Elders Balmoral

2016 Drop
Post Weaning

Within-Site Results

Conducted by

Elders Balmoral Sire Evaluation Group

under the auspices of

The Australian Merino Sire Evaluation Association

Merino Lifetime Productivity Project Site

June 2017

Acknowledgement

The Merino Lifetime Productivity 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

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. Results are an analysis of individual sires and do not necessarily indicate a stud's performance.

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 "Kooringal", 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.

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

Contents

2016 Drop Post Weaning Assessment

The information in this Site Report provides an update of the assessment of the 2016 drop, including the Post Weaning assessments of the sire's progeny performance for measured and visually assessed traits.

The Post Weaning fleece, including shearing, and visual assessments were made at 8.5 months of age with 8.5 months of wool growth.

Updated Site Reports will be published annually, or when new information is available.

Site Committee

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For further information on this report please contact

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Ben Swain: ....02 6743 2306 ben_swain@bigpond.com

Sire and Owner Details

Breeders flock, Sire name Sire ID [#], Breed [†]	Contact Details
Centre Plus Poll, 707115 601250-2007-707115, Poll Merino	**Robert Mortimer** Devondale, Tullamore NSW 2874 P: (02) 6892 8259, M: 0429 92 8292, E: robert@centreplus.com.au
GRASS, 142194 (R4) 503884-2014-142194, Merino	**Graham Peart** GRASS Merinos Pty Ltd, PO Box 216, Nambucca Heads NSW 2448 P: 0428 825 721, E: g.peart@icloud.com
Glen Holme, 141077 (Dohne) 510184-2014-141077, Dohne	**Allen Kelly** PO Box 69, Manoora SA 5414 P: (08) 8848 4328, M: 0409 01 8943, E: ajkelly@activ8.net.au
Greendale, 120012 (Link) 505069-2012-120012, Merino	**Alan McGufficke** Willarney, 850 Maffra Road, Cooma NSW 2630 P: (02) 6452 3605, M: 0429 44 8078, E: milliefarming@activ8.net.au
Greenfields Poll, 140345 (Link) 600240-2014-140345, Poll Merino	**James Sullivan** PMB 14, Hallett SA 5419 P: (08) 8894 2097, M: 0427 94 2097, E: james@greenfieldstud.com.au
Greenland, 2.366 504188-2012-120366, Merino	**John Alcock** Merambego, Bungarby NSW 2630 P: (02) 6453 6244, M: 0437 89 8982, E: alcock@skymesh.com.au
Hannaton Poll, 120046 600804-2012-120046, Poll Merino	**Jonno Hicks** Hannaton Partnership, PO Box 22, Kaniva VIC 3419 P: (03) 5392 2366, M: 0428 92 2366, E: peter@hannaton.com.au
Hazeldean, 11.3542 (Link) 500383-2011-003542, Merino	**Jim Litchfield** Hazeldean Pty Ltd, Cooma NSW 2630 P: (02) 6453 5555, M: 0417 67 6561, E: admin@hazeldean.com.au
Kiandra Poll, 140757 601138-2014-140757, Poll Merino	**Ryan Kluska** 4611 Emu Flat Road, Bordertown SA 5268 P: (08) 8754 2030, E: kluska@activ8.net.au
Kooringal, 130519 504170-2013-130519, Merino	**Mark Bunge** 2115 Coleraine-Edenhope Rd, Coleraine VIC 3315 P: (03) 5579 7224, M: 0409 96 2248, E: mbunge5@gmail.com
Kurra-Wirra, SB5585 504173-2013-SB5585, Merino	**Anthony Close** Kurra Wirra , 770 Moree-Culla Rd, Culla VIC 3315 P: (03) 5570 4238, M: 0437 08 5217, E: kurrawirra@skymesh.com.au
Leahcim Poll, 090918 (Link) 600815-2009-090918, Poll Merino	**Andrew and Rosemary Michael** PO Box 31, Snowtown SA 5520 P: (08) 8865 2085, M: 0418 82 8431, E: leahcimgenetics@bigpond.com
Melrose, 12UGB060 501704-2012-UGB060, Merino	**Warren Russell** GRASS Merinos Pty Ltd, PO Box 216, Nambucca Heads NSW 2448 P: (03) 5388 1243, M: 0427 88 1204, E: melrosemerinostud@gmail.com
Mumblebone, 130389 (Link) 500063-2013-130389, Merino	**Chad Taylor** Marapana, 456 Wuuluman Road, Wellington NSW 2820 P: (02) 6845 3620, M: 0458 45 3608, E: chad@mumblebone.com.au
Mumblebone, 140026 500063-2014-140026, Merino	**Chad Taylor** Marapana, 456 Wuuluman Road, Wellington NSW 2820 P: (02) 6845 3620, M: 0458 45 3608, E: chad@mumblebone.com.au

Sire and Owner Details

Breeders flock, Sire name Sire ID #, Breed †	Contact Details
Nerstane, 100919 (Link) 503298-2010-100919, Merino	**John, Hamish and Jock McLaren** Nerstane, Woolbrook NSW 2354 P: (02) 6777 5881, M: 0429 77 5891, E: info@nerstane.com.au
One Oak No. 2, R56 (Link) 503855-2010-100R56, Merino	**Graham Wells** 1763 Great Alpine Road, Smoko VIC 3741 M: 0428 44 2930, E: oneoakpl@bigpond.com
Stockman Poll, 090853 (Link) 601050-2009-090853, Poll Merino	**Kip Gray** Melton Vale, 85 Lake Highway, Melton Mowbray TAS 7030 P: (03) 6259 1162, M: 0418 58 9051, E: kgray@stockmanstud.com.au
Terrick West Poll, 122220 600121-2012-122220, Poll Merino	**Ross McGauchie** 2400 Echuca - Serpentine Rd, Prairie VIC 3572 P: (03) 5436 8270, M: 0428 36 8270, E: terrick_west@bigpond.com
The Mountain Dam, 11/ESA004 (Link) 504572-2011-ESA004, Merino	**Tom Silcock** The Mountain Dam, 429 Silcocks Road, Telangatuk East VIC 3401 P: (03) 5388 2288, M: 0419 88 2239, E: tom@themountaindam.com.au
Trefusis, 110482 (Link) 500013-2011-110482, Merino	**Georgina and Hamish Wallace** 1929 Tooms Lake Road, Ross TAS 7209 P: (03) 6381 5320, M: 0438 98 6257, E: gawallace@trefusis.com.au
Tuckwood Poll, 131026 601053-2013-131026, Poll Merino	**Geoff Tucker** PMB 21, Millicent SA 5280 P: (08) 8734 2050, M: 0427 34 2050, E: geomag@activ8.net.au
Wallaloo Park Poll, 120912 601332-2012-120912, Poll Merino	**Trent Carter** 80 Bolangum Inn Road, Marnoo VIC 3387 P: (03) 5359 2290, M: 0427 77 6114, E: trent@wallaloopark.com
Woodyarrup, 120175 500412-2012-120175, Merino	**Craig and Lachlan Dewar** PO Box 61, Broomehill WA 6318 P: (08) 9824 1257, M: 0429 10 0239, E: merino@woodyarrup.com.au
Yiddinga, 141989 (Unreg) 509242-2014-141989, Merino	**Jim Farran** 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

Manager's Report

Host Property for 2016 drop progeny and location

"Tuloona" is operated by the Craig family and is located approximately 5km south 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/head) and weighing 52kg body weight.

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 2206 ewes was conducted by Genstock Jerilderie between 30 March and 3 April 2016. 25 sires were inseminated. Ewes averaged approximately condition score 3.17 at joining.

Owing to a mix up of semen at an AI centre in 2015, the semen sent for the Mumblebone sire was from two different Mumblebone sires. To increase progeny numbers in 2016, a small group of additional progeny have been produced in this 2016 drop for Mumblebone 130389.

Pregnancy and lambing

The ewes were pregnancy scanned on 31 May 2016.

Ewes were split following pregnancy scanning into single, twin and triplet bearing ewes.

