North East Victoria

2016 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

September 2018

Disclaimer

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 (Dookie) 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 2016 drop progeny are the progeny of the eighteenth 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
Anna Toland	0438 981 605	Secretary
Phil Toland	03 5798 1247	Toland Poll Merinos
Simon Riddle		North East Merinos President
Ashley Gabler		Uni Melbourne Dookie Site Manager
John Geddes		Uni Melbourne Dookie Stock Manager
Paul Cheng		Uni Melbourne Dookie
Jane Court		Department of Economic Development, Jobs, Transport and Resources
Lisa Warn		Department of Economic Development, Jobs, Transport and Resources
Paul Wallace		Department of Economic Development, Jobs, Transport and Resources
Lyndon Kubiel		Department of Environment and Primary Industries
Paddy McCarthy		Woolclassing Facilitator

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Contents

Sire and Owner Details

Breeders flock, Sire name Sire ID #, Breed †	Contact Details
Bindawarra, 130001 503892-2013-130001, Merino	**Steven Harrison** 72 Giffard West Road, Giffard West VIC 3851 P: (03) 5146 8303, M: 0427 46 8303, E: slhgiffard@bigpond.com
Cahirblonig, 140308 504214-2014-140308, Merino	**Matthew Ipsen** 912 Maryborough - St Arnaud Rd, Wareek VIC 3465 P: (03) 5461 2016, M: 0417 51 6640, E: ewewish@bigpond.com
Connewarran, 1002 504704-2011-111002, Merino	**Hamish Weatherly** Connewarran, PO Box 21, Mortlake VIC 3272 P: (03) 5599 7276, M: 0423 07 3328, E: hamishweatherly@hotmail.com
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@greenfieldsstud.com.au
Hinesville, 130047 501341-2013-120047, Merino	**John Jamieson** Wattle Park, Broughans Road, Finlay NSW 2713 P: (03) 5883 1085, M: 0427 50 0676, E: jamo.5@bigpond.com
Kilfeera Park, 100024 (Link) 503425-2010-100024, 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, 150409 503425-2015-150409, Merino	**Murray & Fiona McKenzie** 131 Brock Rd, Lurg VIC 3673 P: (03) 5766 6278, M: 0428 48 1961, E: kilpark@people.net.au
Pastora Poll, 113416 601090-2011-113416, Poll Merino	**Tim Westblade** Pastora, Lockhart NSW 2656 P: (02) 6920 5423, M: 0429 20 5423, E: trwesty@bigpond.com
The Mountain Dam, 14/RG076 (Link) 504572-2014-4RG076, 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
Toland Poll, 151042 (Link) 601082-2015-151042, Poll Merino	**Anna Toland** 1888 Feltrim Rd, Violet Town VIC 3669 P: (03) 5798 1650, M: 0438 98 1605, E: anna@tolandmerino.com.au
Toland Poll, 151058 (Link) 601082-2015-151058, Poll Merino	**Anna Toland** 1888 Feltrim Rd, Violet Town VIC 3669 P: (03) 5798 1650, M: 0438 98 1605, E: anna@tolandmerino.com.au

(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

2016 Drop Assessment

The information in this Site Report provides an assessment of the 2016 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 19 months of age with 10 months of wool growth.

Manager's Report

Host Property for 2016 drop progeny and location

The host property for the North East Victoria (Dookie) trial is situated at the Melbourne University Dookie campus, located 30km east of Shepparton, off the Midland Highway.

The Dookie farm is 2440 hectares of undulating country with sheep and cropping the two main enterprises.

The sheep are Toland Poll blood which is predominately a self-replacing flock of 3000 ewes.

Pastures range from phalaris/sub clover to annual grasses/sub clover, with some Lucerne available.
Soil type is predominantly clay/loam.

Selection and Joining

544 ewes were inseminated on the 3rd March 2016 to 11 sires.

Ewes were selected to provide a uniform line with good conformation, even wool quality and productivity. Ewes were allocated randomly ensuring that each sire had an even balance of age groups.

Seasonal conditions

Mob rotationally grazed 80ha's of phalaris/sub clover-based pasture over the duration of trial with 0.5-1 kg/hd/wk of supplementary (wheat) fed as required to maintain a condition score of 2+. Salt and lime stone adlib as provided.

Rainfall

Month	2015	2016	2017	Average
January	42.6	85.6	25.2	51.1
February	32	18.4	30.8	27.1
March	1.8	26	25.9	17.9
April	45.3	16.6	59	40.3
May	13.8	98.2	32.2	48.1
June	0	65.8	4.8	23.5
July	71	86.5	0	52.5
August	34.2	86.3	80.2	66.9
September	19	103.7	6.8	43.2
October	4	52.1	38	31.4
November	71	45.2	9.3	41.8
December	0	30.6	76	35.5
Total	**334.7**	**715**	**388.2**	**479.3**

Assessment and Management Program

Activity	Date/s	Age	Wool
Selection of ewes	January 2016		
Allocation of ewes for mating	February 2016		
AI	3 March 2016		
Pregnancy scanning	May 2016		
Lambing: start – finish	1 August – 9 August 2016		
Tagging, pigmentation and breech scoring	11 August 2016	7 days	
Lambing mobs boxed to one management group	11 August 2016	7 days	
Marking	30 August 2016	65 days	
Weaning	2 December 2016	113 days	
Midside fleece sampling	4 April 2017	9 months	9 months
	26 March 2018	18 months	9 months
Visual trait scoring	20 February 2018	18 months	9 months
Crutching	15 December 2016		
Shearing	4 April 2017	9 months	9 months
Crutching	15 November 2017		
Shearing	26 March 2018	18 months	9 months
Fat and eye muscle scanning	18 October 2017	15 months	
Worm egg count sampling	4 December 2017	15 months	
Body weighing	28 November 2016	119 Days	
	28 March 2017	239 Days	
	4 September 2017	399 Days	
	10 October 2017	443 Days	
	26 March 2018	602 Days	
Vaccination	At marking, weaning and annual booster of 6 in1 Gudair at weaning.		
Drench	Worm burdens monitored and progeny drenched when required. Drenched, Tri-guard 1/4/17. WEC- 25/5/17 Strongyle 50, Nematodirus 115n		
Fly treatment	Treated with Clik® at marking. Avenge off shears 2017 and 2018.		
Supplementary feeding	0.5-1 kg/hd/week from weaning to mid- July 2017. 2018- 1kg/hd/wk Jan-Mar.		
Field day or public display	Field Day & Progeny Display – 18 October 2017.		

Visual Trait Assessment and Site Breeding Objective

Visual trait assessment
Visual Classer's Grade: Mr Luke Marple, Landmark

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	Bindawarra, 130001	503892-2013-130001	503892-2006-000289
2	Cahirblonig, 140308	504214-2014-140308	504214-2011-110116
3	Connewarran, 1002	504704-2011-111002	Unknown
4	Greenfields Poll, 140345	600240-2014-140345	600240-2012-120201
5	Hinesville, 130047	501341-2013-120047	500318-2008-080109
6	Kilfeera Park, 100024	503425-2010-100024	504166-2008-081017
7	Kilfeera Park, 150409	503425-2015-150409	Unknown
8	Pastora Poll, 113416	601090-2011-113416	601090-2008-082893 (Pastora Poll, 082893)
9	The Mountain Dam, 14/RG076	504572-2014-4RG076	504572-2011-1RE017 (The Mountain Dam, 11/RE017)
10	Toland Poll, 151042	601082-2015-151042	609147-2012-120103 (Anderson Poll, 120103)
11	Toland Poll, 151058	601082-2015-151058	609040-2012-122281 (Merinotech WA Poll, 122281)

Raw Data » Adjusted Sire Means » Flock Breeding Values

Merino Sire Evaluation produces a variety of result types which are all connected. Measurements taken during sire evaluation assessments are used as the first level of results, then adjustments are made to increase the selection accuracy and better enable the comparison of results and sires. Types of data produced include **Raw Data**, **Adjusted Sire Means**, **Flock Breeding Values and Indexes**.

Where possible, AMSEA publishes both **Adjusted Sire Means** and **Flock Breeding Values**, together with **Indexes,** in Site Reports as they offer a higher level of accuracy versus **Raw Data.** Visual Traits are reported as **Raw Data, this is because Adjusted Sire Means** and **Flock Breeding Values** are not currently available for those traits.

Raw Data
Raw data is unadjusted results as measured in the yard, paddock or wool testing facility.

Adjusted Sire Means
These are raw data results that have been adjusted for the effect of sex, birth type/rear type, age of dam, dam source, age at measurement and management group.

Flock Breeding Values (FBVs)
These results have been further adjusted for the level of heritability of a trait (some are more heritable than others), correlations between traits and the number of progeny a sire has. Along with the same adjustments as carried out for Adjusted Sire Means (as noted above).

FBVs are within site and within drop. As such they do not include data from other sources as is the case with Australian Standard Breeding Values (ASBVs), which are reported in Merino Superior Sires.

Indexes
A breeding index is the combination of breeding values into a single value that reflects a certain emphasis on those traits.

For more information about each Index see the page in this report titled ‘Index Options’.

