North East Victoria

2015 Drop
Adult Assessment

Within-Site Results

Conducted by

North East Victoria Stud Merino Breeders Inc

under the auspices of

The Australian Merino Sire Evaluation Association

with support from

Riverina Wool Testers

July 2017

Disclaimer

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

Foreword

North East Victoria (Seymour) ~ Central Test Sire Evaluation

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

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

The North East Victoria Sire Evaluation started in 1997. The 2015 drop progeny are the seventeenth evaluation since 1997. Ewes are randomly allocated, ensuring an even number of each age group is allocated to each sire.

Current Members of the Site Committee

Name	Phone	Position on committee
Murray McKenzie	03 5766 6278	Chairperson
Phil Toland	03 5798 1247	
David Freeman	03 5792 3693	Site Manager
Gary McLarty	03 5792 3719	Data Manager
Anna Toland	0438 981 605	Secretary

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Sire and Owner Details

Breeders flock, Sire name Sire ID #, Breed †	Contact Details
Arapiles Plains Poll, 140022 601511-2014-140022, Poll Merino	**Brian Klowss** PO Box 21, Natimuk VIC 3409 P: (03) 5387 1334, M: 0428 19 0937, E: bkklowss@gmail.com
Connewarran, 062097 (Link) 504704-2006-062097, Merino	**Hamish Weatherly** Connewarran, PO Box 21, Mortlake VIC 3272 P: (03) 5599 7276, M: 0423 07 3328, E: hamishweatherly@hotmail.com
Cahirblonig, 130183 504214-2013-130183, Merino	**Matthew Ipsen** 912 Maryborough - St Arnaud Rd, Wareek VIC 3465 P: (03) 5461 2016, M: 0417 51 6640, E: ewewish@bigpond.com
Cressbrook, 110503 (Link) 502302-2011-110503, Merino	**Lach Fulloon** Cressbrook, 437 Enmore Rd, Armidale NSW 2350 P: (02) 6775 1217, M: 0427 75 1217, E: cressbrk@bigpond.com
Glenrannoch, 012289 (Unreg) 509189-2012-012289, Merino	**Alistair Lade** Glenrannoch, 101 Lade Rd, Seymour VIC 3660 P: (03) 5796 9276, M: 0429 96 9276, E: al_lade@bigpond.com
Kilfeera Park, 130023 503425-2013-130023, Merino	**Murray & Fiona McKenzie** 131 Brock Rd, Lurg VIC 3673 P: (03) 5766 6278, M: 0428 48 1961, E: kilpark@people.net.au
Kilfeera Park, 130048 (Link) 503425-2013-130048, Merino	**Murray & Fiona McKenzie** 131 Brock Rd, Lurg VIC 3673 P: (03) 5766 6278, M: 0428 48 1961, E: kilpark@people.net.au
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, 130850 (Link) 500063-2013-130850, Merino	**Chad Taylor** Marapana, 456 Wuuluman Road, Wellington NSW 2820 P: (02) 6845 3620, M: 0458 45 3608, E: chad@mumblebone.com.au
One Oak No. 2, 130004 503855-2013-130004, Merino	**Jock MacRae** 275 Metcalfe-Redesdale Rd, Metcalfe VIC 3448 P: (03) 5423 2222, M: 0438 51 1931, E: jockmacrae@bigpond.com
Toland Poll, 141102 601082-2014-141102, Poll Merino	**Phil Toland** 1888 Feltrim Rd, Violet Town VIC 3669 P: (03) 5798 1650, M: 0429 98 1605, E: tolandmerino@bigpond.com
Toland, 449 (Hist) 504485-1996-96G449, Merino	**Phil Toland** 1888 Feltrim Rd, Violet Town VIC 3669 P: (03) 5798 1650, M: 0429 98 1605, E: tolandmerino@bigpond.com
Trigger Vale Poll, 140968 609251-2014-140968, Poll Merino	**Andrew and Mandi Bouffler** Connewarran, PO Box 21, Mortlake VIC 3272 P: (02) 6920 7656, M: 0427 20 7656, E: info@triggervalesheepstuds.com.au

(Hist) Historical Sires evaluated under AMSEA's R&D project to validate the system of linkage in MERINOSELECT that has operated over the past 15-20 years. These sires were generally widely used 15-20 years ago and were selected for the R&D program based on their high ASBV accuracies.

(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

2015 Drop Assessment

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

The Post Weaning fleece, including shearing assessments were made at 9 months of age with 9 months of wool growth.

The Adult fleece, including shearing, and visual assessments were made at 18 months of age with 9 months of wool growth.

Manager's Report

Host Property for 2015 drop progeny and location

"Kulaba' is located 9.5 km east of Seymour on Highlands road Seymour, running self-replacing fine wool Merinos. The property is 1600 ha of undulating to steep ironstone hills. "Kulaba' has an average rainfall of 600 mm (592 mm over the last 9 years).

The breeding objective is for a good medium size ewe to handle the difficult terrain and produce 100% lambs. The aim is to produce 1 kg wool per 10 kg body weight with an average of 18.5 micron and with a long, bright and crimpy staple.

Ewe Base

The Kulaba flock averages 18.5 micron. The property joins 2500 to 3000 ewes annually and running wethers on for three years in optimum seasons.

The ewe base is principally Toland and Nerstane bloodline. Approximately 100 ewes are classed annually to join to stud rams or AI to breed rams for joining to the rest of the commercial flock.

A mob of 626 ewes from the mixed age group were selected for the sire evaluation program. The ewes were AI'd on 18 March 2015. A total of 12 sires were joined to an average of 50 ewes each.

Pregnancy and lambing and weaning

The ewes were scanned on 20 May 2015 and identified as 139 multiples; 242 single bearing ewes and 221 dry ewes or lambing to back up rams. The ewes lambed down in good condition score 3. Ewes were separated into sire joining groups in twelve paddocks for lambing but mobbed back into larger paddocks after tagging. Lambing commenced on the 11 August 2015.

Lambs were tagged, weighed and wrinkle scored on 11 September 2015 and dry ewes removed. On the 15 October 2015 lambs were marked, mulesed and vaccinated (6:1 and Gudair).

Lambs were imprint fed on ewes post lamb marking and were fed at a low rate (1 kg/hd/week) until mid-April 2016.

Lambs were weaned on 2 December 2015 and weighed on 9 December 2015
.
The weaners were crutched, dosed with selenium pellets, and weighed on 10 March 2016 . A post weaning shearing was conducted on May 20, 2016. Fleece weights were recorded and weaners were dipped with Piranha on 14 June 2016.

WEC samples were taken at carcase scanning on 10 November 2016.

A full assessments of the progeny was conducted on 6 March 2017 with shearing on 7 March 2017.

Manager's Report

Seasonal conditions

The season over lambing in 2015 was generally ordinary in the district but there was ample feed for lambing due to the some destocking of wethers on the main commercial enterprise. The lambs were provided with some supplementation from tagging to mid-April 2016 when there was good availability of green feed. Lamb growth rates were therefore good. The spring in 2016 was exceptional and was followed by an early autumn break in 2017.

Rainfall

Month	2014	2015	2016	Average
January	12	45	182	49.9
February	12.5	39	23	50.9
March	57	8	58.5	56.7
April	65	37	21	38.5
May	58.5	38.5	68	41.6
June	75.5	28.5	62.5	44.8
July	57.5	67	71	66.9
August	10.5	30	75	55.7
September	63	28	117.5	48.4
October	7.5	14	66	28.6
November	70.5	31.5	47	65.7
December	14.5	24	104.5	43.7
Total	**504**	**390.5**	**906.4**	**591.6**

Assessment and Management Program

Activity		Date/s	Age	Wool
Selection of ewes		January 2015		
Allocation of ewes for mating		March 2015		
AI		18 March 2015		
Pregnancy scanning		20 May 2015		
Lambing: start – finish		11 August – 22 August 2015		
Tagging, pigmentation and breech scoring		11 September 2015	31 days	
Lambing mobs boxed to one management group		11 September 2015	31 days	
Marking		15 October 2015	65 days	
Weaning		2 December 2015	113 days	
Mid side fleece sampling	P	20 May 2016	9 months	9 months
	A	7 March 2017	18 months	9 months
Visual trait scoring	A	7 March 2017	18 months	9 months
Shearing	P	20 May 2016	9 months	9 months
	A	7 March 2017	18 months	9 months
Fat and eye muscle scanning	H	10 November 2016	15 months	
Worm egg count sampling	H	10 November 2016	15 months	
Body weighing	W	9 December 2015	120 days	
	P	9 March 2016	7 months	
	H	10 November 2016	15 months	
	A	6 March 2017	18 months	
Vaccination	At marking, weaning and annual booster of 6 in1			
Drench	Worm burdens monitored and progeny drenched when required. Drenched approx. once during the trial.			
Fly treatment	Treated with Clik® at marking. Dipped with Piranha June 2016.			
Supplementary feeding	1 kg/hd/week from lamb marking to mid-April 2016.			
Field day or public display	Field Day & Progeny Display– 16 March 2016.			