Ewes completed lambing at Tuloona in late August 2016. A total of 1804 lambs were tagged on the 12-14 September 2016. This represented 73.6% of the number of foetuses scanned and 81.8% on ewes inseminated. DNA samples were taken at tagging to determine sire and dam parentage.

The lambs were marked at tagging and scored for breech traits. On 5 December 2016 the lambs were weaned with an average weaning weight of 24.2 kg. This average weaning weight was low due to the high percentage of twins.

Weaning to Post Weaning Assessment

Lambs tracked well for growth rate and body weight gain from weaning until shearing in April. Body weights collected 27 January 2017 averaged 26.3 kg, up from weaning – 26 grams/day with an average condition score of 2.84.

On 21 June 2017 the ewe portion was weighed and averaged 30.25kg with a daily weight gain of 33 grams/day since January. See the average growth as outlined in the appended report by Hamish Dickson, AgriPartner Consulting. With shearing completed and green feed now in front of them, all lambs are doing well.

Seasonal conditions

A great Spring finish in 2016 has now been followed by one of our best Autumn breaks in 2017.

Assessment and Management Program

Activity		Date/s	Age	Wool
Selection of ewes		February 2016		
Allocation of ewes for mating		March 2016		
Pregnancy scanning		30 May 2016		
Allocated to lambing paddocks		18 August 2016		
Lambing: start – finish		24 August – 2 September 2016		
Tagging, pigmentation and breech scoring		13 September 2016	16 days	
Lambing mobs boxed to one management group		13 September 2016	16 days	
Marking		13 September 2016	16 days	
Weaning		5 December 2016	99 days	
Mid side fleece sampling	P	3 May 2017	8.5 months	8.5 months
Visual trait scoring	P	3 May 2017	8.5 months	8.5 months
Shearing	P	8 May 2017	8.5 months	8.5 months
Fat and eye muscle scanning		Not yet measured		
Worm egg count sampling		Not yet measured		
Body weighing	W	13 September 2016	3 months	
	P	8 May 2017	8.5 months	
Drench	Drenched at weaning.			
Fly treatment	Treated with Clik® at marking. Progeny are not mulesed.			
Supplementary feeding	Silage, Barley and Lupins post weaning			
Field day or public display	Field Day & Progeny Display–March 2017 Annual display at Balmoral Show, Sheepvention and Bendigo Sheep and Wool Show **Next Field Day 16 February 2018**			

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	Centre Plus Poll, 707115	601250-2007-707115	601250-2004-407373
2	GRASS, 142194 (R4)	503884-2014-142194	503884-2012-122165 (GRASS, 122165)
3	Glen Holme, 141077 (Dohne)	510184-2014-141077	510029-2010-100358 (Pinedale, 100358)
4	Greendale, 120012	505069-2012-120012	503298-2008-080121 (Nerstane, 080121)
5	Greenfields Poll, 140345	600240-2014-140345	Unknown
6	Greenland, 2.366	504188-2012-120366	Unknown
7	Hannaton Poll, 120046	600804-2012-120046	600804-2011-110002
8	Hazeldean, 11.3542	500383-2011-003542	601050-2002-020603 (Stockman Poll, Jim)
9	Kiandra Poll, 140757	601138-2014-140757	601250-2009-907538 (Centre Plus Poll, 907538)
10	Kooringal, 130519	504170-2013-130519	Unknown
11	Kurra-Wirra, SB5585	504173-2013-SB5585	Unknown
12	Leahcim Poll, 090918	600815-2009-090918	600815-2007-070319
13	Melrose, 12UGB060	501704-2012-UGB060	501704-2010-07R439
14	Mumblebone, 130389	500063-2013-130389	601365-2009-090399
15	Mumblebone, 140026	500063-2014-140026	600815-2008-080445
16	Nerstane, 100919	503298-2010-100919	503298-2005-054636 (Nerstane, N4636)
17	One Oak No. 2, R56	503855-2010-100R56	Unknown
18	Stockman Poll, 090853	601050-2009-090853	601050-2002-020603 (Stockman Poll, Jim)
19	Terrick West Poll, 122220	600121-2012-122220	Unknown
20	The Mountain Dam, 11/ESA004	504572-2011-ESA004	600792-2009-090576 (Mernowie Poll, 090576)
21	Trefusis, 110482	500013-2011-110482	503298-2009-090910 (Nerstane, 090910)
22	Tuckwood Poll, 131026	601053-2013-131026	601082-2008-081375
23	Wallaloo Park Poll, 120912	601332-2012-120912	503298-2007-070038
24	Woodyarrup, 120175	500412-2012-120175	Unknown
25	Yiddinga, 141989	509242-2014-141989	Unknown

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 carcase traits. Moderate increase in fleece weight. Maintain fibre diameter and staple strength. Moderate increase in reproduction.

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.