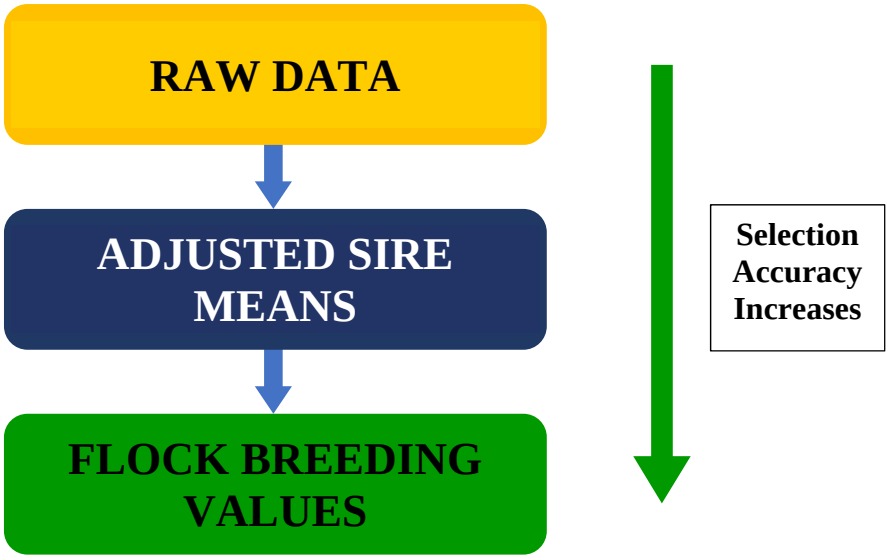


Table 1. **Adjusted Sire Means for Measured Traits**

Adjusted 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 Tables 2, 3 and 4.

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	Adjusted 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	P	A	P	A	P	A	A	A	W	Y	A	H	H
Bindawarra, 130001	17	2.4	7.0	1.8	4.4	15.9	18.0	22.2	18.2	107.8	38.8	27.4	42.5	45.9	2.4	27.3
Cahirblonig, 140308	18	2.3	6.2	1.7	3.9	16.7	19.1	23.0	17.6	107.1	39.5	26.7	43.1	45.1	3.2	27.5
Connewarran, 1002	23	2.3	6.7	1.8	4.3	16.5	18.1	21.9	17.0	117.4	39.2	26.5	40.0	44.1	2.4	26.1
Greenfields Poll, 140345	23	2.3	6.7	1.7	4.2	16.4	18.3	23.1	19.1	110.9	32.9	27.2	42.1	48.2	2.5	24.8
Hinesville, 130047	17	2.4	6.8	1.8	4.3	16.4	18.6	22.6	17.9	108.2	36.4	26.5	42.9	48.1	2.6	25.2
Kilfeera Park, 100024	30	2.5	6.8	1.9	4.4	16.2	17.8	22.6	18.5	105.2	36.3	27.6	40.6	45.1	2.3	26.1
Kilfeera Park, 150409	23	2.4	6.6	1.8	4.2	16.1	17.5	23.9	19.9	109.3	36.9	28.1	42.9	47.7	2.2	26.0
Pastora Poll, 113416	17	2.4	6.9	1.8	4.3	15.9	17.0	22.7	20.2	110.7	32.7	25.6	39.8	44.4	2.2	24.7
The Mountain Dam, 14/RG076	30	2.4	7.0	1.8	4.3	15.7	17.3	21.5	17.3	115.2	36.5	26.7	40.7	44.8	2.5	26.3
Toland Poll, 151042	37	2.5	6.7	1.8	4.0	16.2	18.1	22.6	18.5	109.3	38.7	28.5	43.8	48.7	2.6	26.4
Toland Poll, 151058	32	2.4	6.3	1.8	3.9	16.2	18.1	22.3	18.3	112.1	34.7	27.3	41.5	49.3	2.6	25.6
Progeny group average	**24**	**2.4**	**6.7**	**1.8**	**4.2**	**16.2**	**18.0**	**22.6**	**18.4**	**110.3**	**36.6**	**27.1**	**41.8**	**46.5**	**2.5**	**26.0**
		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)

Index Options

A breeding index combines multiple Flock Breeding Values 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 Flock Breeding Values and visually assessed traits is used in conjunction with an index as selection indexes assist in making balanced selection decisions.

The indexes on the following page are the DP+; MP+; FP+ and WP+. The first 3 of these indexes are the same as MERINOSELECT indexes of that name but account for the fact that direct reproduction records have not yet been recorded on the progeny. The WP+ index is unique to AMSEA.

Charts shown display 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 applying 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.

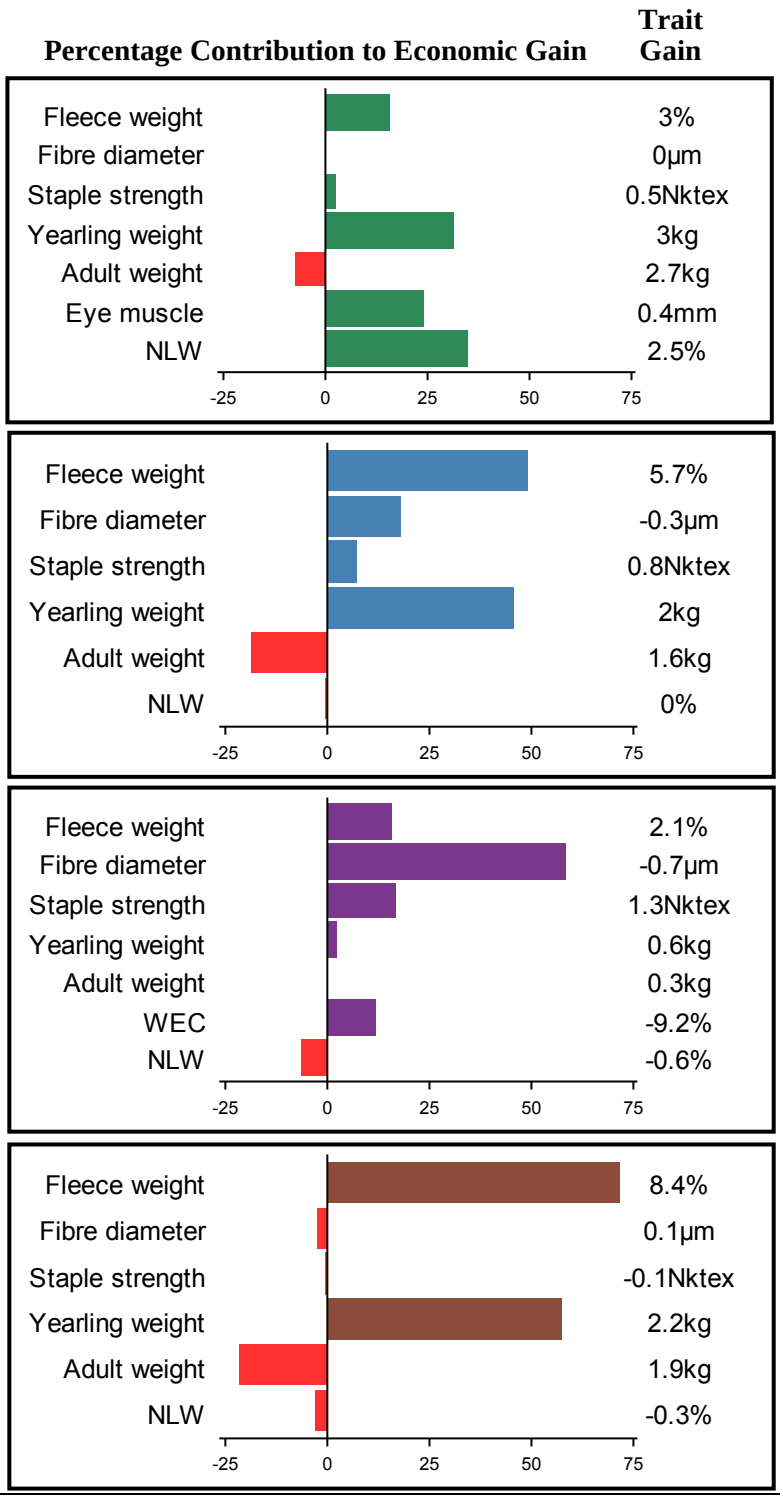


Table 2. **AMSEA Index Values and Classer's Visual Grade**

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	Bindawarra, 130001	17	123	119	114	116	-4	5
2	Cahirblonig, 140308	18	104	79	77	82	4	-8
3	Connewarran, 1002	23	98	105	105	103	0	-1
4	Greenfields Poll, 140345	23	80	94	88	101	-13	9
5	Hinesville, 130047	17	92	98	93	100	-15	-1
6	Kilfeera Park, 100024	30	102	94	102	94	1	1
7	Kilfeera Park, 150409	23	112	107	107	104	16	-5
8	Pastora Poll, 113416	17	82	102	107	102	-9	22
9	The Mountain Dam, 14/RG076	30	114	112	118	105	14	-12
10	Toland Poll, 151042	37	111	106	101	104	19	-9
11	Toland Poll, 151058	32	82	85	86	88	-13	-2
	Average performance	**24**	**100**	**100**	**100**	**100**	**20**	**14**

^ 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%.