Visual Trait Assessment and Site Breeding Objective

Visual trait assessment
Visual Classer's Grade: Mr Ron Creek, Australian Wool Network
Trait Scores: Mr Dale Bruns, Australian Wool Network

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
Equal emphasis on fibre diameter reduction and an increase in fleece weight, also taking into consideration animals that had performed well for growth, structural soundness and wool quality traits such as staple length, colour and character. This objective would allow different sheep types to perform equally without bias against animals sired by a finer type or a stronger heavier type.

Sire Codes and Pedigrees

Sire code	Breeders flock, Sire number	Sheep Genetics ID	Sire of Sire
1	Arapiles Plains Poll, 140022	601511-2014-140022	Unknown
2	Cahirblonig, 130183	504214-2013-130183	Unknown
3	Connewarran, 062097	504704-2006-062097	Unknown
4	Cressbrook, 110503	502302-2011-110503	609182-2008-831327 (Centre Plus WA Poll, 831327)
5	Glenrannoch, 012289	509189-2012-012289	509189-2010-010154
6	Kilfeera Park, 130023	503425-2013-130023	504166-2010-100038 (Roseville Park, 100038)
7	Kilfeera Park, 130048	503425-2013-130048	504166-2010-100038 (Roseville Park, 100038)
8	Mumblebone, 130389	500063-2013-130389	601365-2009-090399
9	Mumblebone, 130850	500063-2013-130850	500063-2010-100186
10	One Oak No. 2, 130004	503855-2013-130004	503855-2011-BL0104 (One Oak No. 2, BL11-104)
11	Toland Poll, 141102	601082-2014-141102	601082-2007-071046 (Toland Poll, Blue 1046)
12	Toland, 449 (Hist)	504485-1996-96G449	Unknown
13	Trigger Vale Poll, 140968	609251-2014-140968	Unknown

(Hist) Historical Sires evaluated under AMSEA's R&D project to validate the system of linkage in MERINOSELECT that has operated over the past 15-20 years. These sires were generally widely used 15-20 years ago and were selected for the R&D program based on their high ASBV accuracies.

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.

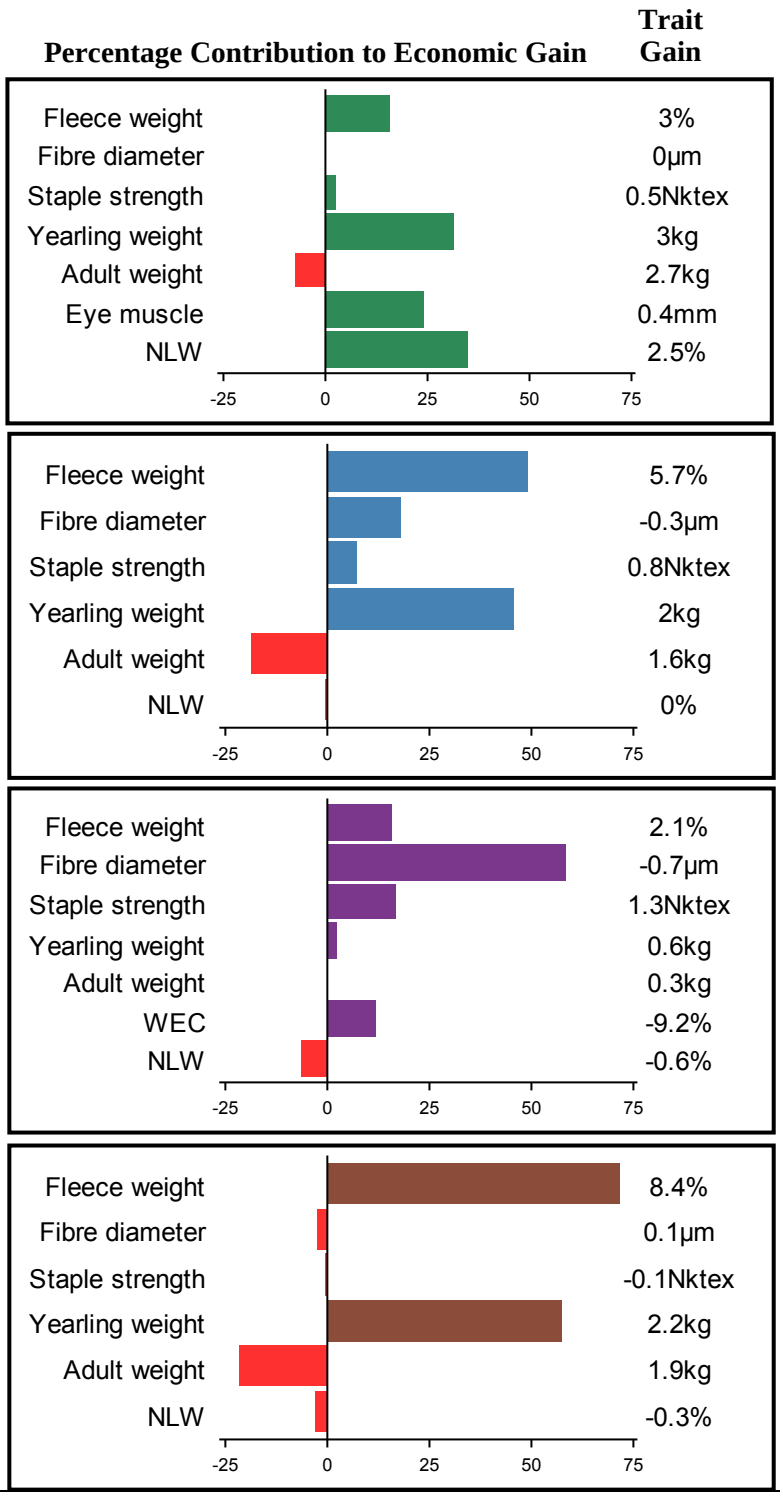


Table 1. **AMSEA Index Values and Classer's Visual Grade**

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 8) 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 % A^	Culls % A
1	Arapiles Plains Poll, 140022	43	104	108	101	113	1	11
2	Cahirblonig, 130183	28	98	87	82	93	12	-3
3	Connewarran, 062097	41	103	112	117	107	3	-2
4	Cressbrook, 110503	34	92	100	108	95	1	2
5	Glenrannoch, 012289	46	99	93	102	86	-6	14
6	Kilfeera Park, 130023	25	79	97	105	95	-15	-4
7	Kilfeera Park, 130048	13	94	96	99	93	-7	-8
8	Mumblebone, 130389	8	109	101	96	105	1	-3
9	Mumblebone, 130850	18	115	106	98	110	21	4
10	One Oak No. 2, 130004	33	101	122	117	122	-13	1
11	Toland Poll, 141102	15	88	93	100	89	19	-11
12	Toland, 449 (Hist)	41	96	96	92	99	-11	-4
13	Trigger Vale Poll, 140968	40	120	88	82	94	-6	3
	Average performance	**30**	**100**	**100**	**100**	**100**	**24**	**17**

^ 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%.

(Hist) Historical Sires evaluated under AMSEA's R&D project to validate the system of linkage in MERINOSELECT that has operated over the past 15-20 years. These sires were generally widely used 15-20 years ago and were selected for the R&D program based on their high ASBV accuracies.

