

Muresk

2016 Drop Hogget Assessment

Within-Site Results

Conducted by

The Stud Merino Breeders' Association of WA



under the auspices of

The Australian Merino Sire Evaluation Association



November 2017

Disclaimer

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

Foreword

Muresk Central Test Sire Evaluation - Muresk

Muresk is an accredited Central Test Sire Evaluation (CTSE) site evaluation. It conforms to the requirements of the Australian Merino Sire Evaluation Association (AMSEA).

The Stud Merino Breeders Association of WA (Inc.) runs the MURESK Sire Evaluation site.

MURESK has the following background.

- The 2016 Drop trial is the first held at the Muresk campus.
- Muresk sire evaluation is a partnership between the Muresk Institute and the Stud Merino Breeders of WA

Brett Jones

Chairman – Muresk Site Committee

2016 Drop Hogget Assessment

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

The Hogget fleece and visual assessments were made at 13 months of age with 9.5 months of wool growth. Hogget shearing was conducted at 14 months of age with 10.5 months of wool growth.

Site Committee

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Sire and Owner Details

Breeder's flock, Sire name Sire ID #, Breed †	Contact Details
Barloo, 130121 503159-2013-130121, Merino	Richard House PO Box 37, Gnowangerup WA 6335 P: (08) 9827 1565, M: 0428 27 1565, E: barloostud@bigpond.com
Billandri Poll, 130087 (Link) 600571-2013-130087, Poll Merino	Bill Sandilands Billandri, Kendenup WA 6323 P: (08) 9851 4030, M: 0427 51 4030, E: billandri@iinet.net.au
Challara, 140394 504876-2014-140394, Merino	Ron Wilkinson 821 Koonah Rd, Dangaragan WA 6507 P: (08) 9652 9062, M: 0427 42 7691, E: challara2000@outlook.com
Claypans Poll, 140783 600827-2014-140783, Poll Merino	Steven Bolt PO Box 226, Corrigin WA 6375 M: 0427 65 2043, E: steven_bolt@hotmail.com
Cranmore Poll, 140307 600139-2014-140307, Poll Merino	Kristin Lefroy RSM 427, Moora WA 6510 P: (08) 9654 9066, M: 0418 92 5760, E: kristinlestroy@cranmore.com.au
Ejanding Poll, 145096 (Link) 600443-2014-145096, Poll Merino	Brett Jones RMB 2000, Dowerin WA 6461 P: (08) 9632 3012, M: 0428 32 3012, E: ejandingstud@bigpond.com
Manunda Poll, 141341 600455-2014-141341, Poll Merino	Wayne Button PO Box 4, Tammin WA 6409 P: (08) 9637 1046, E: wpbutton@activ8.net.au
Nepowie Poll, 140050 600059-2014-140050, Poll Merino	Cameron White Box 317, Narrogin WA 6312 P: (08) 9882 7013, M: 0428 82 7013, E: camlisa@westnet.com.au
Nerstane, 130467 (Link) 503298-2013-130467, Merino	John, Hamish and Jock McLaren Nerstane, Woolbrook NSW 2354 P: (02) 6777 5881, M: 0429 77 5891, E: info@nerstane.com.au
Woodyarrup, 120175 (Link) 500412-2012-120175, Merino	Craig and Lachlan Dewar PO Box 61, Broomehill WA 6318 P: (08) 9824 1257, M: 0429 10 0239, E: craig@woodyarrup.com.au
Woolkabin, 140533 502665-2014-140533, Merino	Chris Patterson PO Box 217, Katanning WA 6317 P: (08) 9822 8050, M: 0428 22 8050, E: cf.patterson@bigpond.com

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

(Unreg) Sire bred in an unregistered flock.

Sire ID provides a unique number for all sheep. A sire ID has 16 digits.

- 2 for the breed of the flock, e.g., Merino (50), Poll Merino (60), Dohne (51), SAMM (48), Afrino (AF)

- 4 for flock code, AASMB Registered flock code or unregistered code.

- 4 for year of drop.

- 6 for tag number used in the breeder's records.

† Breed of flock in which the sire was born

Host Property for 2016/17 drop progeny and location

Muresk is an 898ha property owned and managed by the Department of Training and Workforce Development located in the Avon Valley region, 1.5 hrs north east of Perth. The climate is described as Mediterranean with an average annual rainfall of 400-420mm. Muresk is a mixed enterprise farm that includes a 300ha winter cropping program, a housed piggery, self-replacing Dohne and merino flocks and a self-replacing herd of Murray Grey cows.

Ewe Base

The ewe base is described as a moderate framed, plain bodied, animal with a moderate wool cut based on Billandri bloodlines. Ewes for the project were selected from two age groups from the 'Muresk' commercial flock.

Joining

600 ewes were artificially inseminated (AI) in 2016. AI was completed over two days by Westbreed (WA) Pty Ltd from Northam, on 24th and 25th of January. 12 Sires were used.

Pregnancy and lambing

Ewes were separated into sire mating groups approximately 7 days before lambing and tagged and returned to one management group on 1st July. Ewes and lambs were fed ad lib while separated in lambing plots.

Breech and pigmentation scored on the 1st of August.

Weaning to Hogget Assessment

The good growing conditions in 2016 carried through into the spring.

Seasonal conditions

The spring of 2015 leading into the 2016 AI program was hot and dry. Supplementary feeding of the ewes started in November given the early feed shortage. Spring and summer provided good growing conditions, however winter 2017 was very dry necessitating extra supplementary feeding.

Assessment and Management Program

Activity		Date/s	Age	Wool
Selection of ewes		December 2015		
Allocation of ewes for mating		January 2016		
Pregnancy scanning		14 April 2016		
Allocated to lambing paddocks		13 June 2016		
Lambing: start – finish		16 – 23 June 2016		
Lambing mobs boxed to one management group		1 July 2016	12 days	
Tagging, pigmentation and breech scoring		1 August 2016	42 days	
Marking		1 August 2016	42 days	
Weaning		21 September 2016	93 days	
Even up Shearing		5 October 2016	107 days	
Mid side fleece sampling	H	25 July 2017	13 months	9.5 months
Visual trait scoring	H	25 July 2017	13 months	9.5 months
Shearing	H	22 August 2017	14 months	10.5 months
Fat and eye muscle scanning	Y	27 March 2017	9 months	9.5 months
Worm egg count sampling		WEC not measured		
Body weighing	W	21 September 2016	3 months	
	Y	27 March 2017	9 months	
	H	15 September 2017	15 months	
Drench	Drenched at weaning.			
Fly treatment	Treated with Clik® at marking in August. Progeny are mulesed.			
Supplementary feeding	Pellets and mineral supplement post weaning and continuing with added hay and pellets from May 2017.			
Field day or public display	Field Day & Progeny Display– 30 th and 31 st August 2017 Dowerin Field Days			

Visual Trait Assessment and Site Breeding Objective

Visual trait assessment

Classer's Grade: Russel McKay

Trait Scores: Committee/Brett Jones/Jonathon England/Ken Hart

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 sheep to be easy care based on/because of good confirmation and constitution. Medium to large frame. Bright white stylish wool free from colour and water faults. Wool cut to be sufficient to balance wool production with body size to ensure both add real value to the bottom line.