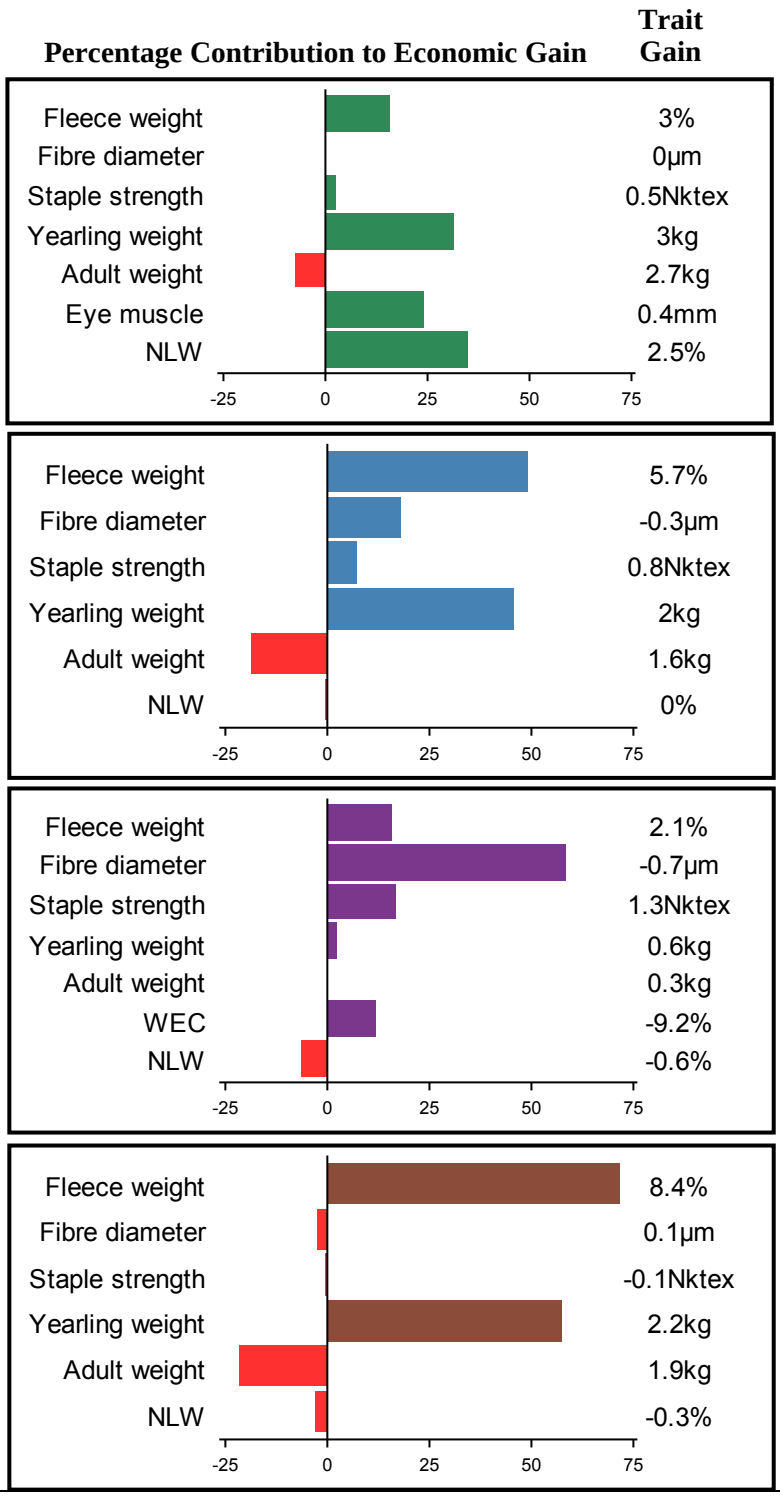


Table 1. **AMSEA Index Values and Classer's Visual Grade**

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	Breeders 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 % P	Culls % P
1	Centre Plus Poll, 707115	39	Index accuracies too low to publish at this stage			98	4	-6
2	GRASS, 142194 (R4)	27				102	-15	4
3	Glen Holme, 141077 (Dohne)	40				97	-20	-1
4	Greendale, 120012	32				97	-15	-2
5	Greenfields Poll, 140345	20				105	6	9
6	Greenland, 2.366	35				94	-1	-4
7	Hannaton Poll, 120046	40				97	26	-6
8	Hazeldean, 11.3542	38				110	-2	4
9	Kiandra Poll, 140757	30				98	-7	7
10	Kooringal, 130519	34				88	-15	21
11	Kurra-Wirra, SB5585	25				103	12	8
12	Leahcim Poll, 090918	35				96	12	-3
13	Melrose, 12UGB060	32				103	-2	-2
14	Mumblebone, 130389	14				93	24	1
15	Mumblebone, 140026	28				106	-6	1
16	Nerstane, 100919	40				111	7	-12
17	One Oak No. 2, R56	44				94	-14	8
18	Stockman Poll, 090853	39				95	-3	-12
19	Terrick West Poll, 122220	26				101	-5	-6
20	The Mountain Dam, 11/ESA004	30				102	-8	7
21	Trefusis, 110482	37				93	8	0
22	Tuckwood Poll, 131026	35				110	12	-3
23	Wallaloo Park Poll, 120912	32				94	11	-6
24	Woodyarrup, 120175	27				113	8	-3
25	Yiddinga, 141989	19				104	-18	-5
	Average performance	**32**				**100**	**33**	**21**

Combined Measured Traits and Visual Performance

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

DP+ Index not currently available due to accuracies being too low to publish at this stage.

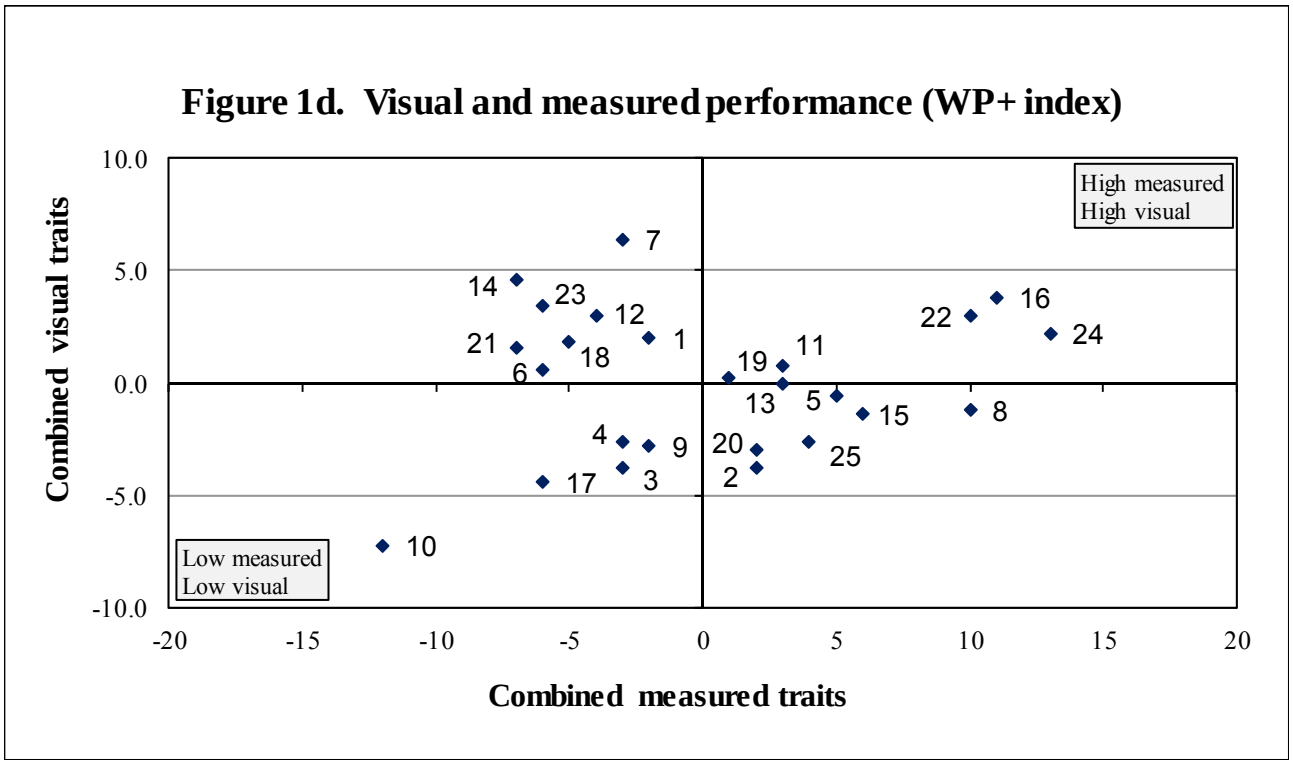
Figure 1b. Combined measured traits (MP+ index) and combined visually assessed traits for the site objective.

MP+ Index not currently available due to accuracies being too low to publish at this stage.

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

FP+ Index not currently available due to accuracies being too low to publish at this stage.

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



Summary Graphs

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.