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

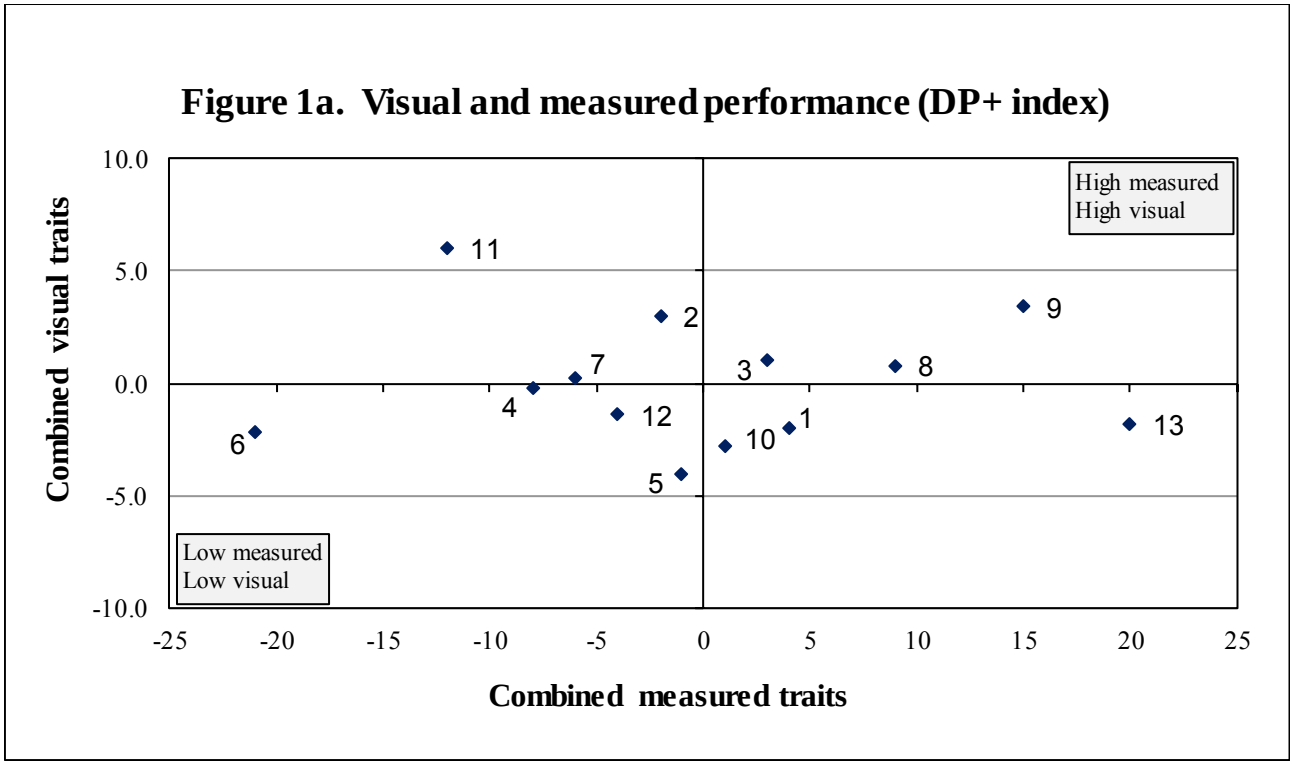


Figure 1b. Combined measured traits (MP+ index) and combined visually assessed traits for the site objective.

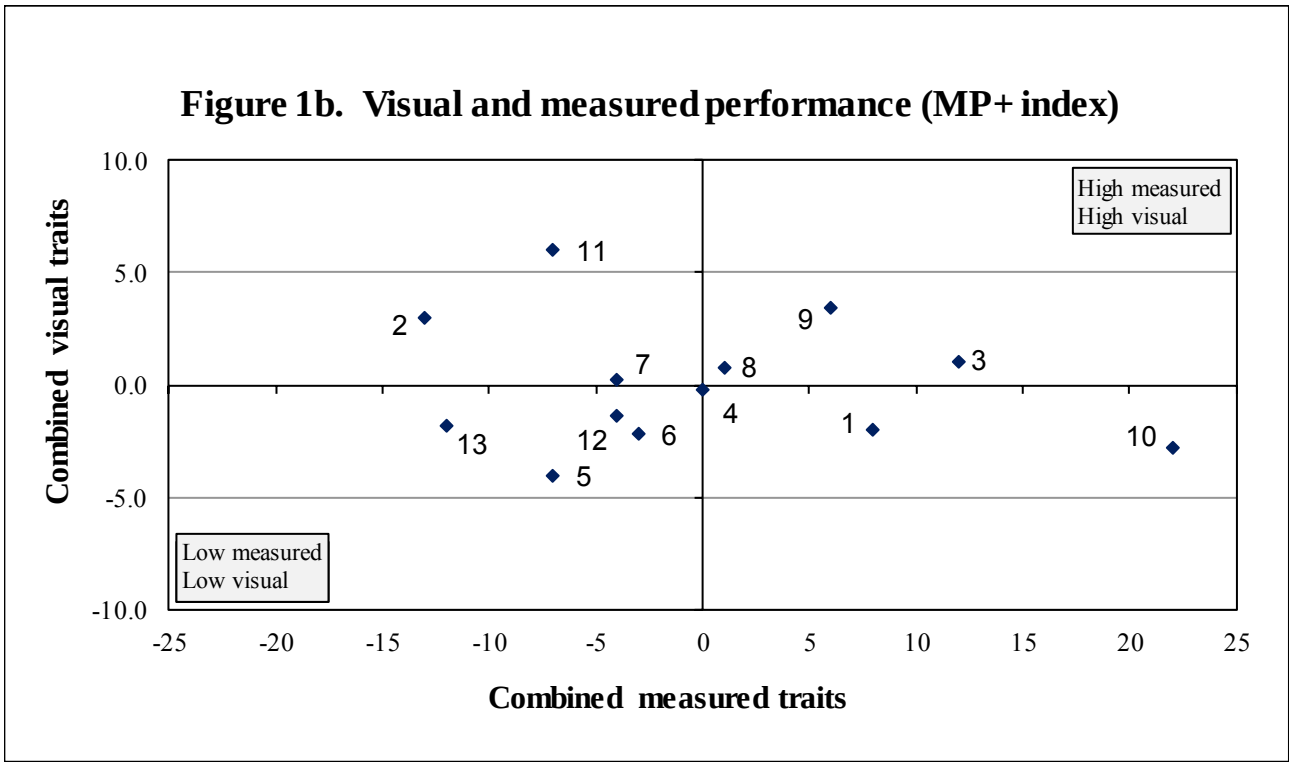


Figure 1c. Combined measured traits (FP+ index) and combined visually assessed traits for the site objective.

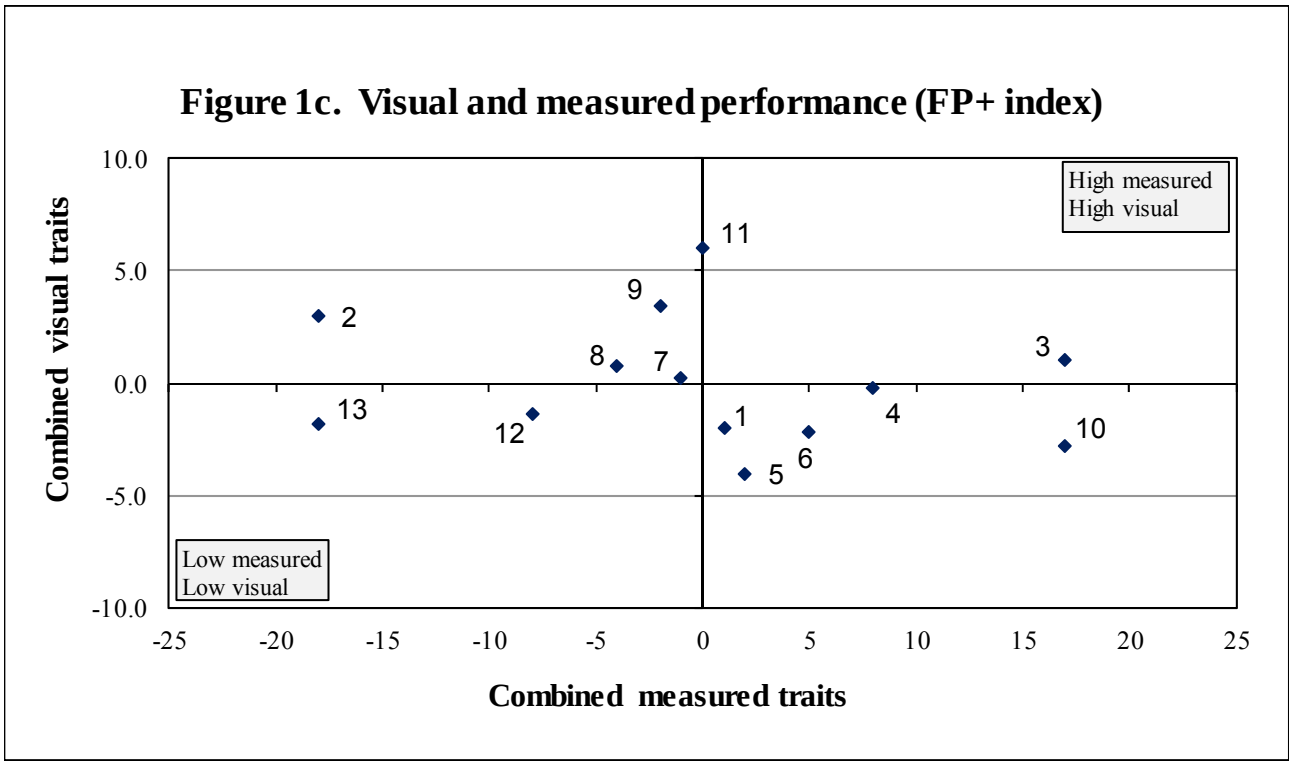
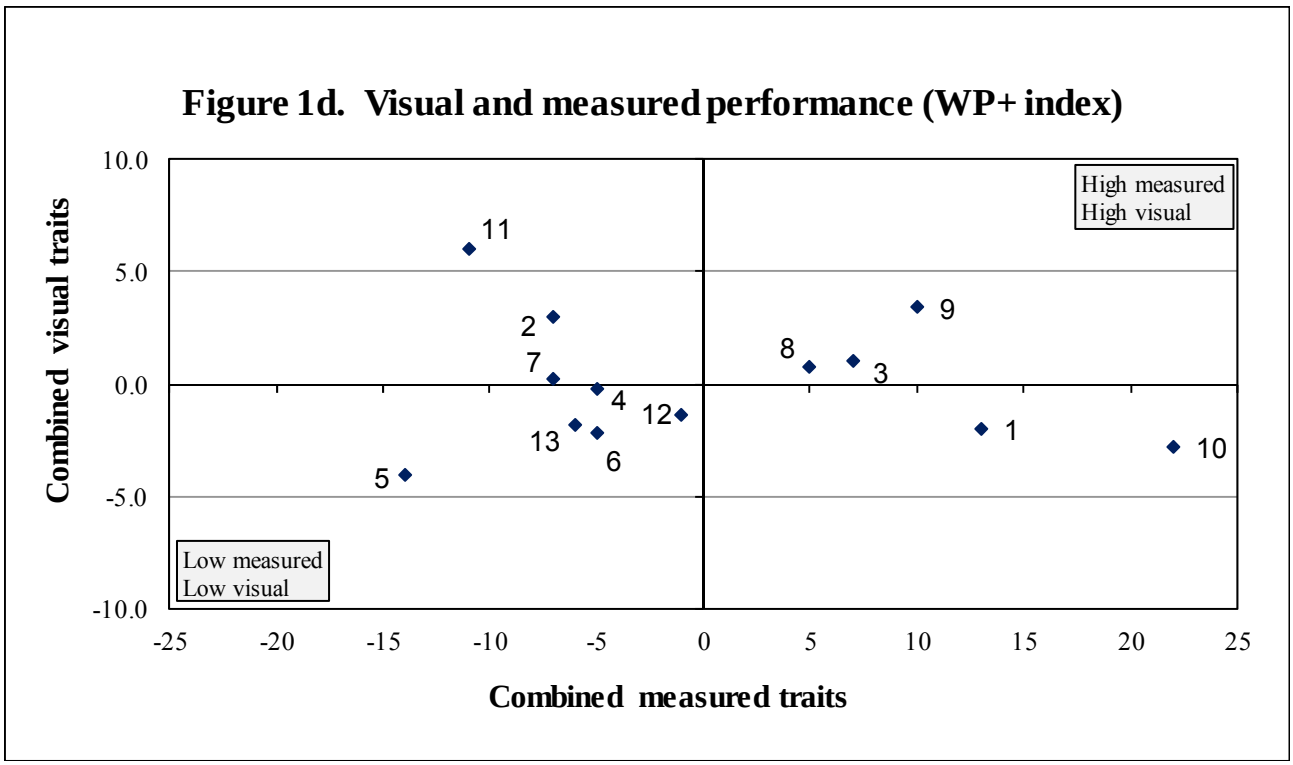