Sire Codes and Pedigrees

Sire code	Breeders flock, Sire number	Sheep Genetics ID	Sire of Sire
1	Barloo, 130121	503159-2013-130121	Unknown
2	Billandri Poll, 130087	600571-2013-130087	509605-2009-090122
3	Challara, 140394	504876-2014-140394	504876-2012-120274
4	Claypans Poll, 140783	600827-2014-140783	Unknown
5	Cranmore Poll, 140307	600139-2014-140307	600139-2012-122790
6	Ejanding Poll, 145096	600443-2014-145096	600443-2012-125202
7	Manunda Poll, 141341	600455-2014-141341	Unknown
8	Nepowie Poll, 140050	600059-2014-140050	Unknown
9	Nerstane, 130467	503298-2013-130467	503298-2010-100919 (Nerstane, 100919)
10	Woodyarrup, 120175	500412-2012-120175	500412-2009-091162
11	Woolkabin, 140533	502665-2014-140533	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.

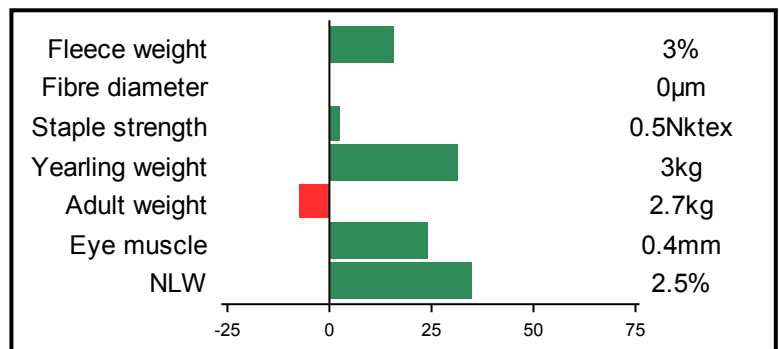
Site Reports present 4 indexes, DP+; MP+; FP+ and WP+. These indexes are the same as MERINOSELECT indexes of that name but account for the fact that direct reproduction records have not been captured by AMSEA sire evaluation. The WP+ index was established by AMSEA and is now available as custom MERINOSELECT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

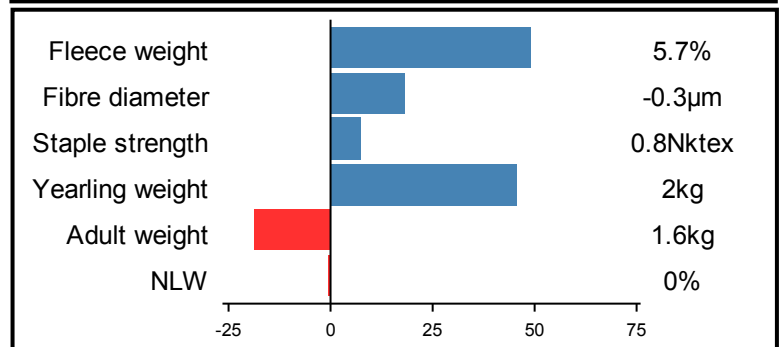
Based on a meat focused production system where surplus progeny are sold as lambs and a portion of ewes are joined to terminal sires. Large increase in body weight and carcass traits. Moderate increase in fleece weight. Maintain fibre diameter and staple strength. Moderate increase in reproduction.

Percentage Contribution to Economic Gain **Trait Gain**



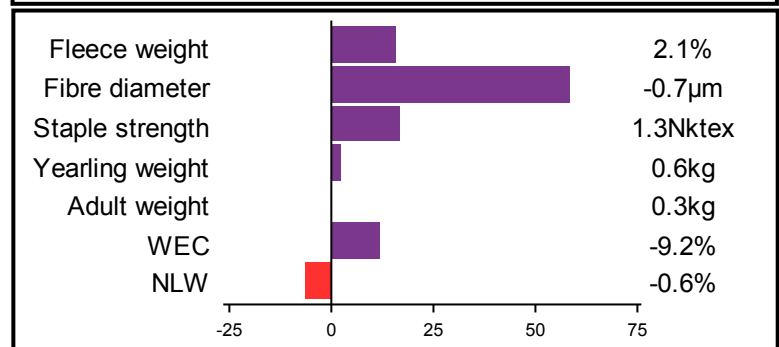
Merino Production Plus (MP+)

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



Fibre Production Plus (FP+)

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



Wool Production Plus (WP+)

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

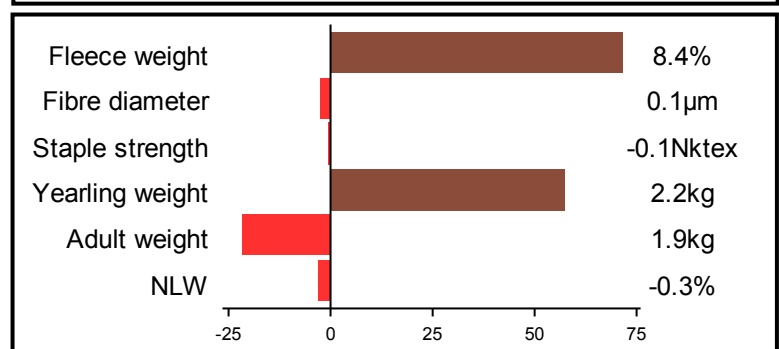


Table 1. AMSEA Index Values and Classer's Visual Grade

The index values reported are based on measured traits FBV performance with varying emphasis on fleece weight, fibre diameter, body weight, staple strength and worm egg count. See 'Index Options' (page 7) 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 % H [^]	Culls % H
1	Barloo, 130121	27	103	103	99	109	7	-11
2	Billandri Poll, 130087	32	90	86	93	85	-3	19
3	Challara, 140394	34	108	97	97	98	-4	10
4	Claypans Poll, 140783	43	95	97	104	92	-10	1
5	Cranmore Poll, 140307	30	93	91	90	95	5	-9
6	Ejanding Poll, 145096	39	107	108	102	111	-4	-7
7	Manunda Poll, 141341	36	110	114	112	110	6	9
8	Nepowie Poll, 140050	46	120	108	105	106	2	0
9	Nerstane, 130467	37	87	101	105	98	4	-9
10	Woodyarrup, 120175	34	100	104	104	105	-5	1
11	Woolkabin, 140533	44	88	101	98	103	-12	8
	Average performance	37	100	101	101	101	19	22

[^] 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%.

