer's Visual Grade Tops\%} - \text{Culls\%})/5$ , expressed as a deviation from  $(\text{average Tops\%} - \text{average Culls\%})/5$ .

Example

Sire's performance:    □ AMSEA DP+ Index value = 119.7  
                                 □ Tops% = 25.5 (average Tops% = 25.1)  
                                 □ Culls% = 17.6 (average Culls% = 16.4)

Combined Measured    = 119.70 – 100 = 19.7  
Combined Visual        =  $((25.5 - 17.6)/5) - ((25.1 - 16.4)/5)$   
                                 =  $7.9/5 - 8.7/5 = 1.58 - 1.74 = -0.1$

# Elders Balmoral

2015 Drop  
Post Weaning, Yearling and Adult  
Assessment



**Merino Lifetime Productivity Project Site**