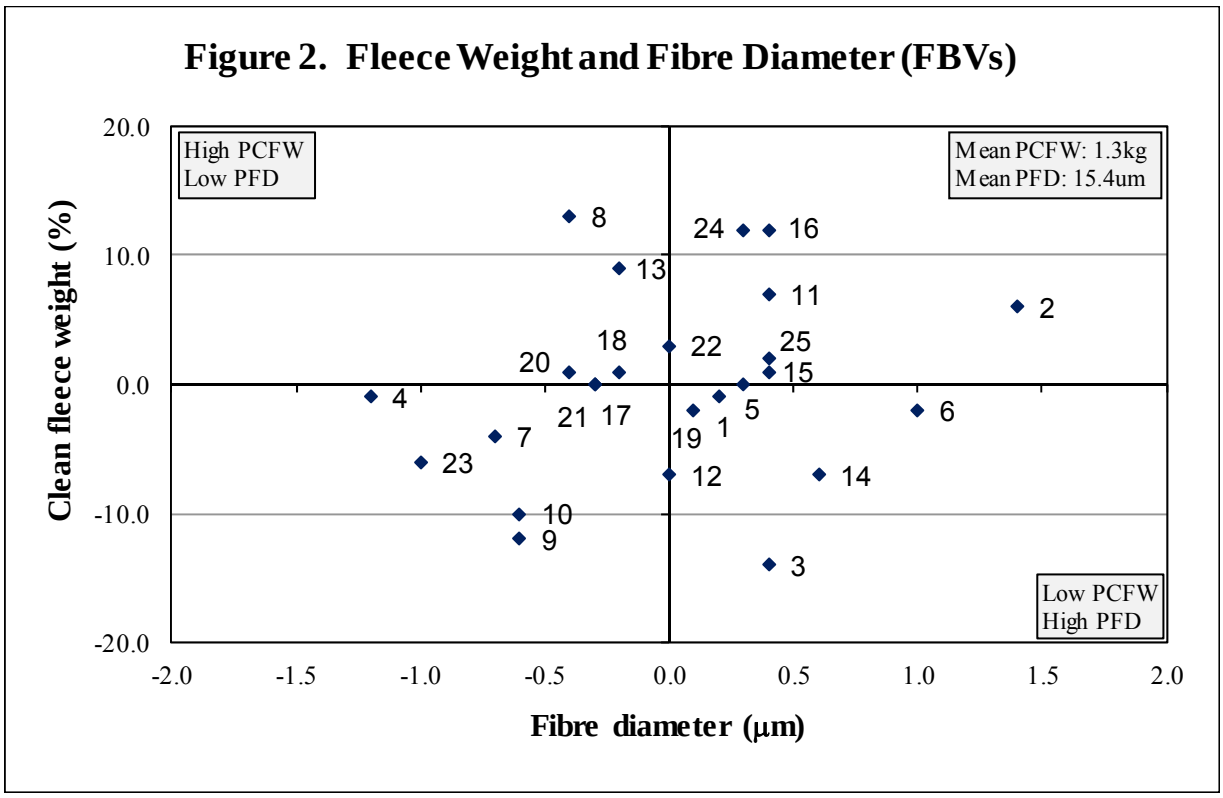
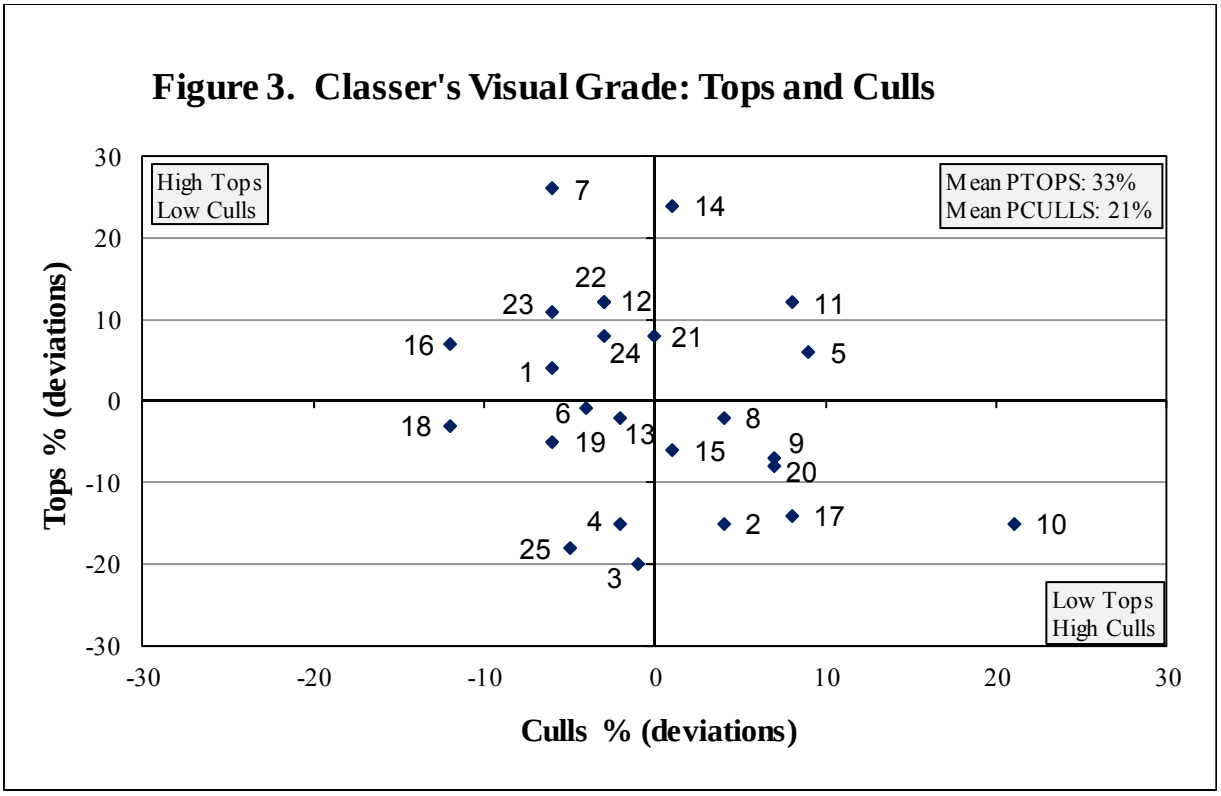


Figure 3. Classer's Visual Grade - Tops by Cull
The graph describes performance for Classer's Visual Tops Grade on the side axis and Culls Grade on the bottom axis. Sires that have above average Tops and below average Culls are in the top left hand quarter.



Summary Graphs

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.

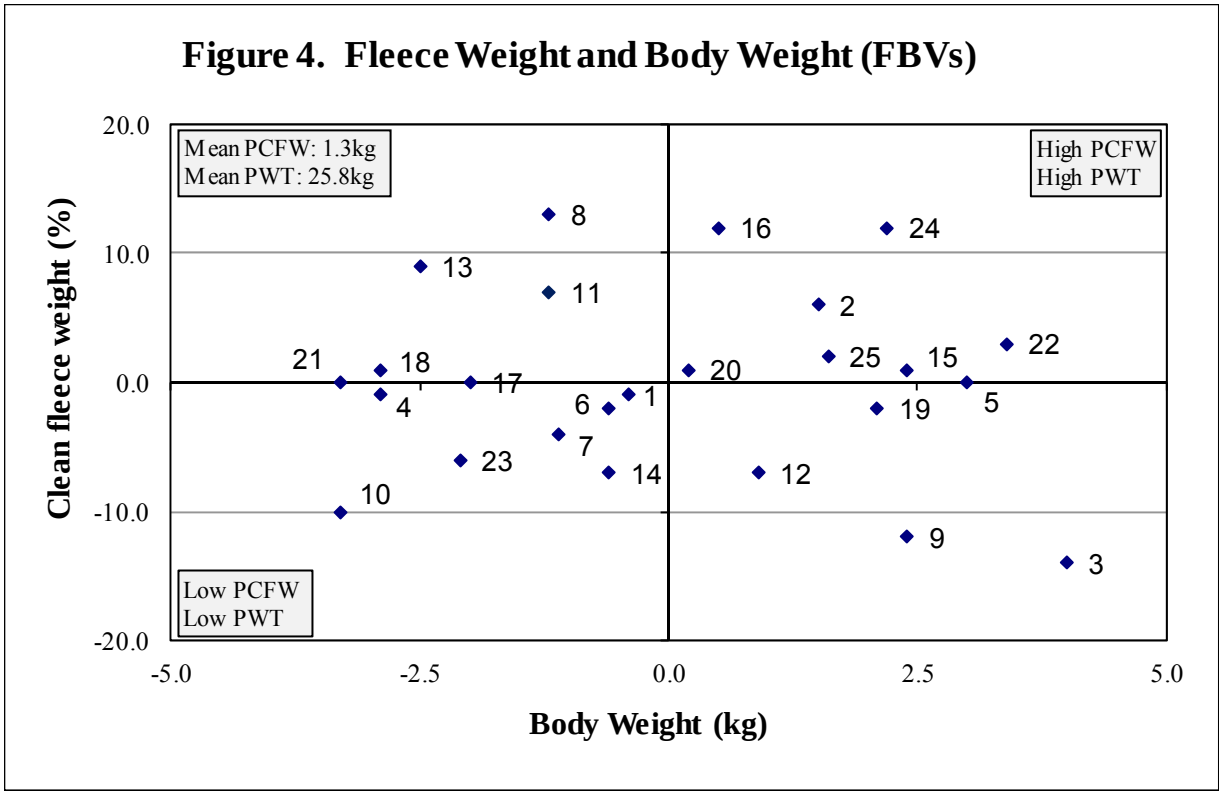


Figure 5. Fleece Weight and Fat (FBVs)
The graph describes performance for fleece weight on the side axis and fat depth on the bottom axis. Sires that are above average for fleece weight and above average for fat are located in the top right hand quarter.

FAT not yet measured

Summary Graphs

Figure 6. Fleece Weight and 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.

EMD not yet measured

Figure 7. Body Weight and 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.

EMD not yet measured

Summary Graphs

Figure 8. Staple Strength and 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.