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

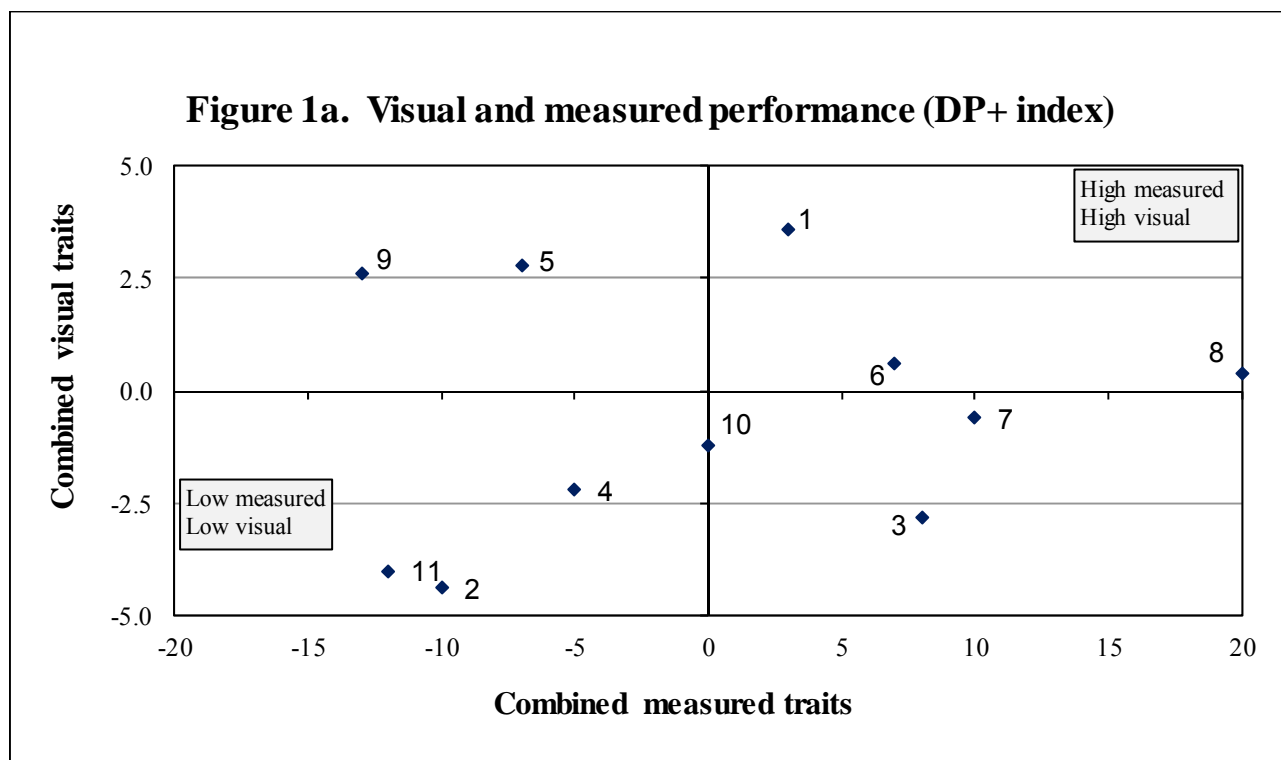


Figure 1b. Combined measured traits (MP+ index) and combined visually assessed traits for the site objective.

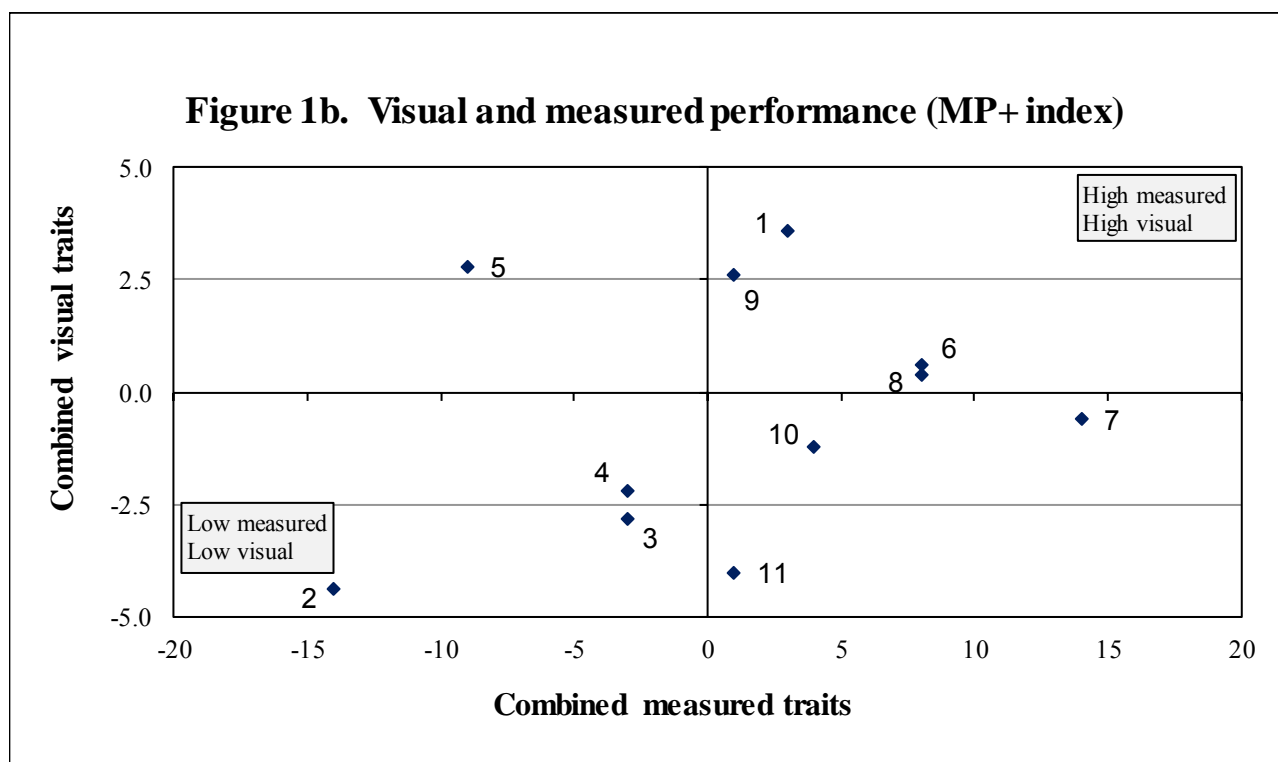


Figure 1c. Combined measured traits (FP+ index) and combined visually assessed traits for the site objective.