Combined Measured Traits and Visual Performance

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

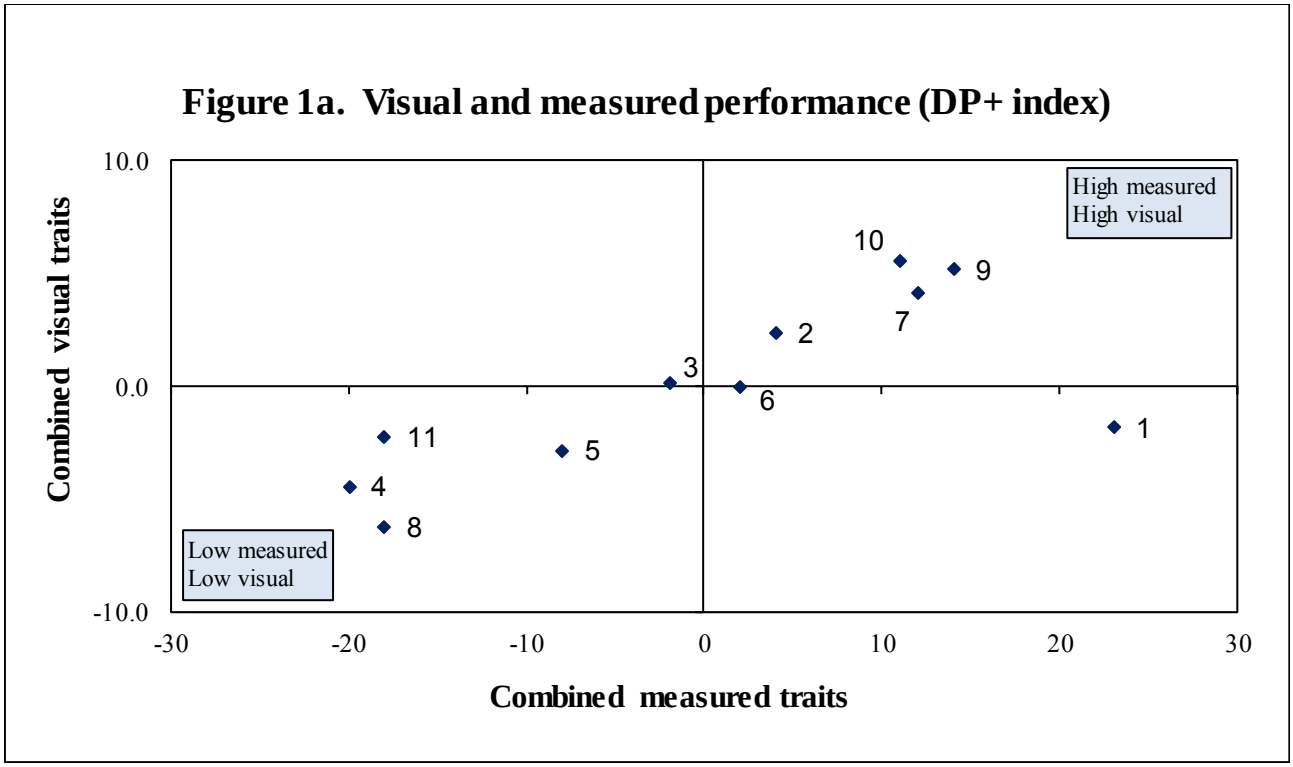


Figure 1b. Combined measured traits (MP+ index) and combined visually assessed traits for the site objective.

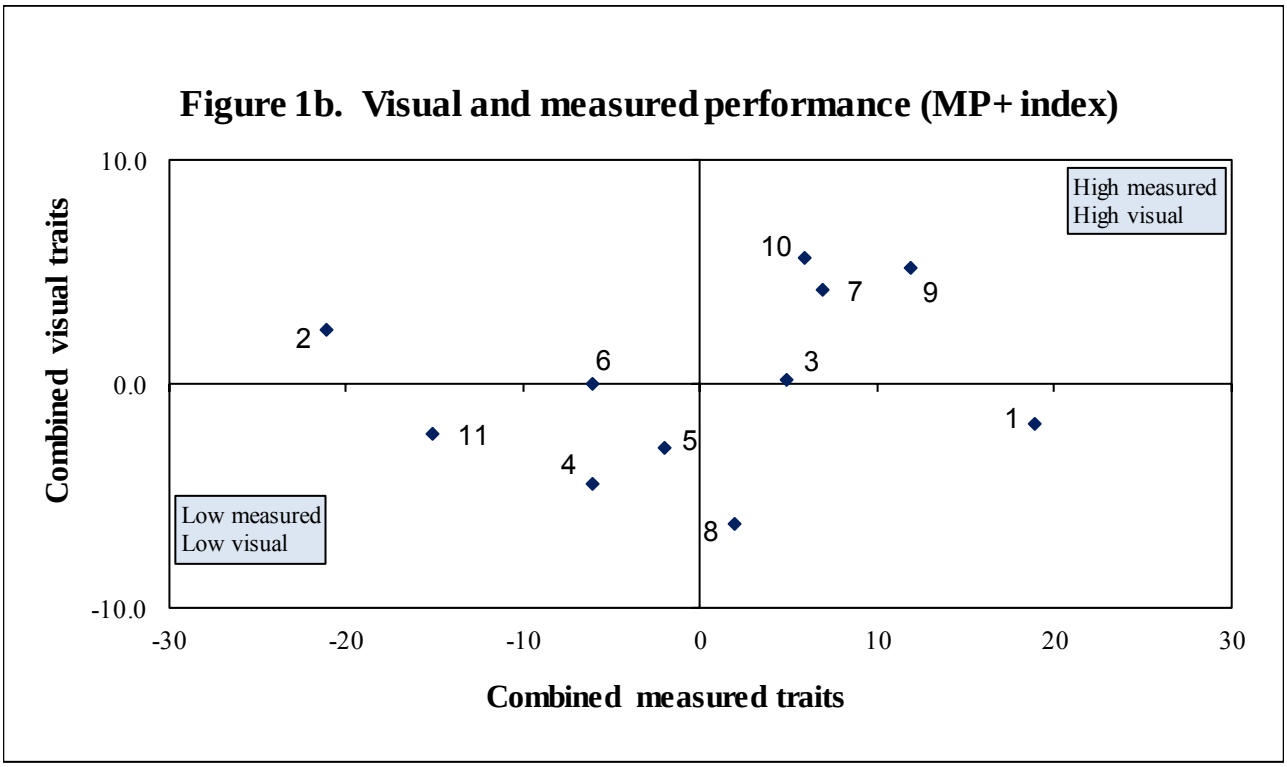


Figure 1c. Combined measured traits (FP+ index) and combined visually assessed traits for the site objective.