Figure 1d. Combined measured traits (WP+ index) and combined visually assessed traits for the site objective.



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.

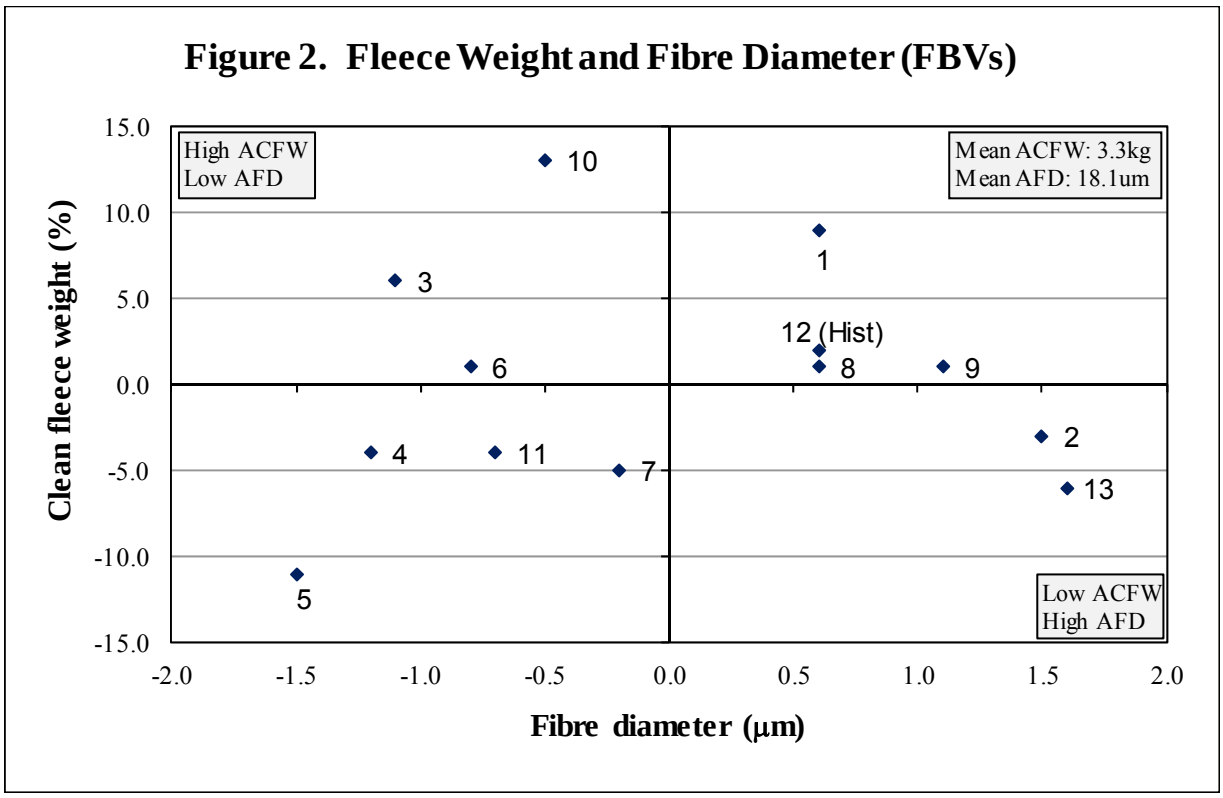
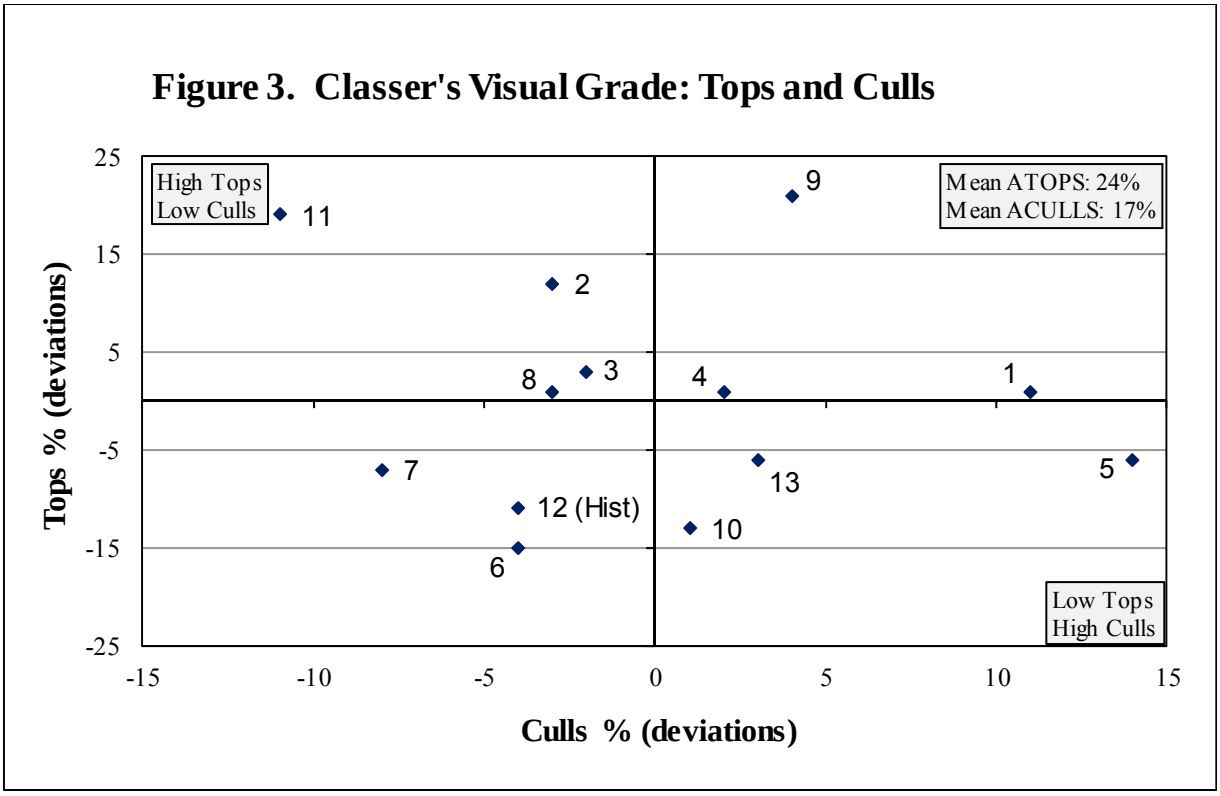


Figure 3. Classer's Visual Grade - Tops by Cull
The graph describes performance for Classer's Visual Tops Grade on the side axis and Culls Grade on the bottom axis. Sires that have above average Tops and below average Culls are in the top left hand quarter.