WEC not yet measured

Understanding the Results

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

Breeders flock, Sire number:	Identity of the breeder's flock and the sire's number or name.
Number of progeny:	The number of progeny a sire had at the most recent measured analysis. Average number of progeny is included in Table 1.
Flock Breeding Values:	Flock Breeding Values (FBVs) are Estimated Breeding Values (EBVs) calculated by Sheep Genetics for the sires evaluated in this report. Only data from this 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. 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.
Traits: Abbreviation, trait and the (units reported)	GFW: Greasy fleece weight (percentage). CFW: Clean fleece weight (percentage). FD: Average fibre diameter (micron). WT: Body weight (kilograms). FDCV: Fibre diameter coefficient of variation (percentage). SL: Staple length (mm) at the mid-side. SS: Staple strength (N/ktex) at the mid-side. EMD: Eye muscle depth (mm) at the 'C' site. FAT: Fat depth (mm) at the 'C' site. CURV: Fibre curvature (degrees). WEC: Worm egg count (% deviation in worm burden of sire's progeny).
Age at assessment:	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).
Classer's Visual Grade:	A classer grades all progeny as either Tops, Flocks or Culls based on their visual assessment of all traits relative to the site's Breeding Objective. 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. Page 8 provides more detail on Classer's Visual Grade and the site's Breeding Objective.

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[1]	
			GFW	CFW	FD	WT		Tops	Culls
			%	%	µm	kg		%	%
			P^	P	P	W	P	P	P
1	Centre Plus Poll, 707115	39	0	-1	0.2	-0.7	-0.4	4	-6
2	GRASS, 142194 (R4)	27	3	6	1.4	1.1	1.5	-15	4
3	Glen Holme, 141077 (Dohne)	40	-9	-14	0.4	2.4	4.0	-20	-1
4	Greendale, 120012	32	0	-1	-1.2	-1.8	-2.9	-15	-2
5	Greenfields Poll, 140345	20	-1	0	0.3	1.9	3.0	6	9
6	Greenland, 2.366	35	-2	-2	1	-0.5	-0.6	-1	-4
7	Hannaton Poll, 120046	40	-3	-4	-0.7	-1.0	-1.1	26	-6
8	Hazeldean, 11.3542	38	10	13	-0.4	-0.6	-1.2	-2	4
9	Kiandra Poll, 140757	30	-7	-12	-0.6	1.3	2.4	-7	7
10	Kooringal, 130519	34	-8	-10	-0.6	-2.2	-3.3	-15	21
11	Kurra-Wirra, SB5585	25	6	7	0.4	-0.6	-1.2	12	8
12	Leahcim Poll, 090918	35	-7	-7	0	0.6	0.9	12	-3
13	Melrose, 12UGB060	32	8	9	-0.2	-1.3	-2.5	-2	-2
14	Mumblebone, 130389	14	-6	-7	0.6	-0.7	-0.6	24	1
15	Mumblebone, 140026	28	-1	1	0.4	1.0	2.4	-6	1
16	Nerstane, 100919	40	11	12	0.4	0.4	0.5	7	-12
17	One Oak No. 2, R56	44	0	0	-0.3	-1.0	-2.0	-14	8
18	Stockman Poll, 090853	39	1	1	-0.2	-1.8	-2.9	-3	-12
19	Terrick West Poll, 122220	26	-3	-2	0.1	1.9	2.1	-5	-6
20	The Mountain Dam, 11/ESA004	30	0	1	-0.4	-0.3	0.2	-8	7
21	Trefusis, 110482	37	1	0	-0.3	-1.8	-3.3	8	0
22	Tuckwood Poll, 131026	35	1	3	0	2.3	3.4	12	-3
23	Wallaloo Park Poll, 120912	32	-4	-6	-1	-1.6	-2.1	11	-6
24	Woodyarrup, 120175	27	8	12	0.3	1.7	2.2	8	-3
25	Yiddinga, 141989	19	2	2	0.4	1.3	1.6	-18	-5

^ 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)

1 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 % P^	SL mm	SS N/ktex	CURV deg/mm P	FAT mm	EMD mm	WEC %
1	Centre Plus Poll, 707115	39	0.0	FBVs not currently available for SS and SL		-3.0	FAT, EMD and WEC not yet measured		
2	GRASS, 142194 (R4)	27	0.9			2.6			
3	Glen Holme, 141077 (Dohne)	40	-0.5			10.4			
4	Greendale, 120012	32	1.0			-3.5			
5	Greenfields Poll, 140345	20	-0.1			-0.9			
6	Greenland, 2.366	35	-1.2			5.7			
7	Hannaton Poll, 120046	40	-0.3			-1.5			
8	Hazeldean, 11.3542	38	-0.4			-1.6			
9	Kiandra Poll, 140757	30	0.5			5.0			
10	Kooringal, 130519	34	-0.9			0.7			
11	Kurra-Wirra, SB5585	25	-0.6			-0.3			
12	Leahcim Poll, 090918	35	-0.2			-2.7			
13	Melrose, 12UGB060	32	0.7			-3.0			
14	Mumblebone, 130389	14	-1.7			-3.1			
15	Mumblebone, 140026	28	-1.8			-2.9			
16	Nerstane, 100919	40	-0.8			1.5			
17	One Oak No. 2, R56	44	3.3			0.8			
18	Stockman Poll, 090853	39	1.1			-1.3			
19	Terrick West Poll, 122220	26	0.8			4.7			
20	The Mountain Dam, 11/ESA004	30	0.7			-0.7			
21	Trefusis, 110482	37	1.1			5.6			
22	Tuckwood Poll, 131026	35	-1.5			-2.3			
23	Wallaloo Park Poll, 120912	32	0.4			-3.5			
24	Woodyarrup, 120175	27	-0.2			-6.4			
25	Yiddinga, 141989	19	-0.2			-0.5			

^ 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*

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.

■ Fleece rot:	The severity of fleece rot from **1** (no fleece rot), **2 and 3** (bands of bacterial staining but no crusting), and **4 and 5** (bands of crusty fleece rot).
■ Wool colour:	Greasy wool colour scored from **1** (whitest) to **5** (yellow).
■ Wool character:	Definition and variation of crimp between and along the staple scored from **1** (well defined and regular) to **5** (undefined and large variation).
■ Dust penetration:	Degree of dust penetration from **1** (only tip <6%) to **5** (71 to 100% of staple).
■ Staple weathering:	The deterioration due to light and water from **1** (least, <6% of staple) to **5** (most, 71 to 100%) reflect the depth and degree of deterioration.
■ Staple structure:	The size and diameter of each staple from **1** (<6mm) to **5** (>30 mm).
■ Fibre pigmentation:	The percentage of dark fibres on any part of the sheep from **1** (0 pigmented fibres at any site) to **5** (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 **1** (0 pigmentation at any site) to **5** (71 to 100% pigmented area on one or more bare skin sites, **and/or** 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 **1** (no recessive markings) and **5** (recessive markings). This trait does not include random spot or fibre pigmentation.
■ Random spot: (Spot)	Random spot (spot) is identified by rounded wool or hair spot/s, not symmetrical. There are two scores **1** (no spot/s) and **5** (spot/s). If both sides of the face or body are spotted the sheep should be scored as a recessive black.
■ Face cover:	Wool cover on the face scored from **1** (open face) to **5** (fully covered face).
■ Feet/Legs:	Conformation of feet and legs scored from **1** (very straight) to **5** (very angulated).
■ Body wrinkle:	The degree of body wrinkle from **1** (no wrinkle) to **5** (extensive wrinkle).
■ Jaw:	The alignment of the lower jaw and its teeth relative to the top jaw from **1** (very well aligned) to **5** (heavily undershot or overshot).
■ Back/Shoulder:	Conformation of the back and shoulder from **1** (very square) to **5** (very dipped or high).
■ Breech cover:	Size of natural bare area around the breech from **1** (large) to **5** (no bare).
■ Crutch cover:	Size of natural bare area in the pubic and groin from **1** (large) to **5** (no bare).
■ Breech wrinkle:	Degree of wrinkle at the tail set and hind legs from **1** (nil) to **5** (extensive).
■ Dag:	Degree of dag adhering to the breech and legs from **1** (nil) to **5** (extensive).
■ Urine:	Degree of urine stained wool in the breech area, including the hind legs from **1** (nil) to **5** (extensive).