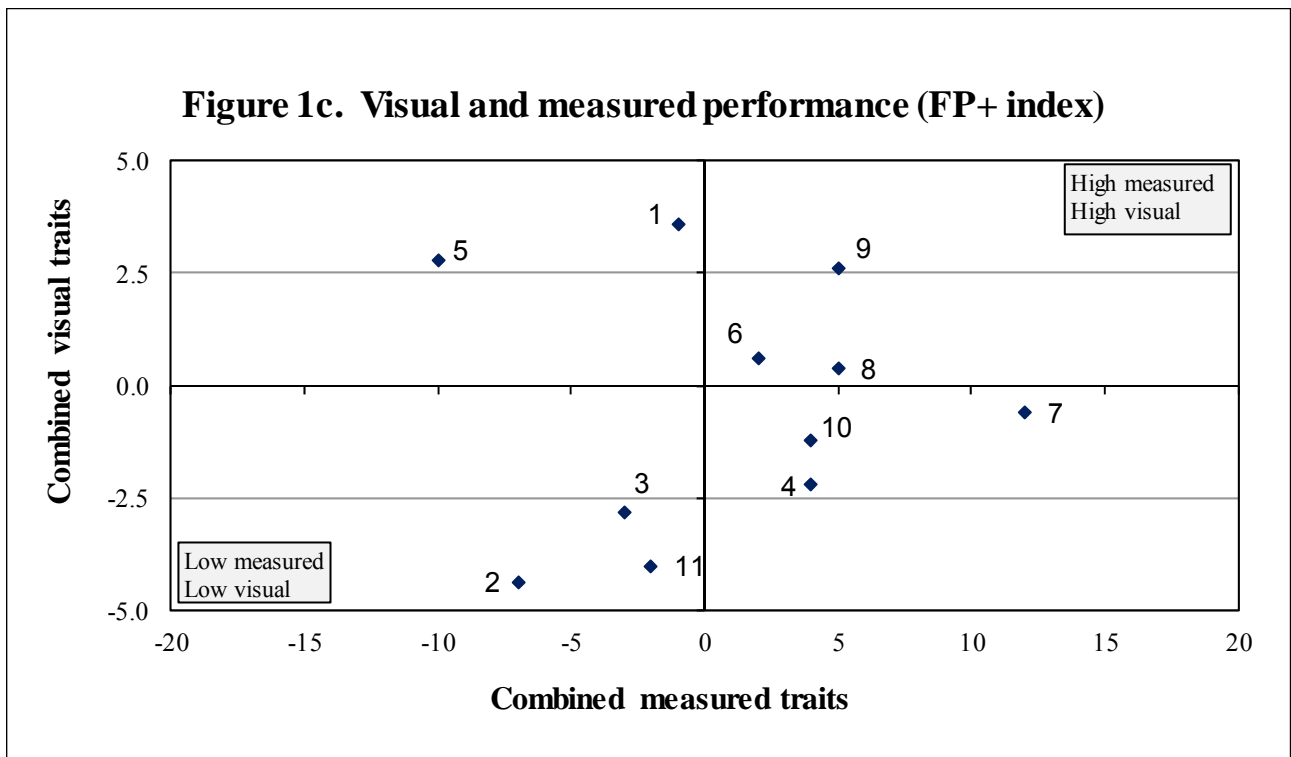


Figure 1d. Combined measured traits (WP+ index) and combined visually assessed traits for the site objective.

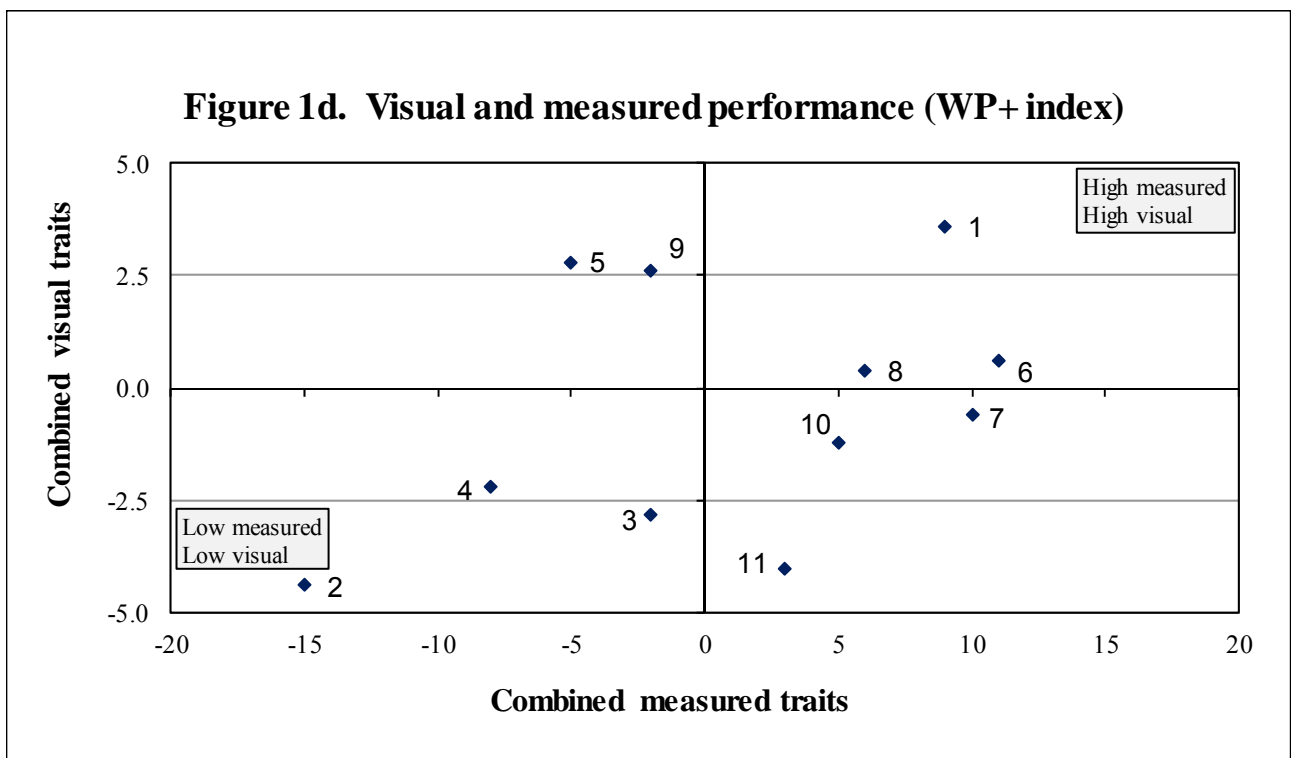


Figure 2. Fleece weight by fibre diameter (FBVs)

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.