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.

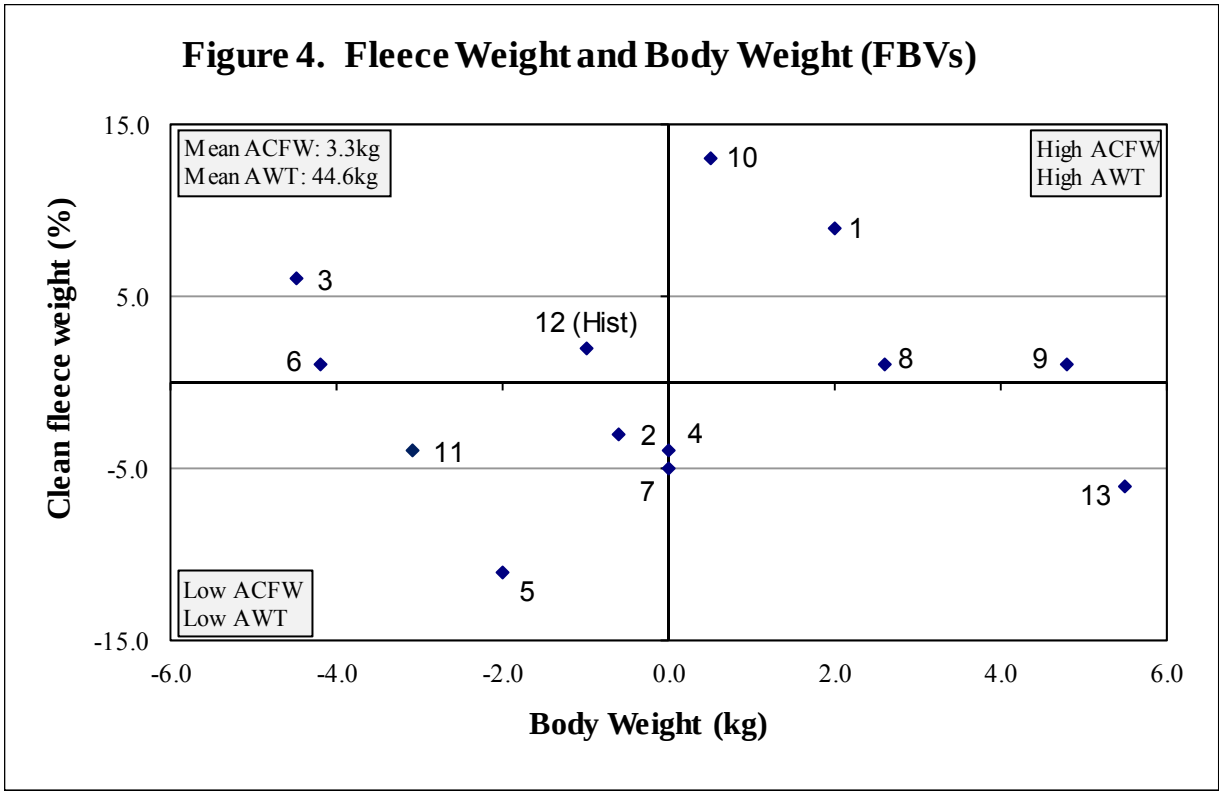
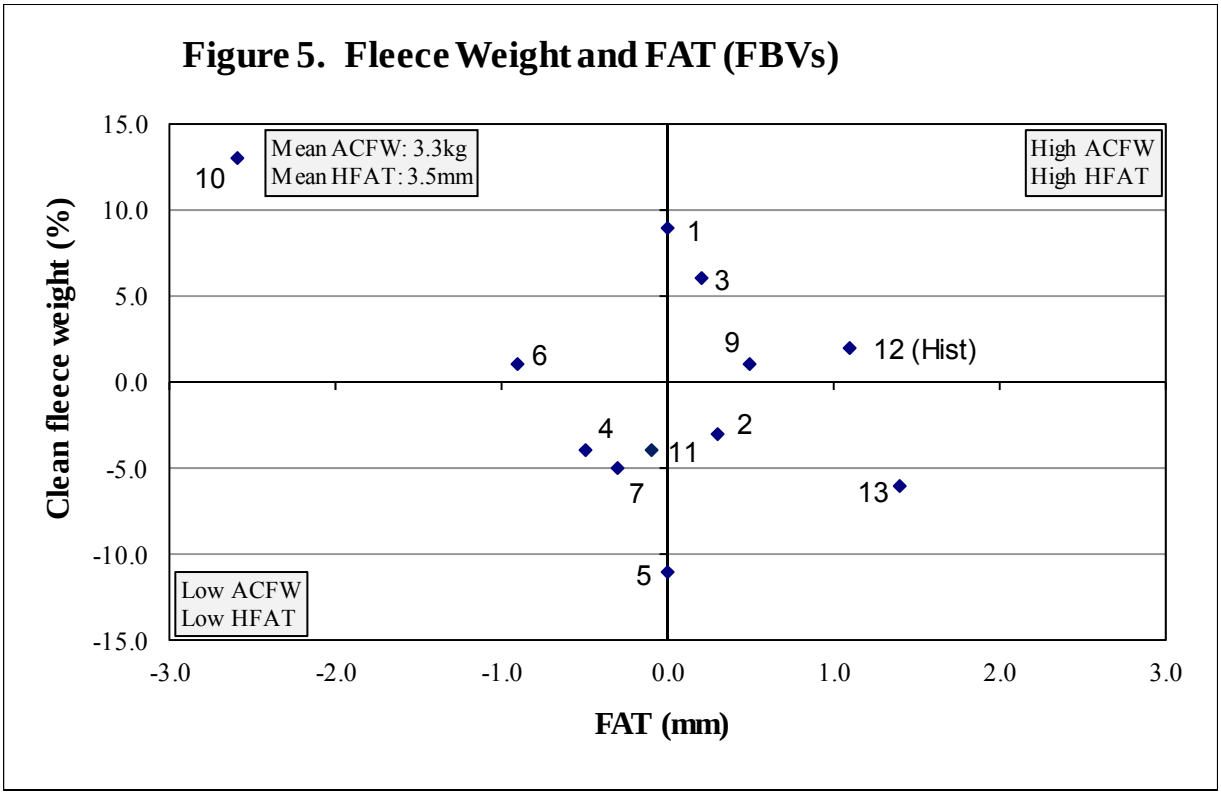


Figure 5. Fleece Weight and Fat (FBVs)
The graph describes performance for fleece weight on the side axis and fat depth on the bottom axis. Sires that are above average for fleece weight and above average for fat are located in the top right hand quarter.



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.