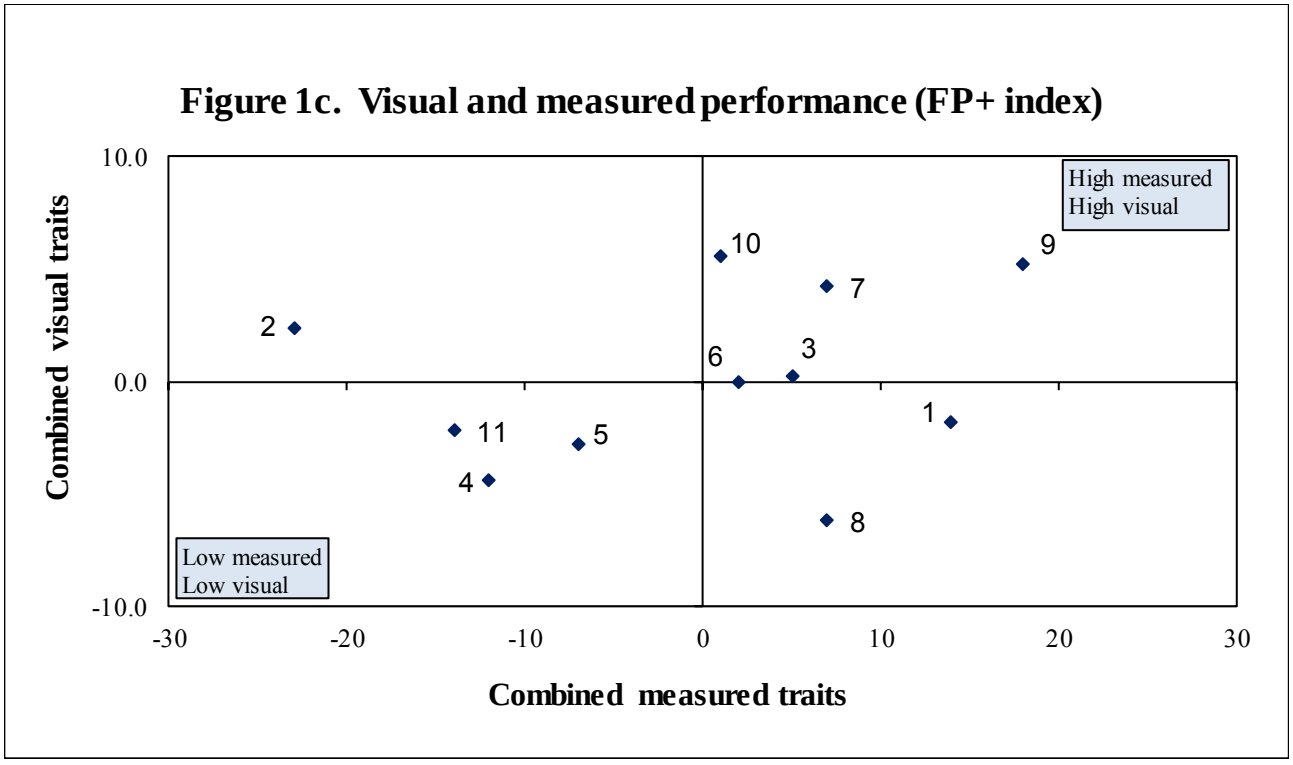
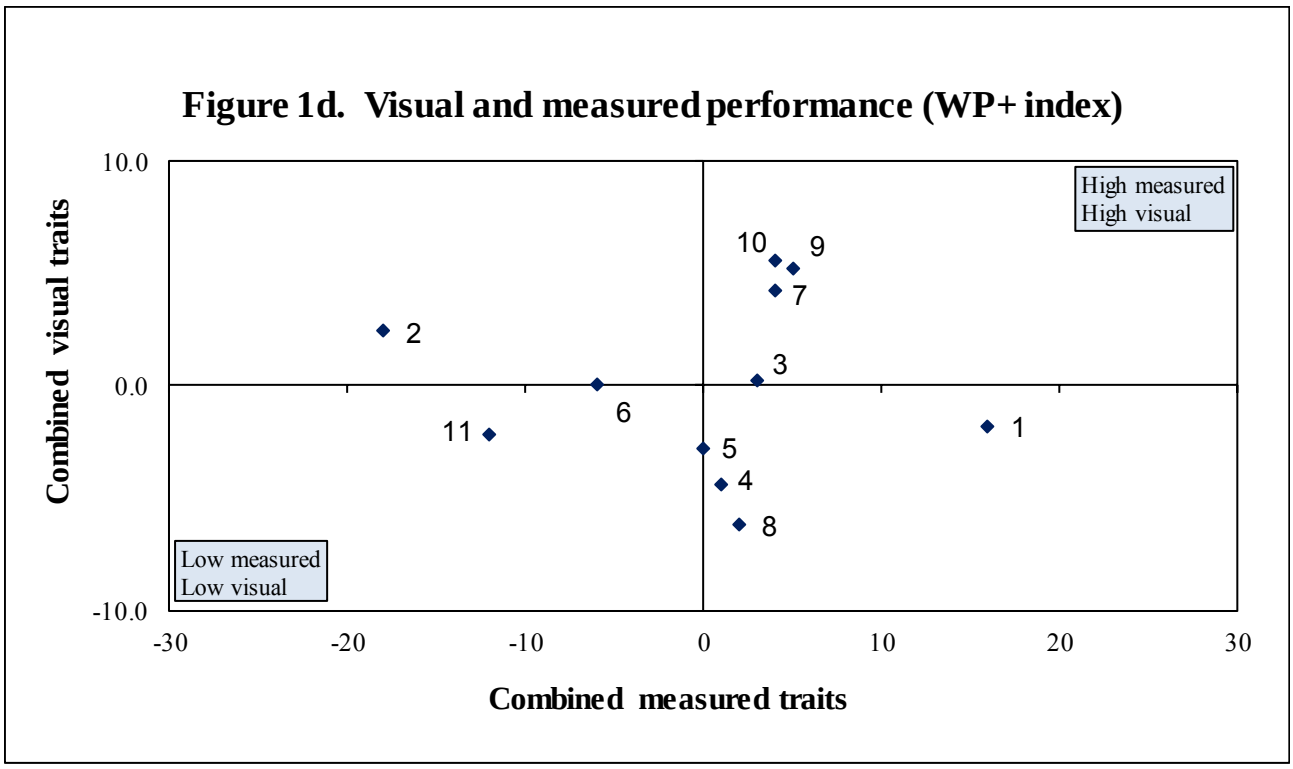


Figure 1d. Combined measured traits (WP+ index) and combined visually assessed traits for the site objective.



Summary Graphs

Figure 2. 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.

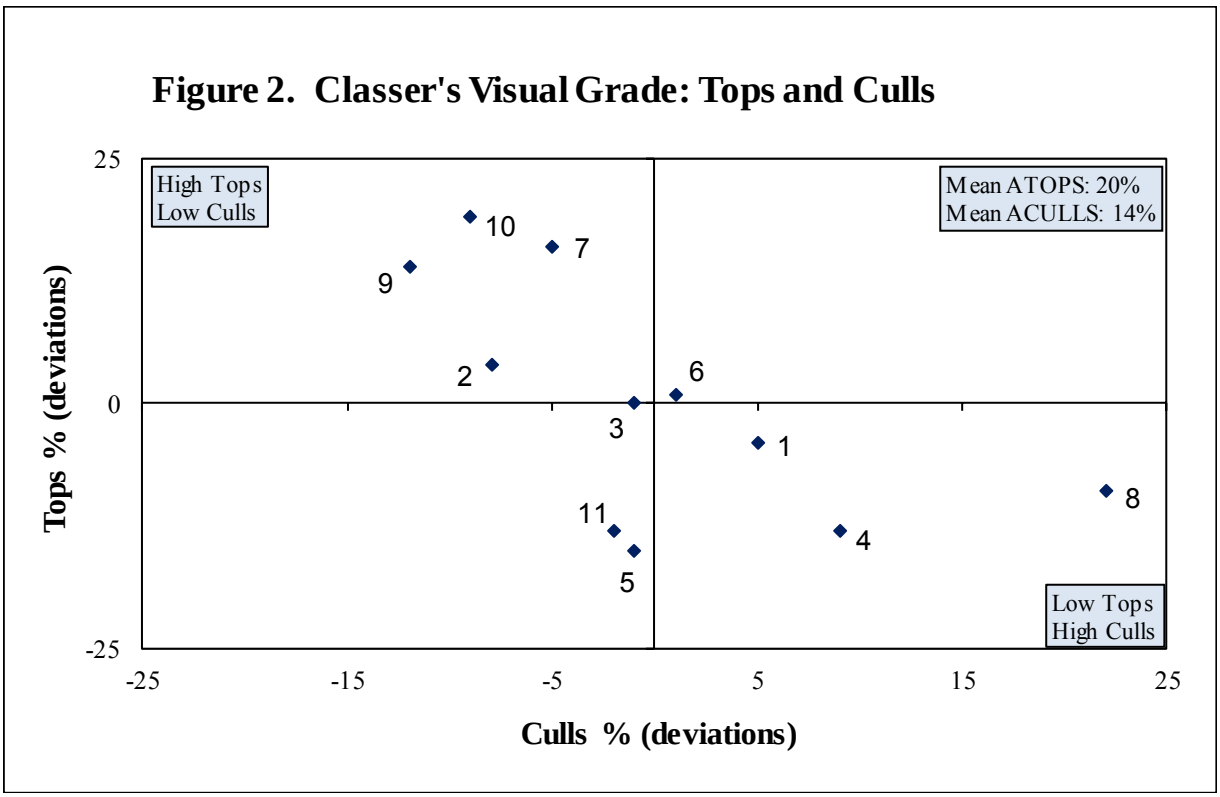
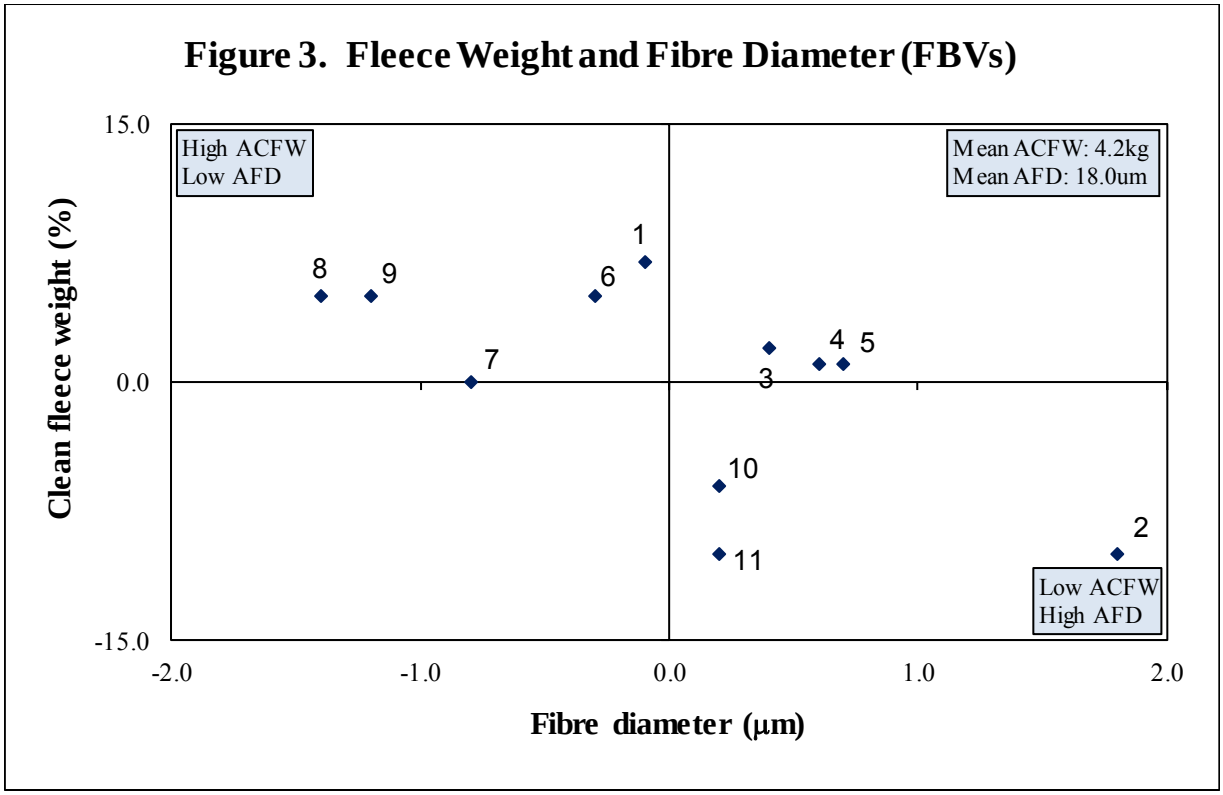


Figure 3. Fleece Weight and Fibre Diameter (FBVs)
The graph describes performance for fleece weight on the side axis and fibre diameter on the bottom axis. Sires that are above average for fleece weight and below average fibre diameter are located in the top left hand quarter.