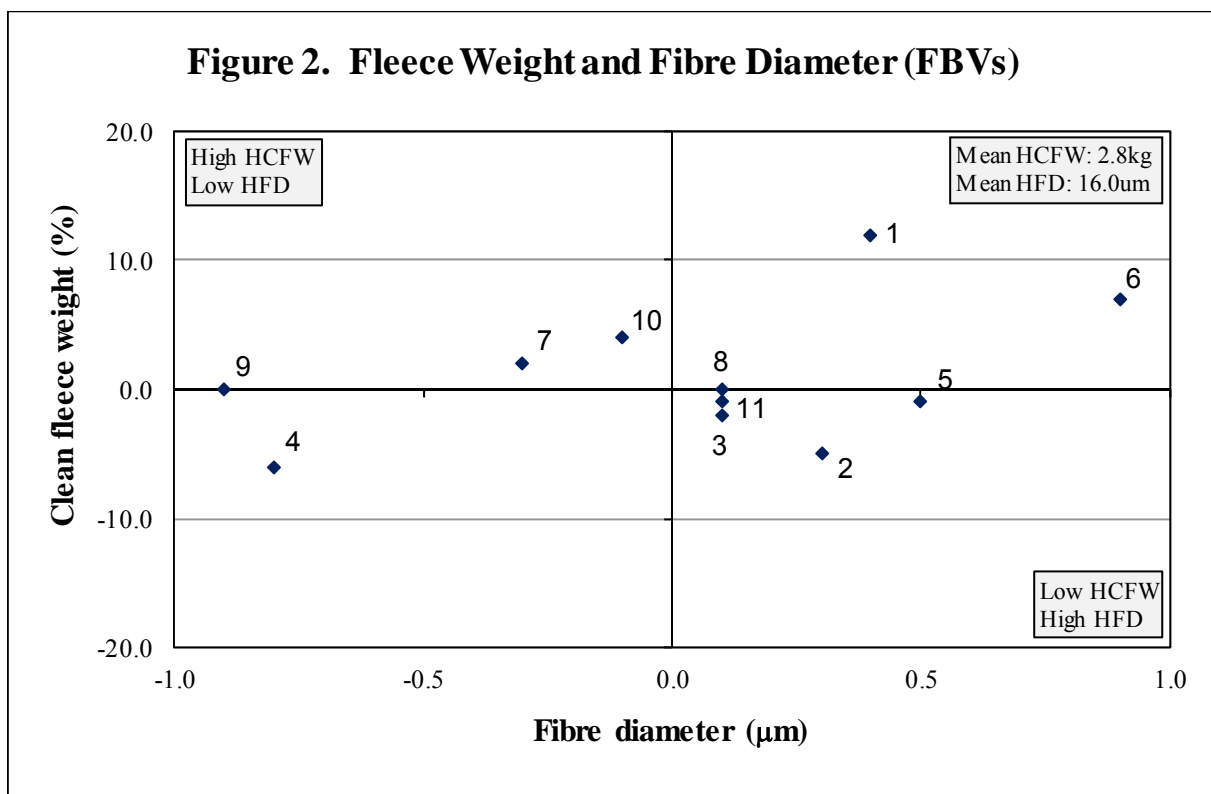


Figure 3. Classer's Visual Grade - Tops by Cull

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.

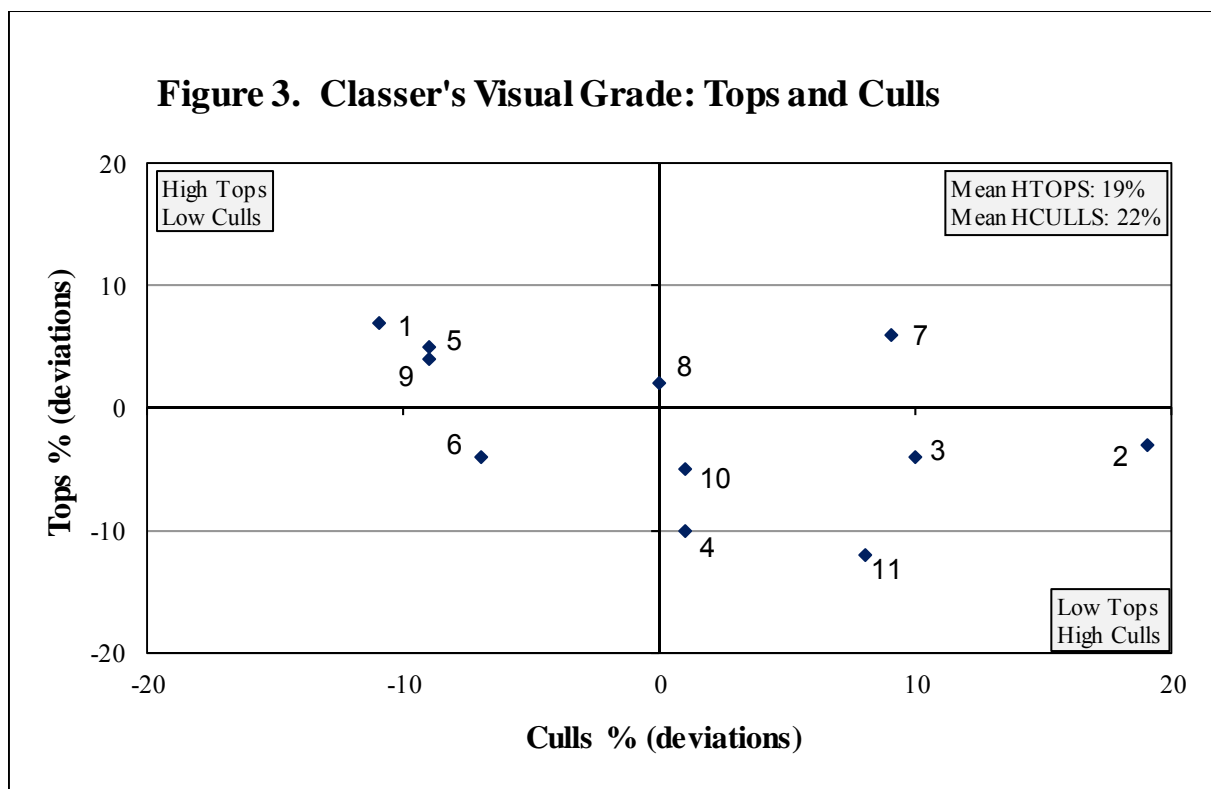


Figure 4. Fleece weight by body weight (FBVs)

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.

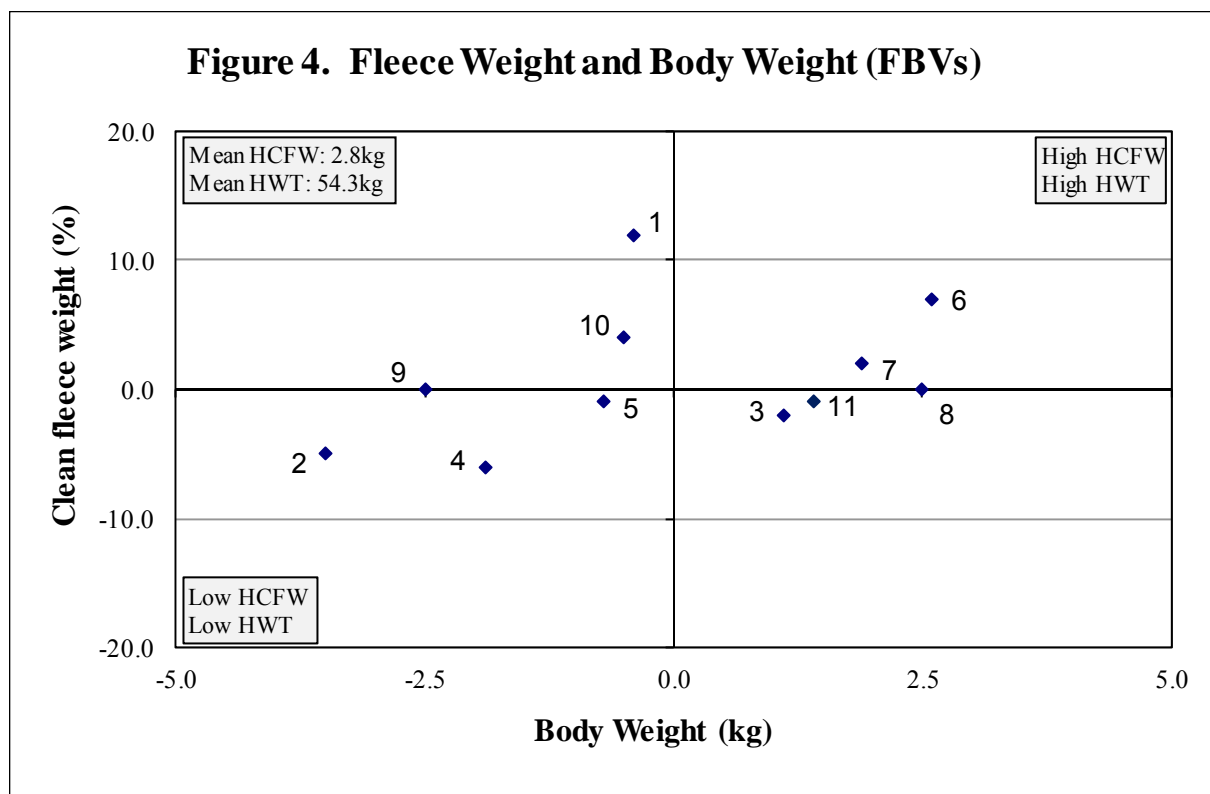


Figure 5. Fleece weight by fat (FBVs)