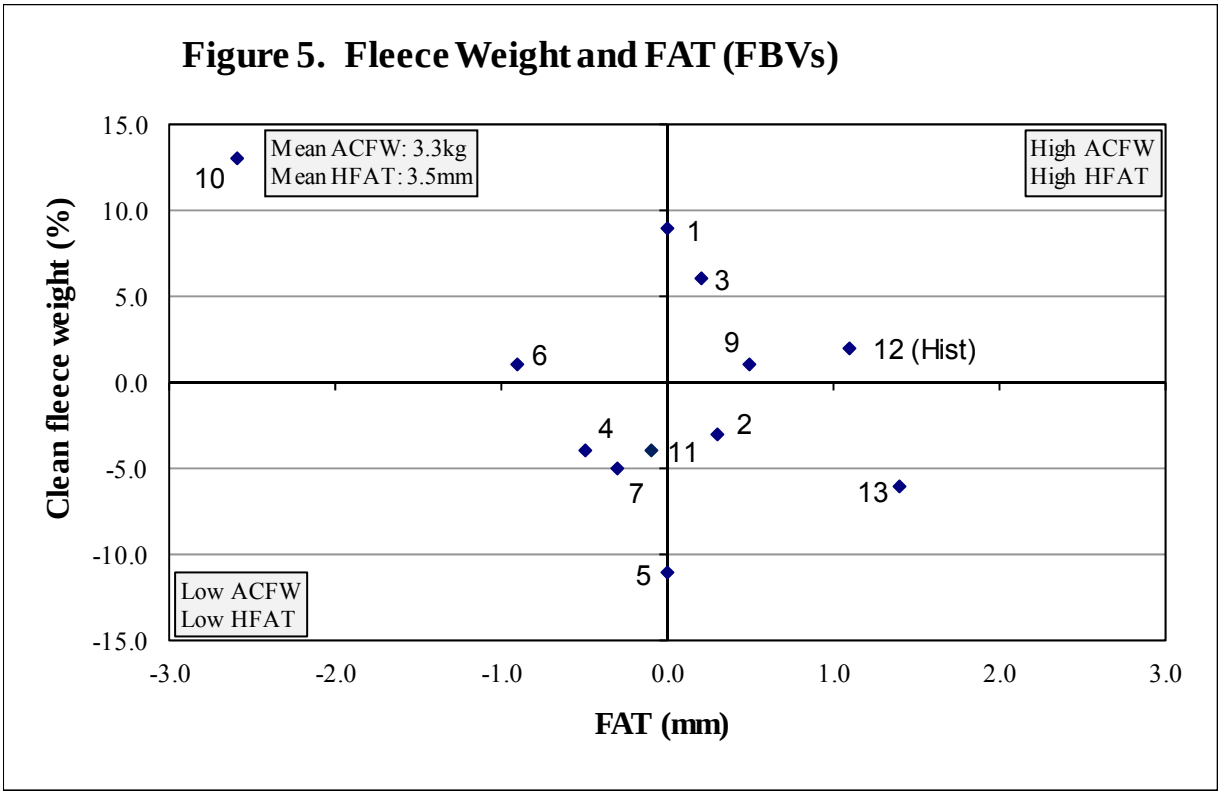
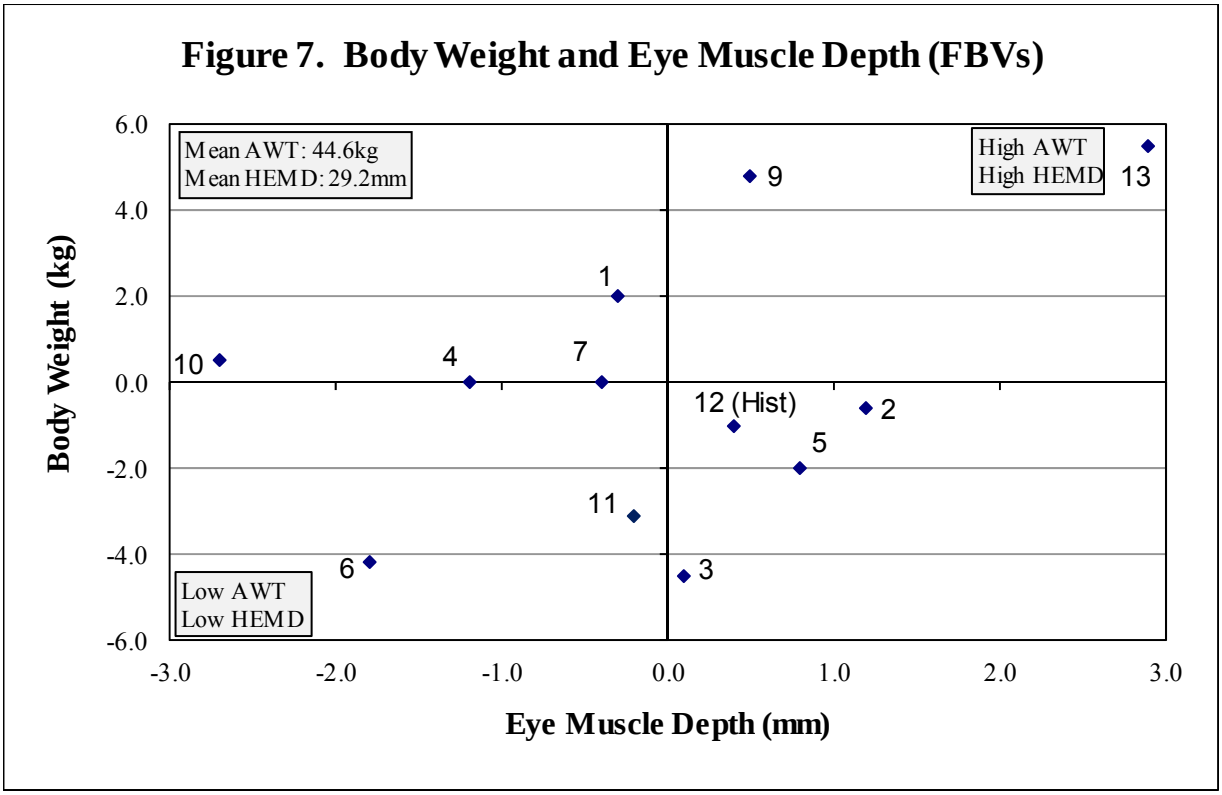
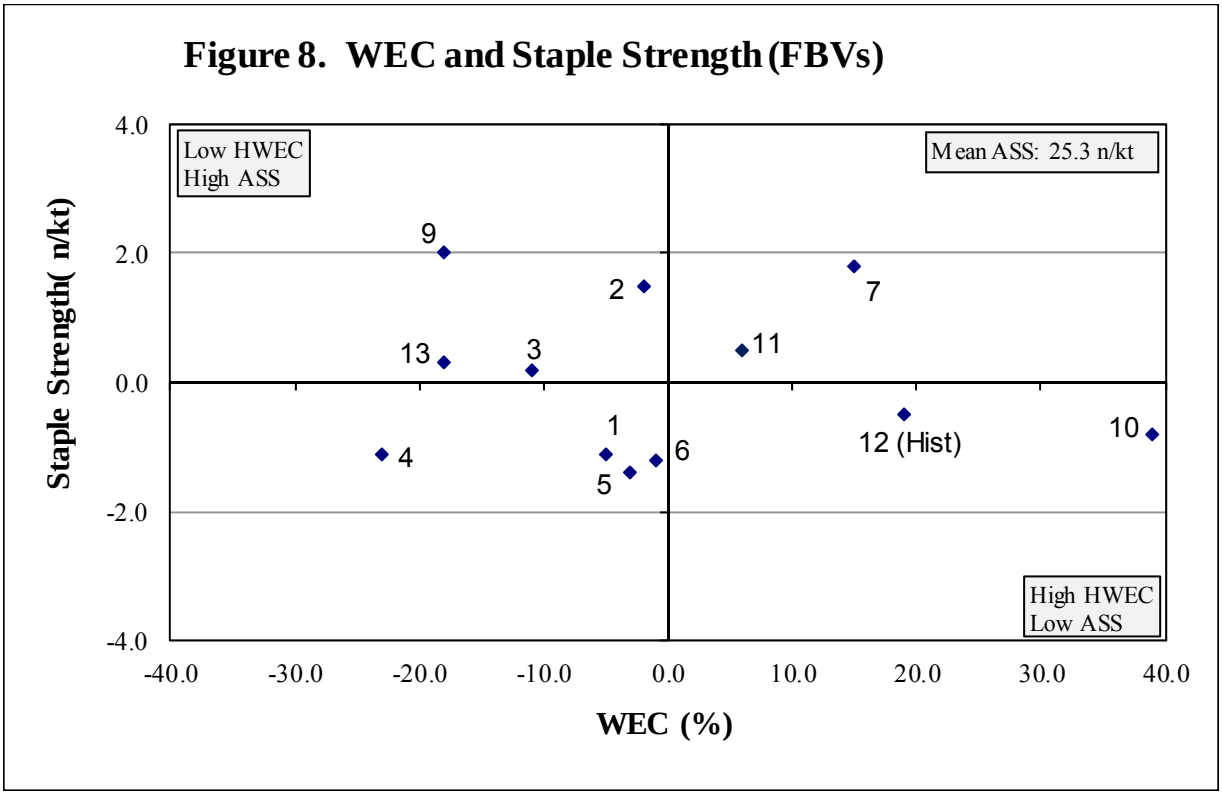


Figure 7. Body Weight and Eye Muscle Depth (FBVs)
The graph describes performance for body weight on the side axis and eye muscle depth on the bottom axis. Sires that are above average for body weight and above average for eye muscle depth are located in the top right hand quarter.



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.