Summary Graphs

Figure 4. Fleece Weight and Staple Length (FBVs)
The graph describes performance for fleece weight on the side axis and staple length on the bottom axis. Sires that are above average for fleece weight and above average for staple length are located in the top right hand quarter.

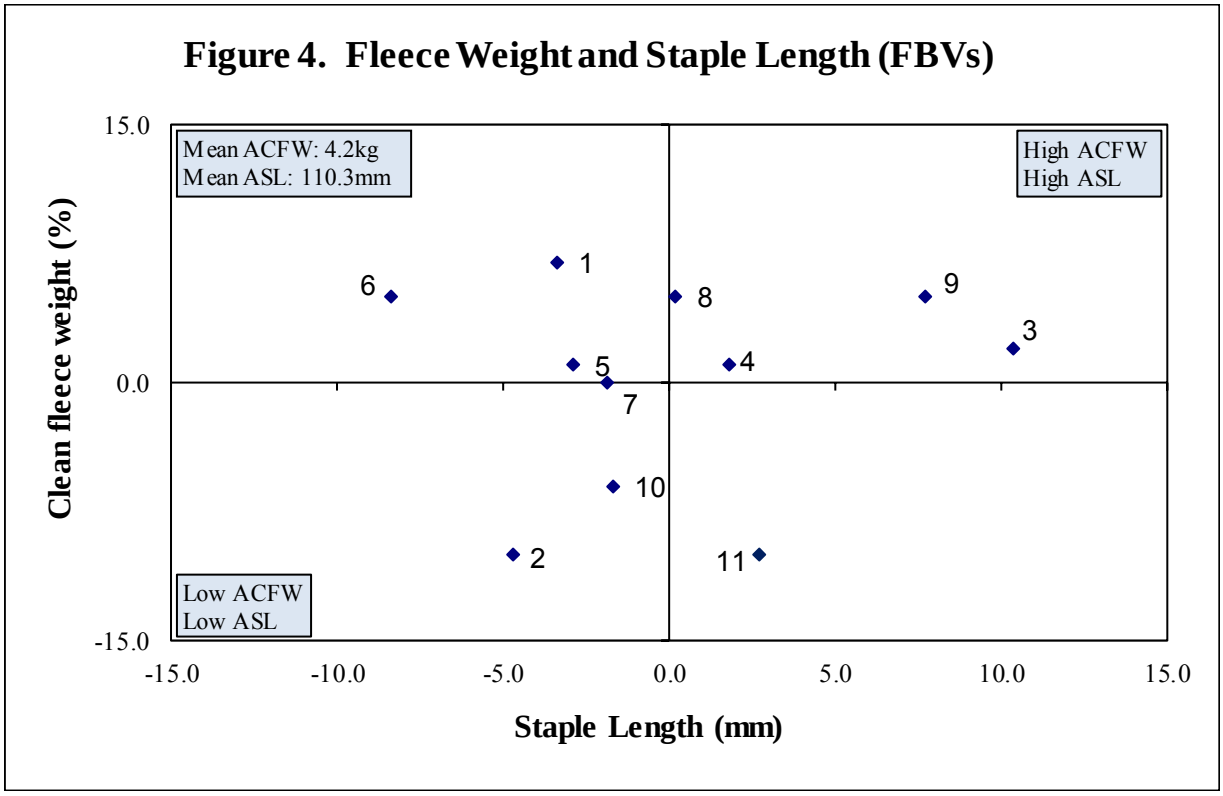
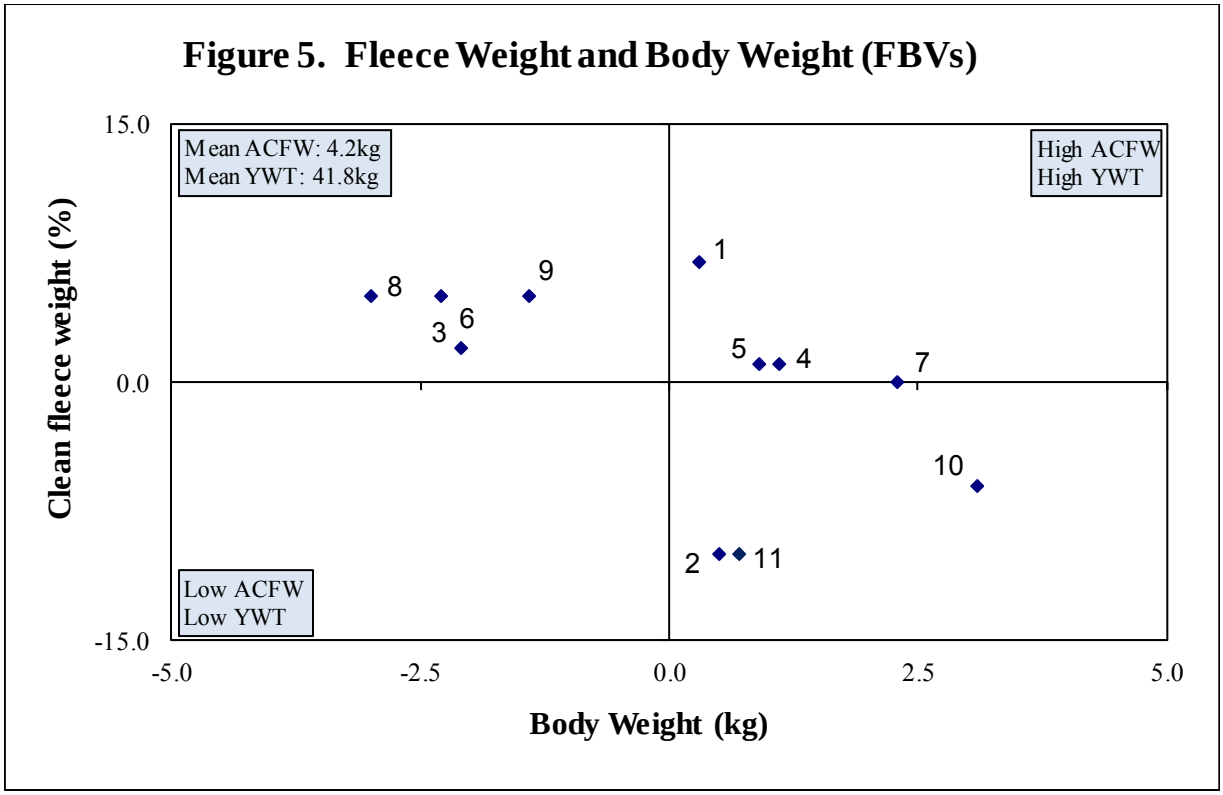


Figure 5. Fleece Weight and Body Weight (FBVs)
The graph describes performance for fleece weight on the side axis and body weight on the bottom axis. Sires that are above average for fleece weight and above average for body weight are located in the top right hand quarter.



Summary Graphs

Figure 6. Fleece Weight and Fat (FBVs)
The graph describes performance for fleece weight on the side axis and fat depth on the bottom axis. Sires that are above average for fleece weight and above average for fat are located in the top right hand quarter.