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

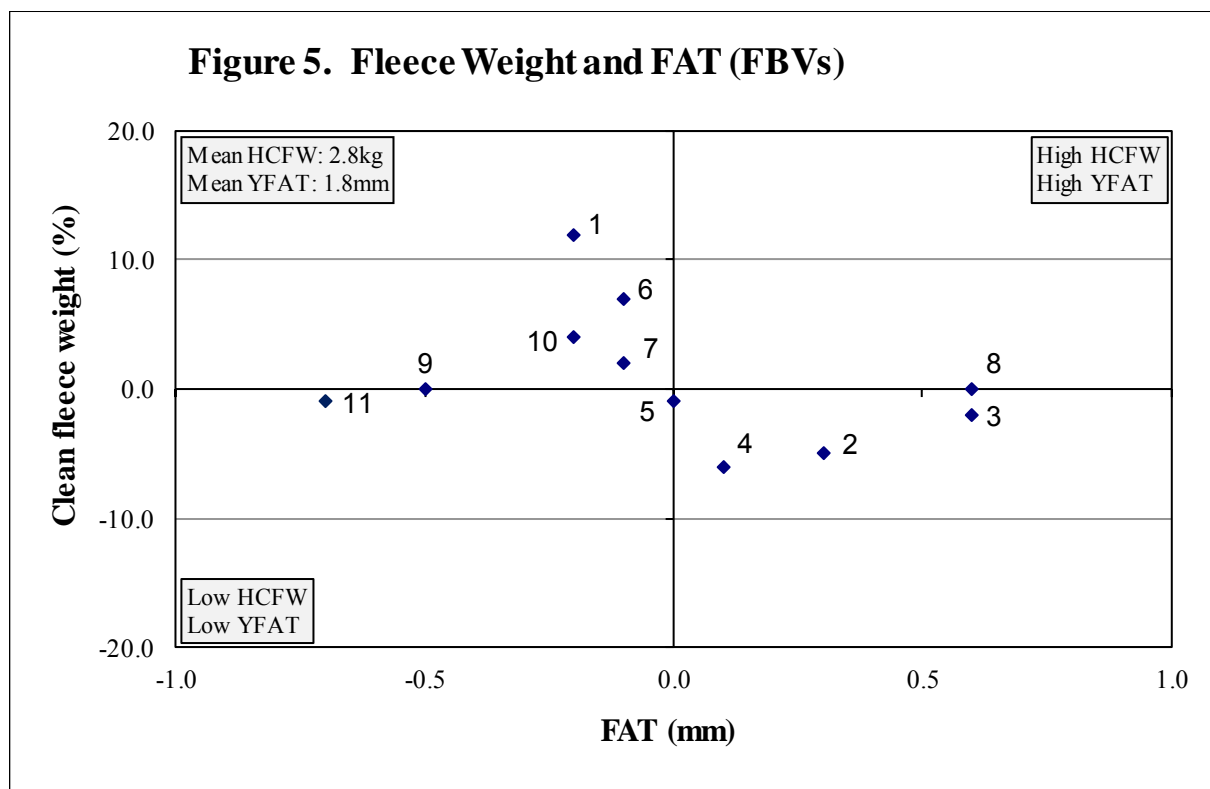


Figure 6. Fleece weight by eye muscle depth (FBVs)

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

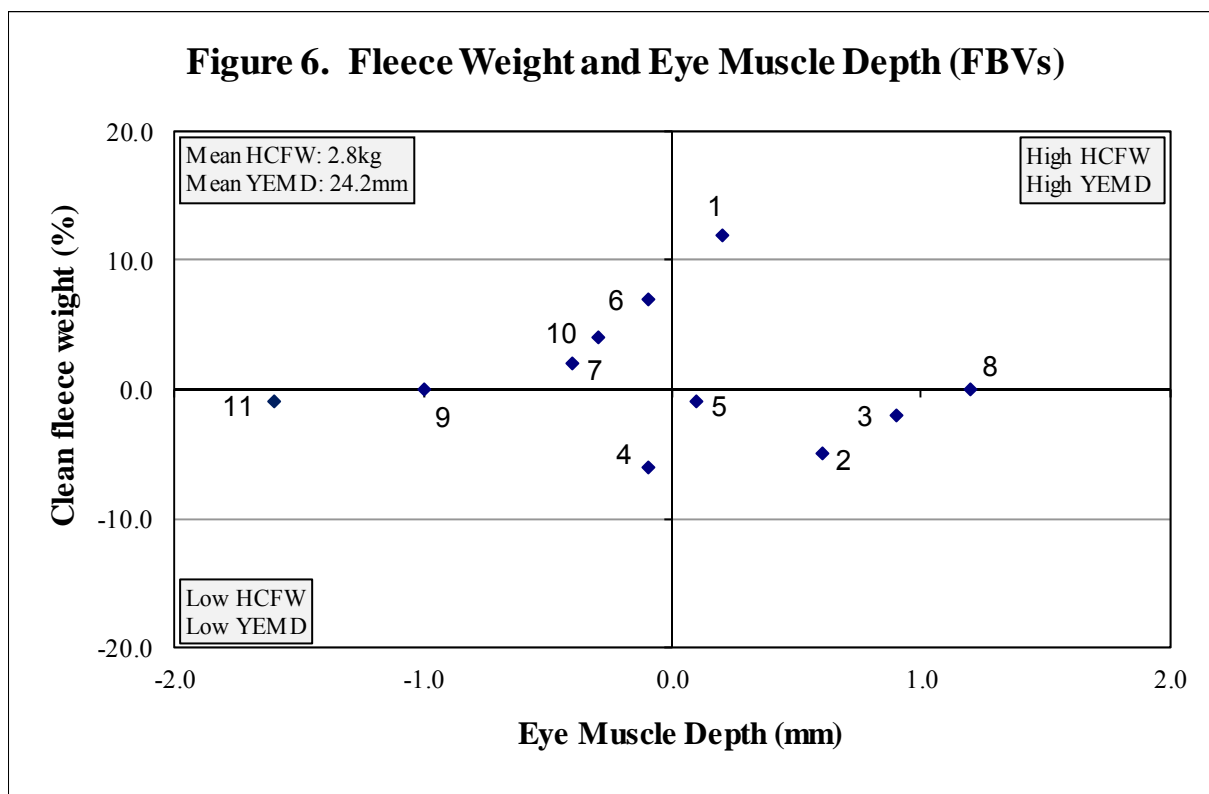
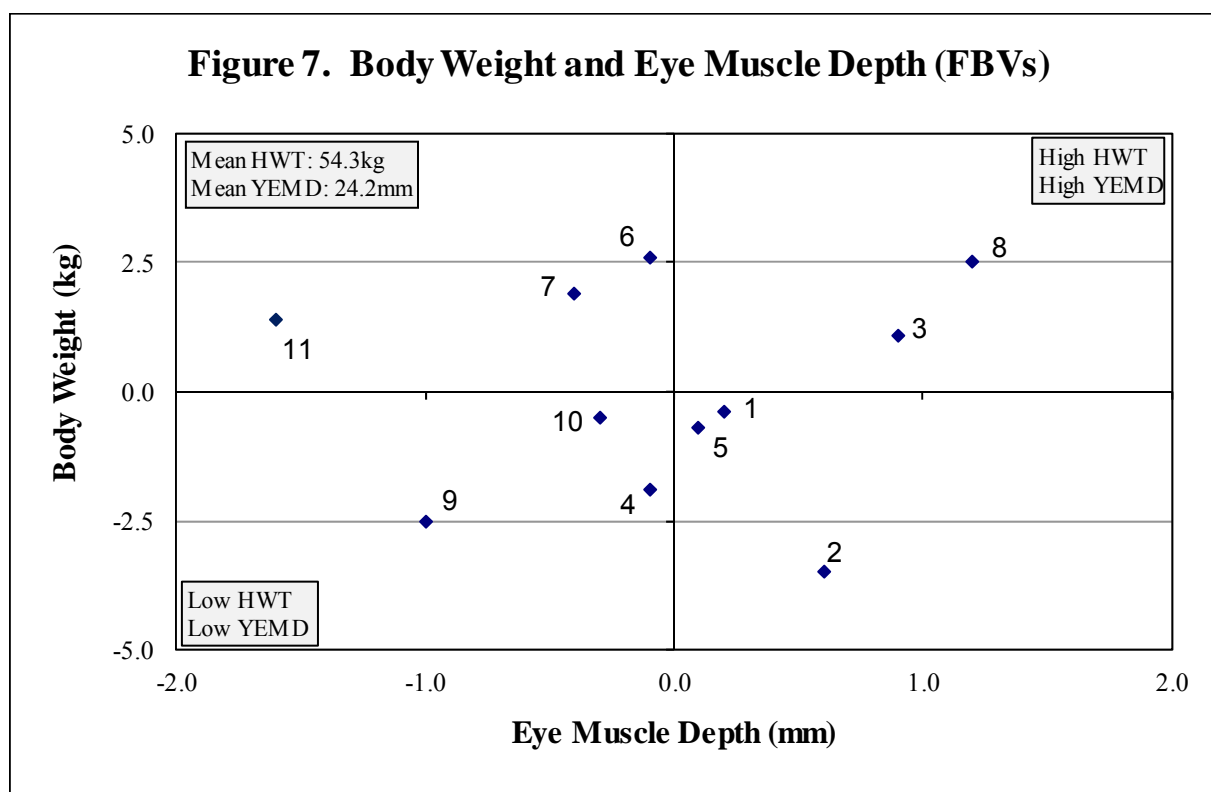