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 7 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 µm		WT kg				Tops %	Culls %
			P^	A	A	P	A	W	P	H	A	A	A
1	Arapiles Plains Poll, 140022	43	9	8	9	0.2	0.6	0.7	0.8	2.0	2.0	1	11
2	Cahirblonig, 130183	28	6	-2	-3	1.3	1.5	1.0	0.8	-0.1	-0.6	12	-3
3	Connewarran, 062097	41	5	4	6	-1.1	-1.1	-1.5	-2.5	-3.6	-4.5	3	-2
4	Cressbrook, 110503	34	-6	-3	-4	-0.7	-1.2	0.1	-0.7	-1.1	0.0	1	2
5	Glenrannoch, 012289	46	-10	-10	-11	-1.2	-1.5	-0.9	-1.8	-2.0	-2.0	-6	14
6	Kilfeera Park, 130023	25	0	2	1	-0.4	-0.8	-1.2	-2.0	-4.4	-4.2	-15	-4
7	Kilfeera Park, 130048	13	-8	-4	-5	-0.1	-0.2	-0.9	-0.9	-0.4	0.0	-7	-8
8	Mumblebone, 130389	8	2	1	1	0.7	0.6	1.1	2.1	2.8	2.6	1	-3
9	Mumblebone, 130850	18	5	1	1	1	1.1	2.6	4.1	5.0	4.8	21	4
10	One Oak No. 2, 130004	33	15	12	13	-0.3	-0.5	1.8	2.2	0.3	0.5	-13	1
11	Toland Poll, 141102	15	-7	-5	-4	-0.8	-0.7	-2.8	-3.7	-3.7	-3.1	19	-11
12	Toland, 449 (Hist)	41	3	2	2	0.4	0.6	-0.7	-0.9	-0.3	-1.0	-11	-4
13	Trigger Vale Poll, 140968	40	-13	-7	-6	1.1	1.6	0.8	2.3	5.3	5.5	-6	3

^ 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%.

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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 %
			P^	A	A	A	P	A	H	H	H
1	Arapiles Plains Poll, 140022	43	1.9	1.1	3.4	-1.1	-4.3	-4.7	0.0	-0.3	-5
2	Cahirblonig, 130183	28	-1.1	-0.9	-1.0	1.5	1.3	3	0.3	1.2	-2
3	Connewarran, 062097	41	0.9	0.3	0.6	0.2	-2.3	-4	0.2	0.1	-11
4	Cressbrook, 110503	34	0.5	0.4	-2.2	-1.1	3.1	4	-0.5	-1.2	-23
5	Glenrannoch, 012289	46	0.4	0.3	-7.5	-1.4	13.7	16.2	0.0	0.8	-3
6	Kilfeera Park, 130023	25	0.2	0.5	-5.7	-1.2	0.9	2	-0.9	-1.8	-1
7	Kilfeera Park, 130048	13	0.0	-0.1	4.0	1.8	1.1	1.1	-0.3	-0.4	15
8	Mumblebone, 130389 #	8			2.3		-4.4	-3.6			13
9	Mumblebone, 130850	18	-1.7	-1.6	7.3	2.0	-6.2	-7.4	0.5	0.5	-18
10	One Oak No. 2, 130004	33	0.5	0.6	-4.6	-0.8	-2	-2.9	-2.6	-2.7	39
11	Toland Poll, 141102	15	0.4	-0.2	2.4	0.5	-0.7	-0.6	-0.1	-0.2	6
12	Toland, 449 (Hist)	41	-0.5	-0.1	0.0	-0.5	-0.2	-2	1.1	0.4	19
13	Trigger Vale Poll, 140968	40	-0.6	-0.1	1.2	0.3	0.1	-1.2	1.4	2.9	-18

^ 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).

Mumblebone, 130389 has too few progeny numbers for all traits to reach reporting thresholds for accuracies

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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 - *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
Arapiles Plains Poll, 140022	-0.1	88	10	0	2	0	-0.1	50	35	15	0	0	0.2	28	30	28	10	4	-0.1	60	32	8	0	0
Cahirblonig, 130183	-0.1	89	7	4	0	0	-0.1	57	32	7	4	0	0.3	21	29	36	7	7	-0.2	68	29	3	0	0
Connewarran, 062097	0.1	73	22	3	2	0	-0.2	54	41	5	0	0	-0.5	46	44	7	3	0	-0.3	78	15	7	0	0
Cressbrook, 110503	0.2	73	12	12	3	0	-0.2	64	27	6	0	3	0.1	21	39	27	13	0	-0.1	67	21	12	0	0
Glenrannoch, 012289	-0.1	83	13	4	0	0	-0.1	54	35	11	0	0	0.8	6	24	37	26	7	0.1	52	28	20	0	0
Kilfeera Park, 130023	0.1	79	12	5	4	0	0.0	38	54	8	0	0	0.1	25	38	21	12	4	-0.2	62	33	5	0	0
Kilfeera Park, 130048	-0.2	92	8	0	0	0	-0.3	58	42	0	0	0	0.2	9	50	33	8	0	0.2	33	58	9	0	0
Mumblebone, 130389	0.1	88	0	0	12	0	0.4	13	75	0	12	0	-0.7	50	50	0	0	0	0.1	50	38	12	0	0
Mumblebone, 130850	0.0	78	17	5	0	0	0.1	39	44	17	0	0	-0.6	61	22	17	0	0	0.4	28	44	28	0	0
One Oak No. 2, 130004	0.1	62	34	4	0	0	0.2	31	52	17	0	0	0.1	21	34	38	7	0	0.0	52	41	4	3	0
Toland Poll, 141102	-0.1	86	7	7	0	0	-0.1	57	29	14	0	0	-0.6	57	29	14	0	0	-0.3	71	29	0	0	0
Toland, 449 (Hist)	-0.1	90	8	0	2	0	0.3	20	59	21	0	0	-0.2	28	44	28	0	0	-0.1	59	38	3	0	0
Trigger Vale Poll, 140968	0.0	74	21	5	0	0	0.2	23	67	10	0	0	0.8	15	31	11	28	15	0.5	23	51	21	2	3
Average performance	**1.3**	**81**	**13**	**4**	**2**	**0**	**1.7**	**43**	**46**	**10**	**1**	**0**	**2.2**	**30**	**36**	**23**	**9**	**2**	**1.6**	**54**	**35**	**11**	**0**	**0**

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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
Arapiles Plains Poll, 140022	-0.1	0	0	100	0	0	0.4	6	28	40	18	8	0.0	100	0	0	0	0	-0.1	96	2	2	0	0	0	0
Cahirblonig, 130183	0.0	0	0	93	7	0	0.1	7	46	36	7	4	0.0	100	0	0	0	0	0.0	83	14	3	0	0	0	0
Connewarran, 062097	0.0	0	0	90	10	0	-0.2	17	46	29	8	0	0.0	100	0	0	0	0	0.1	79	16	3	0	2	0	0
Cressbrook, 110503	0.0	0	0	91	9	0	-0.1	15	39	42	4	0	0.0	100	0	0	0	0	0.3	67	18	15	0	0	0	0
Glenrannoch, 012289	-0.1	0	0	96	4	0	0.6	0	26	48	22	4	0.0	100	0	0	0	0	-0.2	100	0	0	0	0	0	0
Kilfeera Park, 130023	-0.1	0	0	96	4	0	0.2	12	33	38	9	8	0.1	97	0	0	0	3	0.0	83	13	4	0	0	0	0
Kilfeera Park, 130048	0.0	0	0	92	8	0	-0.1	9	50	33	8	0	0.0	100	0	0	0	0	0.0	93	0	7	0	0	0	0
Mumblebone, 130389	0.1	0	0	75	25	0	-0.2	0	88	0	12	0	0.0	100	0	0	0	0	-0.1	90	10	0	0	0	0	0
Mumblebone, 130850	0.3	0	0	61	39	0	-0.4	28	50	11	11	0	0.0	100	0	0	0	0	0.0	94	0	6	0	0	0	0
One Oak No. 2, 130004	-0.1	0	0	97	3	0	0.0	4	48	41	7	0	0.0	100	0	0	0	0	0.0	92	5	3	0	0	0	0
Toland Poll, 141102	0.0	0	0	86	14	0	-0.8	50	29	21	0	0	0.0	100	0	0	0	0	0.0	89	11	0	0	0	0	0
Toland, 449 (Hist)	-0.1	0	0	100	0	0	-0.1	10	49	36	5	0	0.0	100	0	0	0	0	-0.1	96	2	0	2	0	0	0
Trigger Vale Poll, 140968	0.0	0	0	85	15	0	0.7	0	20	44	36	0	0.0	100	0	0	0	0	0.0	90	7	3	0	0	0	0
Average performance	**3.1**	**0**	**0**	**89**	**11**	**0**	**2.5**	**12**	**43**	**32**	**11**	**2**	**1.0**	**100**	**0**	**0**	**0**	**0**	**1.2**	**89**	**8**	**3**	**0**	**0**		