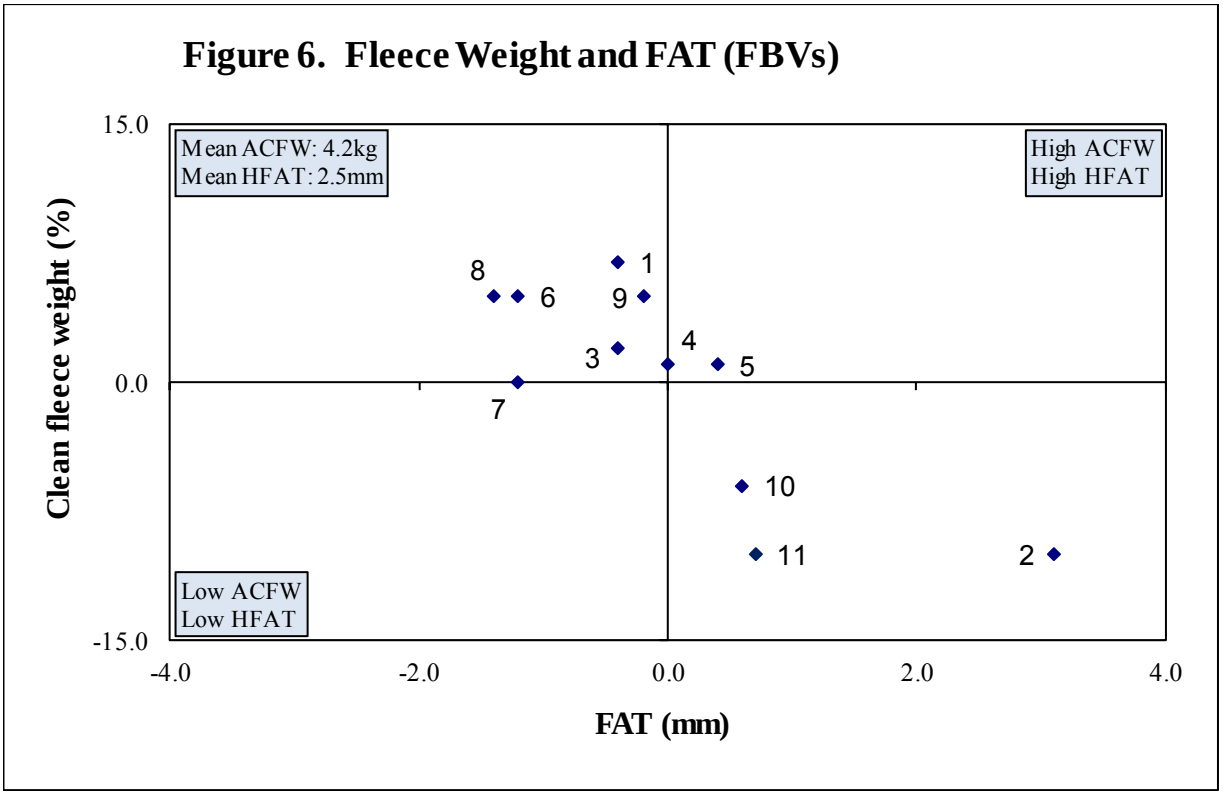
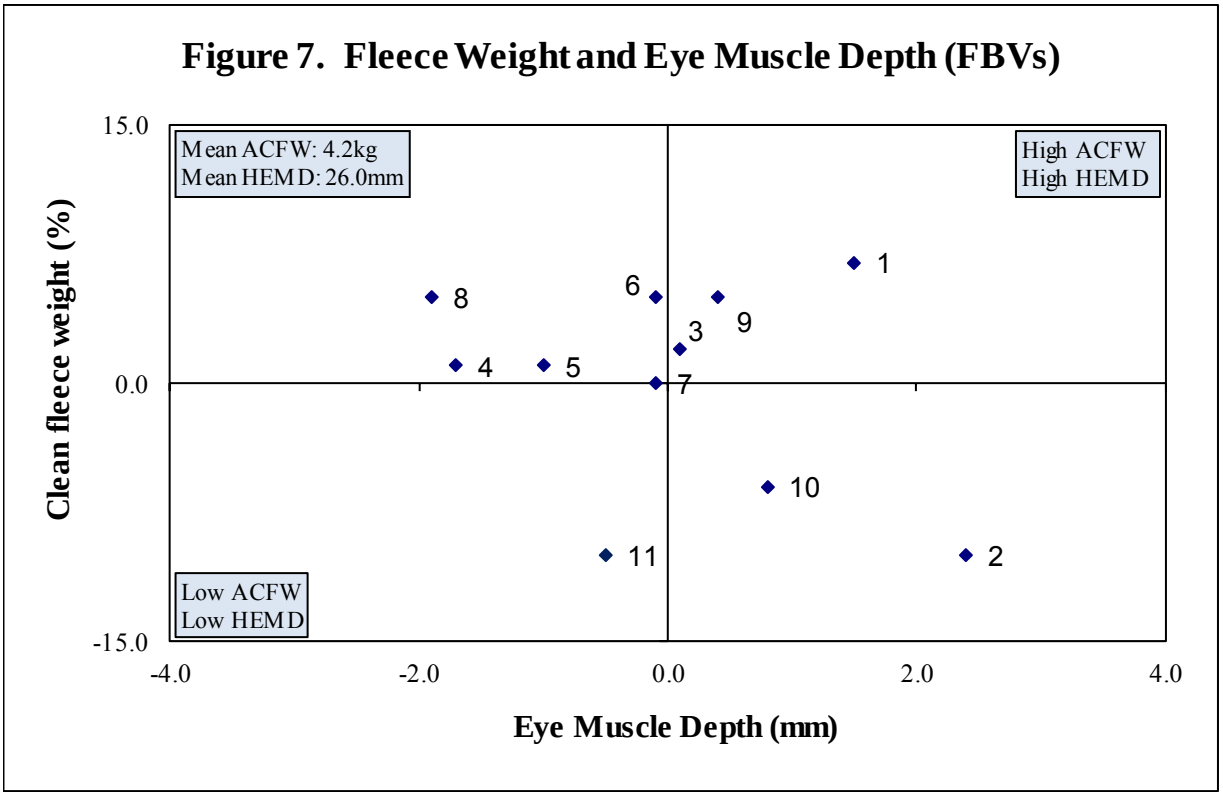


Figure 7. Fleece Weight and Eye Muscle Depth (FBVs)
The graph describes performance for fleece weight on the side axis and eye muscle depth on the bottom axis. Sires that are above average for fleece weight and above average for eye muscle depth are located in the top right hand quarter.



Summary Graphs

Figure 8. Fleece Weight (FBV) and Breech Wrinkle (Dev)
The graph describes performance for fleece weight on the side axis and breech wrinkle on the bottom axis. Sires that are above average for fleece weight and above average for breech wrinkle are located in the top right hand quarter.