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.

Breeders flock, Sire name	Wool Quality - *Post Weaning*																							
	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
Centre Plus Poll, 707115	0.2	56	24	15	5	0	0.1	2	15	76	7	0	-0.1	0	44	54	2	0	0.1	0	27	59	14	0
GRASS, 142194 (R4)	-0.4	93	7	0	0	0	0.2	0	18	68	14	0	0.5	0	3	79	14	4	0.6	0	11	43	46	0
Glen Holme, 141077 (Dohne)	0.3	41	41	18	0	0	0.2	0	28	51	21	0	0.3	0	11	79	10	0	0.5	0	8	59	33	0
Greendale, 120012	-0.3	88	12	0	0	0	0.0	0	38	53	9	0	0.0	3	38	53	6	0	-0.2	13	31	44	12	0
Greenfields Poll, 140345	0.2	55	25	15	5	0	0.0	0	30	60	10	0	0.1	5	20	65	10	0	0.0	0	35	55	10	0
Greenland, 2.366	-0.2	78	14	8	0	0	-0.3	0	61	36	3	0	-0.1	0	53	39	8	0	0.3	0	19	56	25	0
Hannaton Poll, 120046	0.0	65	25	8	2	0	0.1	0	35	48	17	0	-0.2	3	57	35	5	0	-0.2	13	30	45	12	0
Hazeldean, 11.3542	0.7	38	31	13	15	3	-0.1	0	49	36	15	0	-0.1	0	44	56	0	0	-0.2	3	46	46	5	0
Kiandra Poll, 140757	-0.2	83	10	4	3	0	0.4	0	10	60	30	0	-0.1	0	47	50	3	0	0.1	9	27	37	27	0
Kooringal, 130519	0.4	54	14	23	9	0	0.0	0	40	46	14	0	-0.1	0	49	46	5	0	0.3	0	25	49	26	0
Kurra-Wirra, SB5585	0.2	63	11	26	0	0	0.1	0	30	59	11	0	-0.1	0	52	44	4	0	-0.4	7	56	33	4	0
Leahcim Poll, 090918	0.1	69	17	6	8	0	0.1	0	22	72	6	0	-0.2	3	50	44	3	0	0.2	0	25	61	14	0
Melrose, 12UGB060	0.0	72	12	16	0	0	-0.1	0	41	53	6	0	-0.1	7	34	59	0	0	-0.4	16	44	34	6	0
Mumblebone, 130389	-0.2	86	7	7	0	0	-0.1	0	43	50	7	0	-0.2	0	50	50	0	0	0.0	0	43	43	14	0
Mumblebone, 140026	0.2	50	36	11	3	0	0.1	0	25	68	7	0	-0.1	3	39	54	4	0	-0.1	3	43	43	11	0
Nerstane, 100919	-0.1	78	15	5	2	0	-0.1	0	38	62	0	0	0.0	0	40	52	8	0	-0.4	8	50	40	2	0
One Oak No. 2, R56	-0.1	76	11	11	2	0	-0.1	0	42	53	5	0	0.0	3	31	64	2	0	-0.4	9	53	31	7	0
Stockman Poll, 090853	-0.3	82	18	0	0	0	0.0	0	30	60	10	0	-0.2	3	55	40	2	0	-0.2	8	42	35	15	0
Terrick West Poll, 122220	-0.1	67	30	3	0	0	-0.2	0	44	52	4	0	0.1	0	33	63	4	0	-0.2	8	37	48	7	0
The Mountain Dam, 11/ESA004	0.1	62	25	9	4	0	-0.1	0	44	50	6	0	0.3	0	28	50	22	0	0.4	2	22	38	38	0
Trefusis, 110482	0.1	70	19	3	5	3	0.0	0	43	41	16	0	0.0	0	35	62	3	0	-0.2	2	49	38	11	0
Tuckwood Poll, 131026	-0.3	89	9	0	2	0	-0.1	0	37	60	3	0	0.2	0	26	63	11	0	0.1	0	26	63	11	0
Wallaloo Park Poll, 120912	-0.2	78	16	6	0	0	-0.3	0	56	44	0	0	-0.1	0	44	56	0	0	0.0	0	41	47	12	0
Woodyarrup, 120175	-0.2	85	4	11	0	0	0.0	0	33	56	11	0	-0.1	7	30	63	0	0	0.0	0	41	41	18	0
Yiddinga, 141989	0.2	47	37	16	0	0	0.4	0	15	53	32	0	0.1	0	21	79	0	0	0.1	10	16	53	21	0
Average performance	**1.5**	**69**	**19**	**9**	**3**	**0**	**2.8**	**0**	**35**	**55**	**10**	**0**	**2.7**	**2**	**37**	**56**	**5**	**0**	**2.7**	**4**	**34**	**46**	**16**	**0**

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 - *Post Weaning*												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
Centre Plus Poll, 707115	0.2	2	34	59	5	0	0.0	3	29	68	0	0	0.0	100	0	0	0	0	0.1	14	58	27	0	1	0	0
GRASS, 142194 (R4)	0.4	4	21	64	11	0	0.4	0	3	79	18	0	0.0	100	0	0	0	0	-0.1	22	63	15	0	0	0	0
Glen Holme, 141077 (Dohne)	0.4	0	13	87	0	0	0.2	0	13	79	8	0	0.0	99	0	0	0	0	-0.3	32	64	4	0	0	0	0
Greendale, 120012	-0.1	9	44	44	3	0	-0.1	9	25	66	0	0	0.0	100	0	0	0	0	-0.3	34	54	12	0	0	0	0
Greenfields Poll, 140345	0.0	0	50	50	0	0	0.1	5	20	65	10	0	0.1	98	0	0	0	2	-0.2	24	64	12	0	0	0	0
Greenland, 2.366	0.1	6	33	61	0	0	0.1	0	25	69	6	0	0.0	98	1	0	0	0	-0.1	22	59	19	0	0	0	4
Hannaton Poll, 120046	-0.1	10	48	42	0	0	-0.2	10	30	60	0	0	0.0	94	4	1	0	0	0.6	4	41	46	8	1	0	0
Hazeldean, 11.3542	-0.1	3	56	41	0	0	0.0	2	23	72	3	0	0.0	99	0	0	0	0	-0.4	46	41	13	0	0	0	0
Kiandra Poll, 140757	-0.1	7	57	33	3	0	-0.2	7	40	50	3	0	0.0	100	0	0	0	0	0.2	9	58	31	2	0	0	0
Kooringal, 130519	0.2	6	37	46	11	0	-0.1	0	46	51	3	0	0.0	97	2	0	0	0	0.0	24	52	24	0	0	0	2
Kurra-Wirra, SB5585	-0.2	11	59	26	4	0	0.0	3	26	67	4	0	0.0	95	5	0	0	0	0.1	15	52	33	0	0	0	0
Leahcim Poll, 090918	0.2	0	42	53	5	0	-0.2	3	50	44	3	0	0.0	97	0	0	0	1	-0.1	23	60	16	0	1	0	1
Melrose, 12UGB060	-0.2	7	59	34	0	0	-0.1	4	34	59	3	0	0.0	100	0	0	0	0	0.0	18	59	23	0	0	0	0
Mumblebone, 130389	-0.2	0	71	29	0	0	-0.1	0	36	64	0	0	0.0	95	5	0	0	0	0.1	13	58	29	0	0	0	0
Mumblebone, 140026	0.0	4	46	46	4	0	0.0	3	29	64	4	0	0.0	100	0	0	0	0	-0.3	36	52	12	0	0	0	0
Nerstane, 100919	-0.3	3	75	22	0	0	0.0	0	38	57	5	0	0.0	98	1	1	0	0	0.4	6	47	40	7	0	0	0
One Oak No. 2, R56	-0.4	11	69	20	0	0	-0.2	3	44	53	0	0	0.0	97	0	0	0	0	-0.2	24	66	10	0	0	0	0
Stockman Poll, 090853	-0.2	8	60	32	0	0	-0.1	10	25	62	3	0	0.0	97	2	0	0	1	0.0	23	52	24	1	0	0	0
Terrick West Poll, 122220	0.0	4	52	44	0	0	0.2	0	22	70	8	0	0.0	98	0	0	0	0	0.3	14	46	36	3	1	0	0
The Mountain Dam, 11/ESA004	0.2	7	31	53	9	0	0.2	0	19	72	9	0	0.0	100	0	0	0	0	0.1	13	56	31	0	0	0	1
Trefusis, 110482	-0.1	5	54	41	0	0	0.0	2	22	76	0	0	0.0	99	0	0	1	0	0.2	17	50	28	5	0	0	0
Tuckwood Poll, 131026	0.1	0	49	49	2	0	0.2	0	26	63	11	0	0.0	100	0	0	0	0	-0.3	32	61	7	0	0	0	0
Wallaloo Park Poll, 120912	0.0	0	56	44	0	0	0.0	0	38	56	6	0	0.0	96	2	2	0	0	0.1	11	62	25	2	0	0	0
Woodyarrup, 120175	0.1	0	52	41	7	0	-0.3	4	48	48	0	0	0.0	100	0	0	0	0	-0.2	29	60	11	0	0	0	0
Yiddinga, 141989	0.1	0	47	53	0	0	0.2	0	32	47	21	0	0.0	98	0	0	2	0	0.0	20	64	14	0	2	0	0
Average performance	**2.5**	**4**	**49**	**45**	**2**	**0**	**2.7**	**2**	**30**	**63**	**5**	**0**	**1.0**	**98**	**2**	**0**	**0**	**0**	**2.0**	**21**	**56**	**22**	**1**	**0**		