Figure 7. Body weight by eye muscle depth (FBVs)

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



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:	<p>Flock Breeding Values (FBVs) are Estimated Breeding Values (EBVs) calculated by Sheep Genetics for the sires evaluated in this report. Only data from this site evaluation is used in the calculation of these FBVs. FBVs describe the relative breeding value (genetic performance) of the sires (in this case based on the performance of their progeny). A sire's progeny will express half of their sire's FBV. FBVs do not necessarily reflect the sire's observed performance, which is a combination of both genetic and environmental influences. FBVs are an estimate of the genetic component of the sheep's performance.</p> <p>The highest performing sires for each trait (trait leaders) are highlighted by shading. Curvature is the possible exception when for many breeders the optimum score is in the middle of the range therefore trait leaders have not been highlighted.</p>
Traits: Abbreviation, trait and the (units reported)	<p>GFW: Greasy fleece weight (percentage). CFW: Clean fleece weight (percentage). FD: Average fibre diameter (micron). WT: Body weight (kilograms). FDCV: Fibre diameter coefficient of variation (percentage). SL: Staple length (mm) at the mid-side. SS: Staple strength (N/ktex) at the mid-side. EMD: Eye muscle depth (mm) at the 'C' site. FAT: Fat depth (mm) at the 'C' site. CURV: Fibre curvature (degrees). WEC: Worm egg count (% deviation in worm burden of sire's progeny).</p>
Age at assessment:	<p>W = Weaning - 42 to 120 days (6 weeks to 4 months of age). E = Early Post Weaning - 120 to 210 days (4 to 7 months of age). P = Post Weaning - 210 to 300 days (7 to 10 months of age). Y = Yearling - 300 to 400 days (10 to 13 months of age). H = Hogget - 400 to 540 days (13 to 18 months of age). A = Adult - 540 days or older (18 months and older).</p>
Classer's Visual Grade:	<p>A classer grades all progeny as either Tops, Flocks or Culls based on their visual assessment of all traits relative to the site's Breeding Objective. The percentage deviation from the average of Tops and Culls is presented in this report. Average percentage of Tops and Culls for the entire drop is included in Table 1.</p> <p>Page 7 provides more detail on Classer's Visual Grade and the site's Breeding Objective.</p>

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

Sire Code	Breeder's flock, Sire name	Number of Progeny	Flock Breeding Values (deviations)						Classer's Visual Grade ¹	
			GFW % H [^]	CFW % H	FD µm H	WT kg W Y H			Tops % H	Culls % H
1	Barloo, 130121	27	11	12	0.4	0.3	-0.3	-0.4	7	-11
2	Billandri Poll, 130087	32	-6	-5	0.3	-0.9	-2.8	-3.5	-3	19
3	Challara, 140394	34	-3	-2	0.1	0.7	1.1	1.1	-4	10
4	Claypans Poll, 140783	43	-6	-6	-0.8	-0.9	-1.6	-1.9	-10	1
5	Cranmore Poll, 140307	30	1	-1	0.5	-0.1	-0.6	-0.7	5	-9
6	Ejanding Poll, 145096	39	5	7	0.9	0.8	2.0	2.6	-4	-7
7	Manunda Poll, 141341	36	2	2	-0.3	0.6	1.6	1.9	6	9
8	Nepowie Poll, 140050	46	-1	0	0.1	0.2	2.1	2.5	2	0
9	Nerstane, 130467	37	2	0	-0.9	-1.2	-2.5	-2.5	4	-9
10	Woodyarrup, 120175	34	3	4	-0.1	-0.7	-0.4	-0.5	-5	1
11	Woolkabin, 140533	44	0	-1	0.1	0.4	1.2	1.4	-12	8