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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
Arapiles Plains Poll, 140022	0.0	100	0	0	0	0	0.6	32	25	13	18	12	0.0	92	0	8	0	0	0.1	0	15	82	3	0	0.2	11	55	22	12	0
Cahirblonig, 130183	0.0	100	0	0	0	0	0.5	18	43	25	14	0	0.1	89	0	11	0	0	0.1	0	18	71	11	0	0.3	11	54	21	14	0
Connewarran, 062097	0.0	98	0	2	0	0	-0.2	41	46	13	0	0	0.0	92	0	8	0	0	0.2	0	7	83	10	0	0.3	15	40	35	10	0
Cressbrook, 110503	0.0	97	3	0	0	0	-0.3	61	21	18	0	0	-0.1	97	0	3	0	0	-0.2	3	30	67	0	0	0.3	3	60	30	7	0
Glenrannoch, 012289	0.0	100	0	0	0	0	-0.3	59	26	13	2	0	0.1	89	0	11	0	0	0.2	0	11	76	13	0	0.5	4	52	20	20	4
Kilfeera Park, 130023	0.0	100	0	0	0	0	-0.4	54	42	4	0	0	0.0	96	0	4	0	0	0.4	0	0	83	17	0	0.3	17	52	9	17	5
Kilfeera Park, 130048	0.3	92	0	0	0	8	-0.5	83	0	17	0	0	-0.1	100	0	0	0	0	-0.2	8	25	67	0	0	-0.2	17	75	8	0	0
Mumblebone, 130389	0.0	100	0	0	0	0	0.1	25	50	25	0	0	-0.1	100	0	0	0	0	-0.2	0	38	62	0	0	-0.9	75	25	0	0	0
Mumblebone, 130850	0.0	100	0	0	0	0	-0.1	50	33	6	11	0	0.0	94	0	6	0	0	-0.3	0	44	56	0	0	-0.8	72	22	6	0	0
One Oak No. 2, 130004	0.0	100	0	0	0	0	0.2	28	38	31	3	0	0.1	90	0	10	0	0	0.2	0	4	93	3	0	0.7	0	33	57	7	3
Toland Poll, 141102	0.0	100	0	0	0	0	-0.3	50	43	7	0	0	-0.1	100	0	0	0	0	-0.1	0	29	71	0	0	-0.3	43	36	21	0	0
Toland, 449 (Hist)	0.0	100	0	0	0	0	0.2	29	38	33	0	0	0.0	92	0	8	0	0	0.0	0	23	77	0	0	0.0	5	71	24	0	0
Trigger Vale Poll, 140968	0.0	100	0	0	0	0	0.5	26	28	33	8	5	0.1	90	2	8	0	0	-0.1	0	36	62	2	0	-0.3	38	44	13	5	0
Average performance	**1.0**	**99**	**0**	**0**	**0**	**1**	**1.9**	**43**	**33**	**18**	**4**	**2**	**1.1**	**94**	**0**	**6**	**0**	**0**	**2.8**	**1**	**21**	**73**	**5**	**0**	**2.1**	**24**	**48**	**20**	**7**	**1**

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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 *Hogget*						Crutch Cover						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	Dev	1	2	3	4	5
Arapiles Plains Poll, 140022	0.0	0	0	2	45	53	0.1	6	43	47	4	0	-0.3	44	34	12	7	3												
Cahirblonig, 130183	-0.2	0	4	14	34	48	-0.2	17	52	31	0	0	-0.1	14	68	18	0	0												
Connewarran, 062097	0.4	0	0	0	5	95	0.6	3	16	63	16	2	-0.4	39	51	5	3	2												
Cressbrook, 110503	0.2	0	0	5	21	74	0.2	7	31	54	8	0	-0.5	48	36	16	0	0												
Glenrannoch, 012289	0.1	0	0	0	42	58	0.7	2	19	50	25	4	-0.2	30	52	13	3	2												
Kilfeera Park, 130023	-0.1	0	0	10	43	47	0.2	10	40	37	13	0	-0.3	36	48	12	4	0												
Kilfeera Park, 130048	0.1	0	0	0	36	64	-0.2	7	64	29	0	0	-0.1	25	50	17	8	0												
Mumblebone, 130389	0.0	0	0	0	50	50	-0.3	10	70	20	0	0	0.8	38	0	12	25	25												
Mumblebone, 130850	-0.6	0	6	24	41	29	-1.0	59	41	0	0	0	-0.4	50	28	17	5	0												
One Oak No. 2, 130004	0.3	0	0	0	22	78	0.3	0	38	59	0	3	0.2	19	50	12	12	7												
Toland Poll, 141102	-0.2	0	0	5	56	39	-0.2	28	33	33	6	0	1.0	0	47	20	0	33												
Toland, 449 (Hist)	0.2	0	0	7	20	73	0.4	0	33	56	11	0	0.6	18	31	21	21	9												
Trigger Vale Poll, 140968	-0.2	0	5	7	39	49	-0.8	51	44	5	0	0	-0.2	36	41	13	10	0												
Average performance	**4.5**	**0**	**1**	**6**	**35**	**58**	**2.4**	**15**	**40**	**37**	**6**	**2**	**2.2**	**31**	**41**	**14**	**8**	**6**												

Crutch Cover and Urine not scored

(Hist) Historical Sires evaluated under AMSEA's R&D project to validate the system of linkage in MERINOSELECT that has operated over the past 15-20 years. These sires were generally widely used 15-20 years ago and were selected for the R&D program based on their high ASBV accuracies.

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		CFW kg	FD µm		FDCV %		SL mm	SS N/ktex	WT kg				FAT mm	EMD mm
		P^	A	A	P	A	P	A	A	A	W	P	H	A	H	H
Arapiles Plains Poll, 140022	43	0.1	0.3	0.1	0.0	0.4	1.5	0.5	1.8	-0.1	0.4	0.2	2.0	0.9	0.0	-0.2
Cahirblonig, 130183	28	0.2	-0.1	0.0	0.9	1.0	-0.7	-0.5	-0.9	-1.0	1.3	1.0	-1.3	-1.1	0.0	0.9
Connewarran, 062097	41	0.1	0.2	0.2	-0.8	-0.8	0.8	0.0	-0.1	1.0	-0.7	-1.4	-2.7	-3.3	0.1	0.2
Cressbrook, 110503	34	-0.1	-0.1	0.0	-0.4	-0.8	0.4	0.3	-1.1	-0.2	0.7	-1.1	-1.2	1.5	-0.1	-0.8
Glenrannoch, 012289	46	-0.1	-0.3	-0.2	-0.8	-0.9	0.3	0.4	-3.9	-0.5	-0.2	-1.2	-1.8	-1.6	-0.1	0.6
Kilfeera Park, 130023	25	0.0	0.1	0.1	-0.2	-0.6	0.2	0.3	-4.4	-1.4	-0.7	-0.9	-3.2	-3.0	-0.2	-1.2
Kilfeera Park, 130048	13	-0.3	-0.2	-0.2	-0.1	-0.1	0.0	0.1	4.8	3.1	-1.4	-1.3	0.7	-0.6	-0.2	-0.5
Mumblebone, 130389	8	0.1	0.1	0.0	0.6	0.4	-1.0	-0.2	1.0	-0.9	0.7	2.4	2.3	2.9	0.4	0.6
Mumblebone, 130850	18	0.1	0.0	0.0	0.7	0.7	-1.4	-1.2	5.2	0.6	2.2	3.3	3.8	3.4	0.1	0.3
One Oak No. 2, 130004	33	0.3	0.4	0.4	-0.3	-0.2	0.2	0.3	-3.9	-0.6	2.1	1.7	0.1	-0.1	-0.7	-1.6
Toland Poll, 141102	15	-0.2	-0.3	-0.2	-0.7	-0.4	0.6	-0.4	2.3	1.2	-3.5	-3.1	-2.5	-2.4	0.0	-0.1
Toland, 449 (Hist)	41	0.1	0.1	0.0	0.2	0.4	-0.4	0.0	-0.9	-1.0	-0.7	-0.6	0.0	-0.5	0.3	0.1
Trigger Vale Poll, 140968	40	-0.3	-0.2	-0.2	0.7	1.0	-0.4	0.3	0.0	0.0	-0.2	1.1	3.7	4.1	0.3	1.8
Progeny group average	**30**	**2.4**	**4.6**	**3.3**	**15.9**	**18.1**	**21.9**	**18.5**	**82.5**	**25.3**	**23.9**	**29.8**	**48.7**	**44.6**	**3.5**	**29.2**
		kg		kg	µm		%		mm	N/ktex	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)

(Hist) Historical Sires evaluated under AMSEA's R&D project to validate the system of linkage in MERINOSELECT that has operated over the past 15-20 years. These sires were generally widely used 15-20 years ago and were selected for the R&D program based on their high ASBV accuracies.

Understanding the results

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

North East Victoria

2015 Drop
Adult Assessment