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 - *Post Weaning*																											
	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
Centre Plus Poll, 707115	0.0	100	0	0	0	0	0.0	0	76	24	0	0	-0.1	78	20	2	0	0	0.2	0	15	83	2	0	-0.4	18	62	18	2	0
GRASS, 142194 (R4)	0.0	100	0	0	0	0	0.2	0	54	46	0	0	0.0	68	32	0	0	0	-0.3	0	57	43	0	0	-0.2	22	39	39	0	0
Glen Holme, 141077 (Dohne)	0.0	100	0	0	0	0	-0.1	0	82	18	0	0	0.0	69	31	0	0	0	-0.4	0	64	36	0	0	0.1	2	54	36	8	0
Greendale, 120012	0.0	100	0	0	0	0	0.0	0	72	28	0	0	0.1	62	34	4	0	0	0.2	3	6	91	0	0	0.4	4	31	53	9	3
Greenfields Poll, 140345	0.0	100	0	0	0	0	-0.1	0	89	11	0	0	0.2	55	40	5	0	0	0.2	0	11	89	0	0	-0.3	30	35	30	5	0
Greenland, 2.366	0.0	100	0	0	0	0	0.0	0	72	28	0	0	0.0	66	34	0	0	0	0.0	0	28	72	0	0	0.0	20	29	40	11	0
Hannaton Poll, 120046	0.0	100	0	0	0	0	0.0	0	80	20	0	0	0.1	62	38	0	0	0	-0.1	0	35	65	0	0	0.0	18	28	50	4	0
Hazeldean, 11.3542	0.0	100	0	0	0	0	-0.1	0	85	15	0	0	0.0	72	28	0	0	0	0.3	0	3	97	0	0	0.6	2	21	49	28	0
Kiandra Poll, 140757	0.1	97	0	0	0	3	0.0	0	77	23	0	0	0.1	60	40	0	0	0	0.0	0	27	73	0	0	-0.2	17	53	27	3	0
Kooringal, 130519	0.0	100	0	0	0	0	0.0	0	71	29	0	0	-0.1	78	19	3	0	0	0.2	0	6	94	0	0	0.4	10	31	28	31	0
Kurra-Wirra, SB5585	0.0	100	0	0	0	0	0.0	0	78	22	0	0	0.0	74	26	0	0	0	0.2	0	11	85	4	0	0.0	7	48	41	4	0
Leahcim Poll, 090918	0.0	100	0	0	0	0	0.0	0	78	22	0	0	0.0	72	28	0	0	0	0.0	0	28	72	0	0	-0.8	47	50	3	0	0
Melrose, 12UGB060	0.0	100	0	0	0	0	0.2	0	62	34	4	0	0.2	62	28	10	0	0	-0.2	3	47	50	0	0	0.6	0	22	59	16	3
Mumblebone, 130389	0.0	100	0	0	0	0	0.1	0	64	36	0	0	-0.2	86	14	0	0	0	0.1	0	21	79	0	0	-0.8	43	57	0	0	0
Mumblebone, 140026	0.1	96	0	4	0	0	-0.2	0	93	7	0	0	-0.3	96	4	0	0	0	-0.4	0	68	32	0	0	-0.8	41	59	0	0	0
Nerstane, 100919	0.0	100	0	0	0	0	-0.1	0	88	12	0	0	-0.1	79	21	0	0	0	-0.1	0	38	62	0	0	0.5	7	13	59	21	0
One Oak No. 2, R56	0.0	100	0	0	0	0	0.0	0	80	20	0	0	0.2	59	27	14	0	0	0.2	0	11	89	0	0	0.6	0	27	45	23	5
Stockman Poll, 090853	0.0	100	0	0	0	0	0.0	0	72	28	0	0	0.0	72	28	0	0	0	0.0	0	25	75	0	0	0.2	2	38	55	5	0
Terrick West Poll, 122220	0.0	100	0	0	0	0	-0.1	0	89	11	0	0	0.1	63	33	4	0	0	0.1	0	22	70	8	0	0.2	3	37	56	4	0
The Mountain Dam, 11/ESA004	0.0	100	0	0	0	0	-0.1	0	88	6	6	0	-0.2	88	12	0	0	0	0.1	0	16	84	0	0	-0.2	16	50	31	3	0
Trefusis, 110482	0.0	100	0	0	0	0	0.0	0	76	24	0	0	0.2	46	54	0	0	0	0.2	3	8	89	0	0	0.1	2	49	41	8	0
Tuckwood Poll, 131026	0.0	100	0	0	0	0	-0.1	0	86	14	0	0	0.1	66	31	3	0	0	-0.3	2	49	49	0	0	-0.3	17	54	29	0	0
Wallaloo Park Poll, 120912	0.0	100	0	0	0	0	0.1	0	69	28	3	0	-0.2	91	9	0	0	0	0.1	3	16	81	0	0	-0.2	16	56	22	6	0
Woodyarrup, 120175	0.0	100	0	0	0	0	0.2	0	56	44	0	0	0.0	81	11	8	0	0	-0.2	0	44	56	0	0	-0.3	15	59	26	0	0
Yiddinga, 141989	0.0	100	0	0	0	0	0.0	0	74	26	0	0	0.0	72	28	0	0	0	-0.2	0	53	47	0	0	0.7	0	22	50	22	6
Average performance	**1.0**	**100**	**0**	**0**	**0**	**0**	**2.2**	**0**	**76**	**24**	**0**	**0**	**1.3**	**71**	**27**	**2**	**0**	**0**	**2.7**	**0**	**28**	**71**	**1**	**0**	**2.4**	**14**	**41**	**35**	**9**	**1**