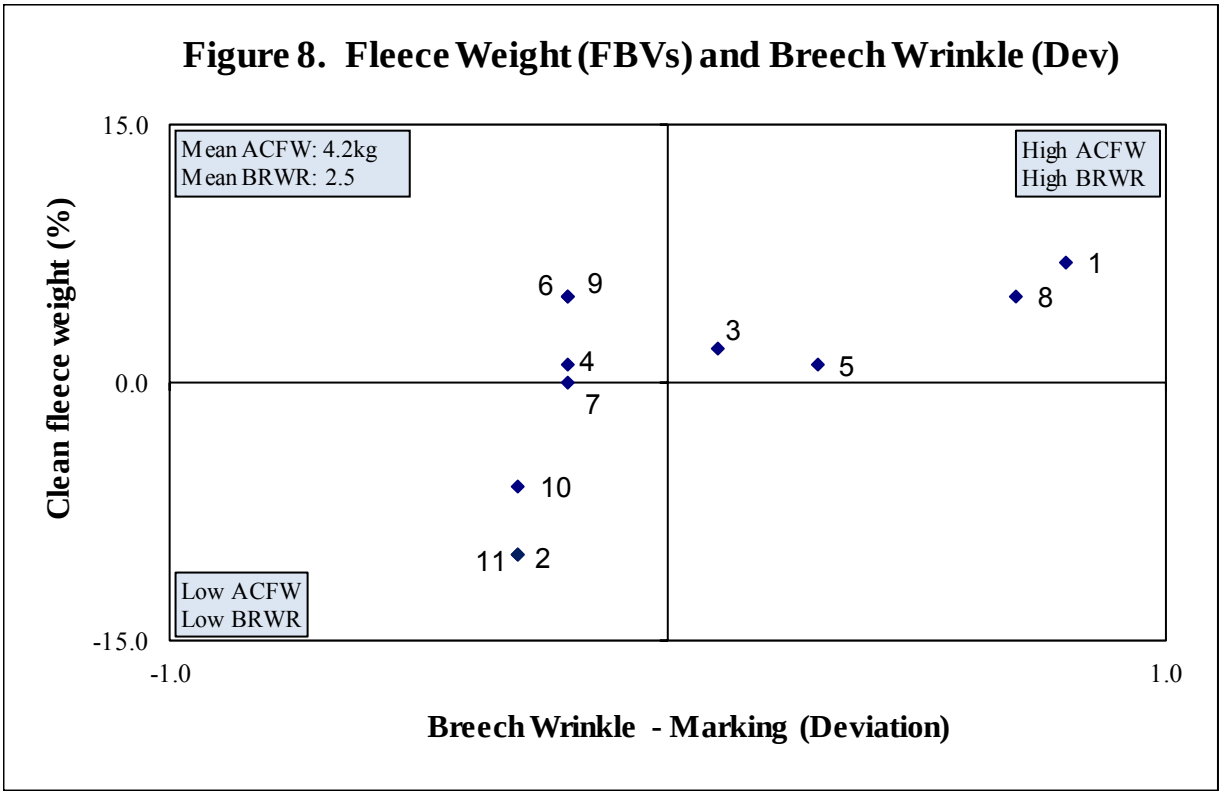
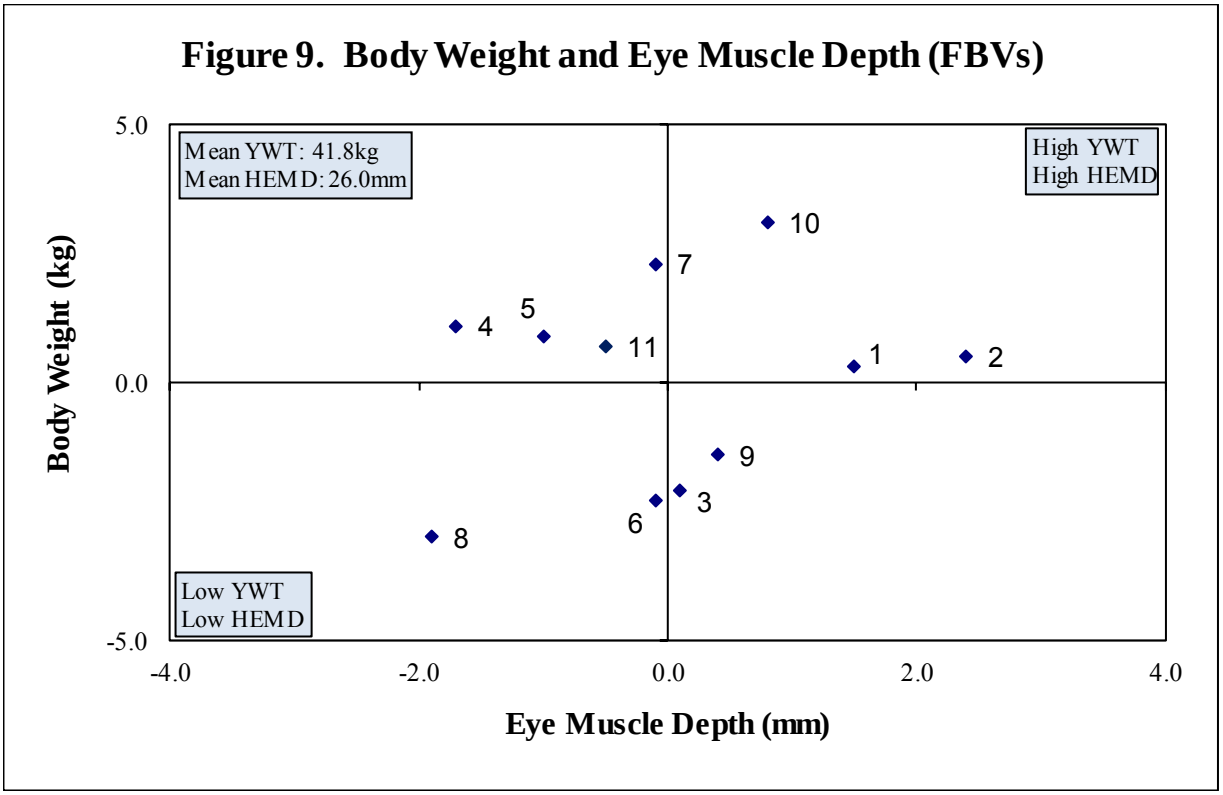
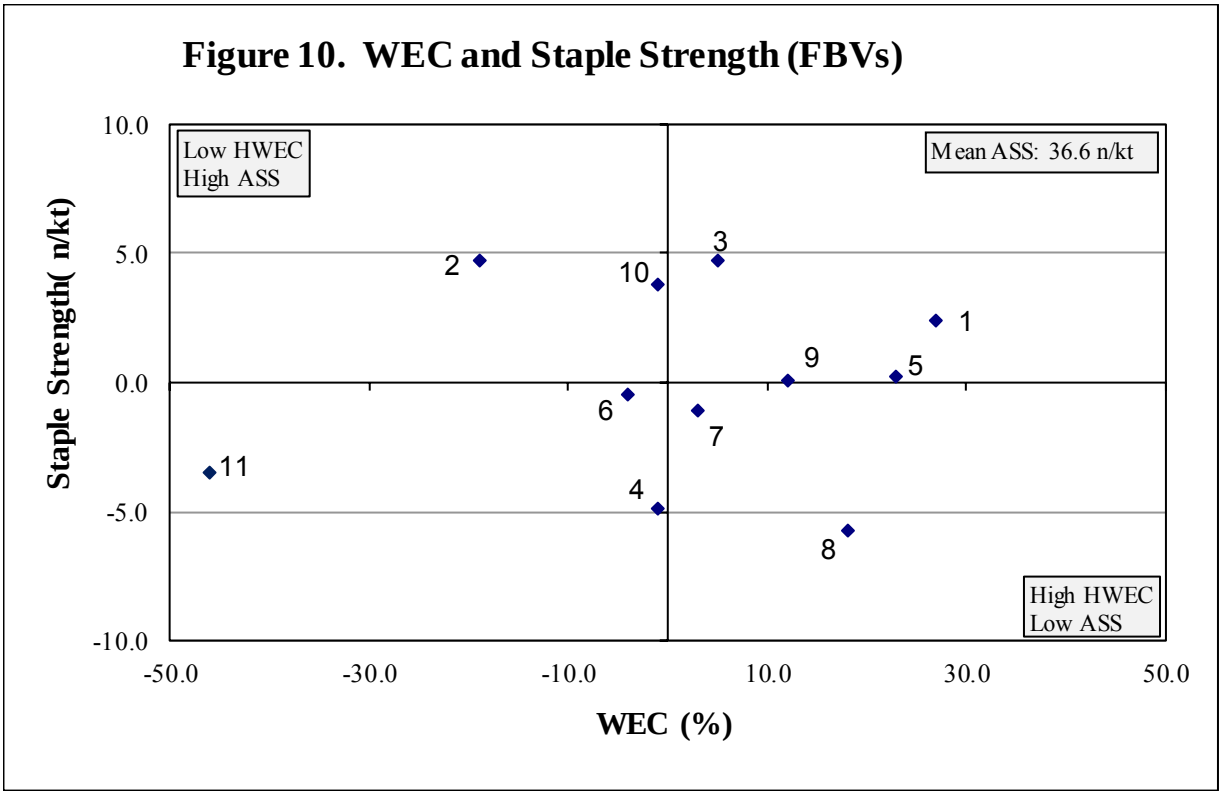


Figure 9. Body Weight and Eye Muscle Depth (FBVs)
The graph describes performance for body weight on the side axis and eye muscle depth on the bottom axis. Sires that are above average for body weight and above average for eye muscle depth are located in the top right hand quarter.



Summary Graphs

Figure 10. 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 3 and 4

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 6 provides more detail on Classer's Visual Grade and the site's Breeding Objective.

Table 3. **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	P	A	P	A	W	Y	A	A	A
1	Bindawarra, 130001	17	3	4	5	7	-0.5	-0.1	-0.2	0.3	-0.7	-4	5
2	Cahirblonig, 140308	18	-7	-9	-9	-10	0.8	1.8	-0.4	0.5	-2.5	4	-8
3	Connewarran, 1002	23	-1	0	1	2	0.4	0.4	-1.2	-2.1	-2.2	0	-1
4	Greenfields Poll, 140345	23	-5	0	-1	1	0.4	0.6	0.4	1.1	3.4	-13	9
5	Hinesville, 130047	17	-1	1	2	1	0.3	0.7	-0.4	0.9	1.1	-15	-1
6	Kilfeera Park, 100024	30	5	1	3	5	0.1	-0.3	0.6	-2.3	-3.7	1	1
7	Kilfeera Park, 150409	23	-1	0	-3	0	-0.3	-0.8	1.0	2.3	2.7	16	-5
8	Pastora Poll, 113416	17	3	6	2	5	-0.5	-1.4	-1.8	-3.0	-2.5	-9	22
9	The Mountain Dam, 14/RG076	30	-2	5	0	5	-0.8	-1.2	-0.6	-1.4	-2.1	14	-12
10	Toland Poll, 151042	37	7	-1	1	-6	0	0.2	1.7	3.1	2.7	19	-9
11	Toland Poll, 151058	32	-1	-9	-2	-10	0	0.2	1.1	0.7	3.8	-13	-2

^ 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 4. **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	Bindawarra, 130001	17	-0.3	-0.2	-3.4	2.4	-0.9	-2.3	-0.4		1.5		27	
2	Cahirblonig, 140308	18	0.0	-0.8	-4.7	4.7	2.8	4.1	3.1		2.4		-19	
3	Connewarran, 1002	23	-1.2	-1.9	10.4	4.7	-3.5	-4.7	-0.4		0.1		5	
4	Greenfields Poll, 140345	23	0.8	0.8	1.8	-4.9	-5.9	-6	0.0		-1.7		-1	
5	Hinesville, 130047	17	-0.1	-0.4	-2.9	0.2	-2.5	-2.1	0.4		-1.0		23	
6	Kilfeera Park, 100024	30	0.0	0.4	-8.4	-0.5	1.7	2.2	-1.2		-0.1		-4	
7	Kilfeera Park, 150409	23	1.9	2.0	-1.9	-1.1	4.2	4.5	-1.2		-0.1		3	
8	Pastora Poll, 113416	17	0.8	1.9	0.2	-5.7	-2.4	-2.4	-1.4		-1.9		18	
9	The Mountain Dam, 14/RG076	30	-1.6	-1.5	7.7	0.1	2.8	0.8	-0.2		0.4		12	
10	Toland Poll, 151042	37	0.1	0.0	-1.7	3.8	2.5	3.6	0.6		0.8		-1	
11	Toland Poll, 151058	32	-0.5	-0.3	2.7	-3.5	1.3	2.5	0.7		-0.5		-46	