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																							
	Breech Cover *Marking*						Breech Wrinkle *Marking*						Dag						Urine					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5
Centre Plus Poll, 707115	-0.4	5	15	29	40	11	-0.2	15	44	33	7	1												
GRASS, 142194 (R4)	-0.1	1	10	39	28	22	-0.4	20	51	23	6	0												
Glen Holme, 141077 (Dohne)	-0.3	6	10	39	25	20	-0.5	24	48	21	6	1												
Greendale, 120012	0.3	0	3	24	42	31	0.9	0	17	34	32	17												
Greenfields Poll, 140345	0.0	5	7	21	43	24	-0.2	14	48	29	7	2												
Greenland, 2.366	0.0	4	5	33	34	24	0.0	13	32	37	15	3												
Hannaton Poll, 120046	-0.2	4	8	38	34	16	0.3	3	30	42	20	5												
Hazeldean, 11.3542	0.4	0	0	25	42	33	0.4	9	20	45	18	8												
Kiandra Poll, 140757	-0.4	2	9	46	39	4	-0.1	9	43	39	9	0												
Kooringal, 130519	-0.4	7	6	47	26	14	0.0	4	46	35	12	3												
Kurra-Wirra, SB5585	-0.1	2	10	33	33	22	0.3	5	31	41	16	7												
Leahcim Poll, 090918	-0.6	6	17	44	23	10	-1.1	56	36	8	0	0												
Melrose, 12UGB060	0.5	0	1	22	32	45	0.7	4	17	36	30	13	DAG and URINE not yet scored											
Mumblebone, 130389	0.2	0	2	29	45	24	-0.3	26	34	26	14	0												
Mumblebone, 140026	-0.1	0	5	40	41	14	-0.6	30	48	18	4	0												
Nerstane, 100919	-0.1	4	8	30	36	22	0.0	10	40	33	12	5												
One Oak No. 2, R56	0.7	0	0	17	22	61	0.9	2	15	33	30	20												
Stockman Poll, 090853	-0.2	2	11	40	28	19	0.1	9	32	39	17	3												
Terrick West Poll, 122220	0.2	1	3	29	31	36	0.3	7	24	46	20	3												
The Mountain Dam, 11/ESA004	0.2	0	1	29	46	24	-0.3	19	39	35	5	2												
Trefusis, 110482	0.2	1	1	33	33	32	0.3	15	15	40	25	5												
Tuckwood Poll, 131026	0.0	0	7	38	32	23	0.0	5	45	38	11	1												
Wallaloo Park Poll, 120912	0.0	3	2	38	36	21	-0.4	24	40	27	7	2												
Woodyarrup, 120175	-0.1	3	9	28	40	20	-0.3	20	43	23	12	2												
Yiddinga, 141989	0.0	0	2	40	38	20	0.2	8	24	48	16	4												
Average performance	**3.7**	**2**	**6**	**33**	**35**	**24**	**2.6**	**14**	**34**	**33**	**14**	**5**												

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 kg P^	CFW kg P	FD µm P	FDCV % P	SL mm	SS N/ktex	WT kg W	WT kg P	FAT mm	EMD mm
Centre Plus Poll, 707115	39	0.0	0.0	0.2	0.0	SS and SL not currently available		-0.7	0.0	FAT and EMD not yet measured	
GRASS, 142194 (R4)	27	0.0	0.0	1.2	0.9			0.5	0.5		
Glen Holme, 141077 (Dohne)	40	-0.1	-0.1	0.4	-0.3			1.4	1.7		
Greendale, 120012	32	0.0	-0.1	-0.9	0.7			-0.9	-1.6		
Greenfields Poll, 140345	20	0.0	0.0	0.2	0.0			1.1	1.7		
Greenland, 2.366	35	0.0	0.0	0.8	-0.9			-0.6	-0.3		
Hannaton Poll, 120046	40	0.0	0.0	-0.6	-0.3			-0.8	-0.4		
Hazeldean, 11.3542	38	0.2	0.1	-0.4	-0.4			-0.3	-0.8		
Kiandra Poll, 140757	30	-0.1	-0.1	-0.5	0.5			0.6	1.4		
Kooringal, 130519	34	-0.1	-0.1	-0.5	-0.7			-1.1	-1.8		
Kurra-Wirra, SB5585	25	0.2	0.1	0.3	-0.5			-0.3	-0.5		
Leahcim Poll, 090918	35	-0.1	-0.1	0.0	0.0			0.5	0.5		
Melrose, 12UGB060	32	0.1	0.1	-0.2	0.5			-0.5	-1.7		
Mumblebone, 130389	14	-0.1	-0.1	0.5	-1.7			-0.9	-0.4		
Mumblebone, 140026	28	0.0	0.0	0.3	-1.5			0.0	1.8		
Nerstane, 100919	40	0.2	0.1	0.2	-0.6			0.2	0.0		
One Oak No. 2, R56	44	0.0	0.0	-0.2	2.5			-0.5	-1.1		
Stockman Poll, 090853	39	0.0	0.0	-0.1	0.9			-1.1	-1.4		
Terrick West Poll, 122220	26	-0.1	0.0	0.1	0.9			1.6	1.2		
The Mountain Dam, 11/ESA004	30	0.0	0.0	-0.3	0.6			-0.5	0.4		
Trefusis, 110482	37	0.1	0.0	-0.1	0.9			-0.8	-1.8		
Tuckwood Poll, 131026	35	0.0	0.0	-0.1	-1.2			1.5	2.0		
Wallaloo Park Poll, 120912	32	0.0	0.0	-0.7	0.3			-1.0	-1.0		
Woodyarrup, 120175	27	0.2	0.2	0.2	-0.2			1.3	0.9		
Yiddinga, 141989	19	0.0	0.0	0.3	-0.2			1.1	0.6		
Progeny group average	**31**	**1.9** kg	**1.3** kg	**15.4** µm	**19.0** %	mm	N/ktex	**24.2** kg	**25.8** kg	mm	mm

^ 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

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

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

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

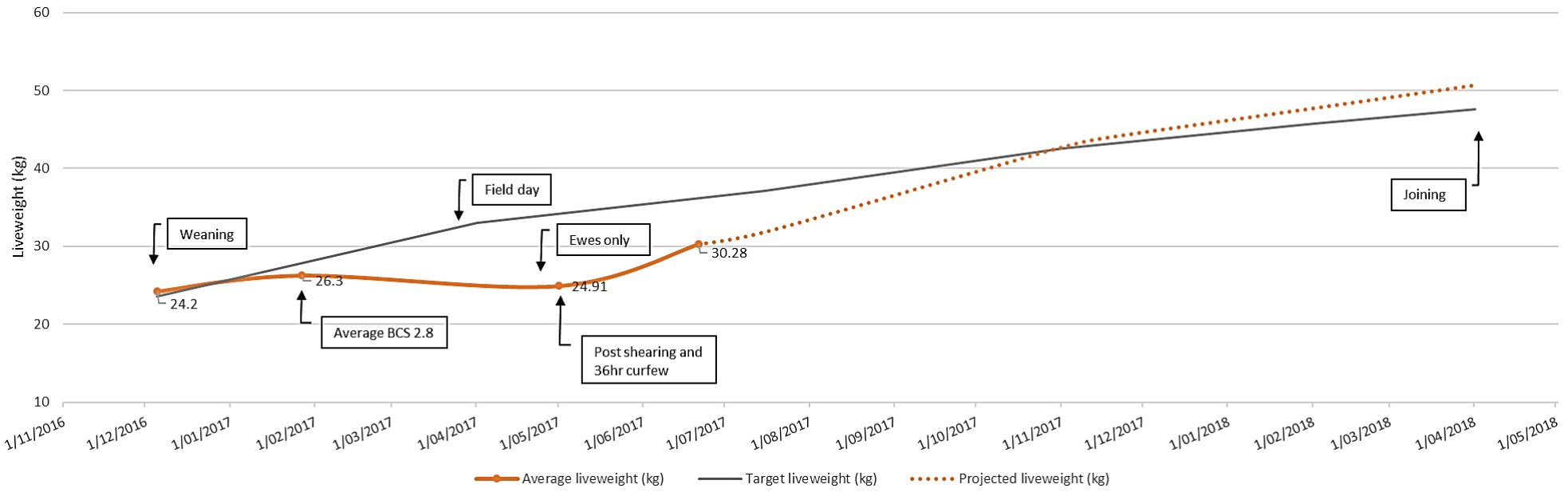
Combined visual trait performance is calculated as:

(Classer's Visual Grade Tops% – Culls%)/5, expressed as a deviation from (average Tops% – 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 = 119.7.0 – 100 = 19.7
Combined Visual = ((25.5 – 17.6)/5) – ((25.1 – 16.4)/5)
= 7.9/5 – 8.7/5 = 1.58 – 1.74 = -0.1

TULOONA 2016 DROP MLP EWE LAMB LIVEWEIGHT PROGRESS



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Elders Balmoral

2016 Drop
Post Weaning Assessment

Merino Lifetime Productivity Project Site