^ 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 5a, 5b, 5c, 5d

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 5a. **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
Bindawarra, 130001	0.0	87	6	7	0	0	0.1	33	47	20	0	0	-0.1	13	47	40	0	0	0.1	6	47	47	0	0
Cahirblonig, 140308	-0.1	94	0	6	0	0	-0.3	59	41	0	0	0	0.4	5	24	65	6	0	-0.3	17	65	18	0	0
Connewarran, 1002	0.0	81	19	0	0	0	0.2	38	33	29	0	0	-0.1	14	48	38	0	0	0.5	0	33	57	10	0
Greenfields Poll, 140345	0.4	59	27	9	5	0	0.5	9	55	36	0	0	0.0	9	50	41	0	0	0.0	0	73	27	0	0
Hinesville, 130047	0.2	73	20	7	0	0	0.2	33	40	27	0	0	-0.1	27	20	53	0	0	-0.3	6	87	7	0	0
Kilfeera Park, 100024	0.0	89	7	4	0	0	-0.2	54	39	7	0	0	0.1	10	36	54	0	0	-0.3	18	61	21	0	0
Kilfeera Park, 150409	-0.1	95	0	5	0	0	-0.4	68	27	5	0	0	0.2	9	32	59	0	0	0.1	9	41	50	0	0
Pastora Poll, 113416	-0.1	94	6	0	0	0	0.0	41	47	6	6	0	0.0	6	53	41	0	0	0.1	0	65	35	0	0
The Mountain Dam, 14/RG076	-0.1	93	7	0	0	0	-0.1	50	37	13	0	0	-0.2	30	37	27	6	0	0.4	0	33	63	4	0
Toland Poll, 151042	-0.1	97	3	0	0	0	-0.2	50	42	8	0	0	0.0	14	39	47	0	0	-0.3	14	72	11	3	0
Toland Poll, 151058	-0.1	93	4	3	0	0	0.1	38	41	21	0	0	-0.1	14	48	38	0	0	0.0	3	59	38	0	0
Average performance	**1.2**	**87**	**9**	**4**	**0**	**0**	**1.7**	**43**	**41**	**16**	**0**	**0**	**2.3**	**14**	**39**	**46**	**1**	**0**	**2.3**	**7**	**58**	**34**	**1**	**0**

Table 5b. **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											
	Staple Weathering						Staple Structure					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5
Bindawarra, 130001	0.1	7	60	33	0	0	0.0	14	73	13	0	0
Cahirblonig, 140308	-0.3	24	65	11	0	0	-0.1	12	88	0	0	0
Connewarran, 1002	0.6	0	24	71	5	0	0.1	0	95	5	0	0
Greenfields Poll, 140345	0.2	0	64	36	0	0	0.0	9	86	5	0	0
Hinesville, 130047	-0.3	13	80	7	0	0	0.0	7	93	0	0	0
Kilfeera Park, 100024	-0.2	14	75	11	0	0	0.1	4	89	7	0	0
Kilfeera Park, 150409	-0.2	18	64	18	0	0	-0.1	9	91	0	0	0
Pastora Poll, 113416	0.0	6	65	29	0	0	0.2	0	82	18	0	0
The Mountain Dam, 14/RG076	0.3	0	47	53	0	0	0.0	13	80	7	0	0
Toland Poll, 151042	-0.2	14	75	11	0	0	-0.1	14	83	3	0	0
Toland Poll, 151058	-0.1	7	72	21	0	0	0.0	7	86	7	0	0
Average performance	**2.2**	**9**	**63**	**28**	**0**	**0**	**2.0**	**8**	**86**	**6**	**0**	**0**

Pigmentation - Marking														
Fibre pigmentation							Non-fibre pigmentation						Black	Spot
Dev	1	2	3	4	5		Dev	1	2	3	4	5	5	5
Fibre Pigmentation was not scored							-0.1	40	60	0	0	0	0	0
							0.1	24	76	0	0	0	0	0
							-0.2	52	43	5	0	0	0	0
							-0.3	55	45	0	0	0	0	0
							-0.2	53	40	7	0	0	0	0
							0.0	36	57	7	0	0	0	0
							0.0	36	55	9	0	0	0	0
							0.9	12	53	5	24	6	0	0
							-0.2	60	37	0	3	0	0	0
							0.0	47	42	8	3	0	0	0
							0.0	38	52	10	0	0	0	0
							1.7	**41**	**51**	**5**	**3**	**0**		

Table 5c. **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
Bindawarra, 130001	0.0	100	0	0	0	0	0.1	93	0	7	0	0	0.0	100	0	0	0	0	-0.1	0	100	0	0	0	-0.1	64	36	0	0	0
Cahirblonig, 140308	0.0	100	0	0	0	0	0.1	94	0	6	0	0	0.0	100	0	0	0	0	0.1	0	88	12	0	0	-0.4	88	12	0	0	0
Connewarran, 1002	0.0	100	0	0	0	0	0.0	95	0	5	0	0	0.0	100	0	0	0	0	0.0	0	90	10	0	0	-0.2	76	24	0	0	0
Greenfields Poll, 140345	0.0	100	0	0	0	0	0.0	95	0	5	0	0	0.0	100	0	0	0	0	0.1	0	82	18	0	0	-0.3	82	18	0	0	0
Hinesville, 130047	0.0	100	0	0	0	0	-0.1	100	0	0	0	0	0.1	93	0	7	0	0	0.0	0	93	7	0	0	0.2	43	43	14	0	0
Kilfeera Park, 100024	0.0	100	0	0	0	0	-0.1	100	0	0	0	0	0.0	100	0	0	0	0	0.0	0	93	7	0	0	0.2	44	48	8	0	0
Kilfeera Park, 150409	0.0	100	0	0	0	0	0.0	95	0	5	0	0	0.0	100	0	0	0	0	-0.1	0	100	0	0	0	0.0	62	29	9	0	0
Pastora Poll, 113416	0.0	100	0	0	0	0	-0.1	100	0	0	0	0	0.0	100	0	0	0	0	0.1	0	82	18	0	0	0.9	19	38	31	12	0
The Mountain Dam, 14/RG076	0.0	100	0	0	0	0	-0.1	100	0	0	0	0	0.0	100	0	0	0	0	-0.1	7	90	3	0	0	-0.2	77	23	0	0	0
Toland Poll, 151042	0.0	100	0	0	0	0	0.0	97	0	3	0	0	0.0	100	0	0	0	0	-0.1	6	92	2	0	0	0.1	56	31	13	0	0
Toland Poll, 151058	0.0	100	0	0	0	0	-0.1	100	0	0	0	0	0.0	100	0	0	0	0	0.0	0	93	7	0	0	-0.2	79	17	4	0	0
Average performance	**1.0**	**100**	**0**	**0**	**0**	**0**	**1.1**	**97**	**0**	**3**	**0**	**0**	**1.0**	**99**	**0**	**1**	**0**	**0**	**2.1**	**1**	**91**	**8**	**0**	**0**	**1.5**	**63**	**29**	**7**	**1**	**0**

Table 5d. **Visual trait assessments – Breech**

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

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

Breeders flock, Sire name	Breech Visual Traits																											
	Breech Cover *Marking*						Breech Wrinkle *Marking*						Dag *Yearling*						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
Bindawarra, 130001	0.2	0	4	67	29	0	0.8	0	24	24	48	4	0.0	0	33	53	14	0	Crutch Cover and Urine was not scored											
Cahirblonig, 140308	-0.1	0	28	56	16	0	-0.3	0	76	24	0	0	0.6	0	17	33	50	0												
Connewarran, 1002	0.0	0	28	47	25	0	0.1	0	50	41	9	0	0.3	0	26	39	35	0												
Greenfields Poll, 140345	-0.1	0	30	56	14	0	-0.2	0	74	22	4	0	-0.4	4	55	36	5	0												
Hinesville, 130047	0.1	0	19	54	27	0	0.3	0	38	50	4	8	0.0	0	41	41	18	0												
Kilfeera Park, 100024	0.2	0	8	68	24	0	-0.2	0	70	27	3	0	0.2	0	31	48	14	7												
Kilfeera Park, 150409	-0.1	0	20	72	8	0	-0.2	0	68	28	4	0	0.0	5	30	48	17	0												
Pastora Poll, 113416	0.1	0	13	66	21	0	0.7	0	31	21	41	7	0.2	0	29	47	18	6												
The Mountain Dam, 14/RG076	0.1	0	19	56	25	0	-0.2	0	78	14	8	0	0.2	0	27	50	20	3												
Toland Poll, 151042	0.0	0	16	69	15	0	-0.3	0	79	21	0	0	-0.5	5	68	22	5	0												
Toland Poll, 151058	-0.2	0	37	49	14	0	-0.3	0	80	17	3	0	-0.6	19	58	13	10	0												
Average performance	**3.0**	**0**	**20**	**60**	**20**	**0**	**2.5**	**0**	**61**	**26**	**11**	**2**	**2.8**	**3**	**38**	**39**	**19**	**1**												

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

2016 Drop
Adult Assessment