[^] 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	Breeder's flock, Sire name	Number of progeny	Flock Breeding Values (deviations)						WEC % P
			FDCV % H	SL mm H	SS N/ktex H	CURV deg/mm H	FAT mm Y	EMD mm Y	
1	Barloo, 130121	27	0.7	4.4	-3.3	-4.0	-0.2	0.2	WEC not measured
2	Billandri Poll, 130087	32	-1.2	2.2	1.8	-3.4	0.3	0.6	
3	Challara, 140394	34	-0.7	8.8	-0.2	-3.5	0.6	0.9	
4	Claypans Poll, 140783	43	-0.6	-4.0	1.0	4.2	0.1	-0.1	
5	Cranmore Poll, 140307	30	1.9	-6.4	-1.4	7.5	0.0	0.1	
6	Ejanding Poll, 145096	39	-1.5	4.8	1.1	-8.9	-0.1	-0.1	
7	Manunda Poll, 141341	36	-0.6	-5.9	2.1	1.6	-0.1	-0.4	
8	Nepowie Poll, 140050	46	-1.1	4.8	2.3	1.0	0.6	1.2	
9	Nerstane, 130467	37	0.5	-0.4	-0.5	6.8	-0.5	-1.0	
10	Woodyarrup, 120175	34	0.7	-1.8	-0.5	-0.4	-0.2	-0.3	
11	Woolkabin, 140533	44	1.8	-7.8	-1.5	-2.1	-0.7	-1.6	

^ 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).
<hr/>	
■ 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.
<hr/>	
■ 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).
<hr/>	
■ 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.

Breeder's flock, Sire name	Wool Quality - Hogget																							
	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
Barloo, 130121	-0.2	89	3	4	4	0	0.1	37	52	11	0	0	-0.2	33	44	23	0	0	0.0	0	74	26	0	0
Billandri Poll, 130087	0.3	59	19	12	6	4	-0.2	56	44	0	0	0	-0.1	31	38	31	0	0	-0.1	3	81	16	0	0
Challara, 140394	-0.1	74	21	5	0	0	-0.4	68	32	0	0	0	0.0	26	41	29	4	0	0.2	6	53	38	3	0
Claypans Poll, 140783	0.3	64	18	2	11	5	0.2	30	55	15	0	0	0.0	20	50	27	3	0	-0.1	0	84	16	0	0
Cranmore Poll, 140307	0.1	69	17	4	10	0	0.3	10	83	7	0	0	0.1	11	55	34	0	0	-0.2	7	79	14	0	0
Ejanding Poll, 145096	-0.1	79	15	3	3	0	0.2	26	59	15	0	0	0.1	7	67	26	0	0	0.2	2	62	31	5	0
Manunda Poll, 141341	0.2	69	11	8	6	6	0.3	31	50	14	5	0	-0.1	16	67	17	0	0	-0.2	6	83	11	0	0
Nepowie Poll, 140050	0.0	80	9	4	4	3	-0.1	57	30	11	2	0	-0.1	28	43	24	5	0	0.1	0	70	26	4	0
Nerstane, 130467	-0.3	92	8	0	0	0	-0.4	76	24	0	0	0	-0.1	24	47	29	0	0	0.0	0	79	21	0	0
Woodyarrup, 120175	-0.3	88	9	3	0	0	-0.2	59	32	9	0	0	0.1	12	53	32	3	0	0.2	3	53	44	0	0
Woolkabin, 140533	0.2	61	27	2	5	5	0.3	20	66	9	5	0	0.2	14	45	39	2	0	0.1	3	61	36	0	0
Average performance	1.4	74	16	4	4	2	1.7	44	46	10	0	0	2.1	20	50	28	2	0	2.2	2	73	23	2	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 - Hogget										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	
Barloo, 130121						-0.3	8	81	11	0	0	0.0	100	0	0	0	0	0.1	0	20	45	35	0	0	0	0	
Billandri Poll, 130087						0.0	9	47	44	0	0	0.0	97	3	0	0	0	0.2	3	9	47	41	0	0	0	0	
Challara, 140394						0.3	3	47	38	12	0	0.0	100	0	0	0	0	-0.1	0	35	35	30	0	0	0	2	
Claypans Poll, 140783						0.0	3	68	27	2	0	0.0	98	0	2	0	0	-0.1	4	22	45	29	0	0	0	2	
Cranmore Poll, 140307						-0.2	7	69	24	0	0	0.0	97	3	0	0	0	0.3	3	7	38	52	0	0	0	0	
Ejanding Poll, 145096						Staple Weathering not scored	0.0	0	67	31	2	0	0.0	100	0	0	0	0	0.2	0	14	38	48	0	0	0	0
Manunda Poll, 141341						-0.1	6	69	22	3	0	0.0	100	0	0	0	0	-0.3	7	26	49	18	0	0	0	0	
Nepowie Poll, 140050						0.2	5	54	26	15	0	0.0	100	0	0	0	0	-0.1	2	24	48	26	0	0	0	0	
Nerstane, 130467						-0.2	16	50	34	0	0	0.0	98	0	2	0	0	0.3	0	9	41	50	0	0	0	0	
Woodyarrup, 120175						0.2	3	44	47	6	0	0.0	100	0	0	0	0	-0.5	10	35	40	15	0	0	0	0	
Woolkabin, 140533						0.1	7	45	48	0	0	0.0	100	0	0	0	0	-0.4	8	40	28	24	0	0	0	0	
Average performance						2.3	5	59	32	4	0	1.0	99	1	0	0	0	3.1	3	21	40	36	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 - Hogget																													
	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
Barloo, 130121	0.0	96	4	0	0	0	0.0	56	33	11	0	0	0.0	15	62	15	8	0	0.3	0	41	52	7	0	0.0	7	85	8	0	0
Billandri Poll, 130087	0.0	100	0	0	0	0	0.0	50	47	3	0	0	0.2	6	63	26	0	5	0.0	3	56	41	0	0	-0.1	16	74	10	0	0
Challara, 140394	0.0	100	0	0	0	0	0.1	47	44	6	0	3	0.1	6	68	26	0	0	-0.2	9	65	26	0	0	0.1	16	63	16	5	0
Claypans Poll, 140783	0.0	100	0	0	0	0	0.0	48	45	7	0	0	0.0	17	59	17	7	0	0.3	2	32	59	7	0	0.0	21	62	14	3	0
Cranmore Poll, 140307	0.0	100	0	0	0	0	-0.1	55	41	4	0	0	0.3	7	62	12	19	0	0.1	0	59	38	3	0	0.3	0	69	31	0	0
Ejanding Poll, 145096	0.0	100	0	0	0	0	0.1	46	46	5	3	0	-0.2	20	68	8	4	0	-0.2	8	67	23	2	0	0.0	16	72	12	0	0
Manunda Poll, 141341	0.0	100	0	0	0	0	0.0	50	47	0	3	0	0.0	24	48	24	4	0	-0.3	9	72	19	0	0	-0.1	24	67	9	0	0
Nepowie Poll, 140050	0.0	100	0	0	0	0	-0.1	59	37	4	0	0	-0.1	21	66	6	7	0	-0.4	15	76	9	0	0	-0.2	31	62	7	0	0
Nerstane, 130467	0.1	97	0	0	3	0	0.1	39	58	3	0	0	0.2	4	67	25	4	0	0.4	0	32	63	5	0	0.5	12	33	46	9	0
Woodyarrup, 120175	0.0	100	0	0	0	0	0.2	32	59	6	3	0	0.0	16	63	16	5	0	0.1	0	53	44	3	0	0.0	10	79	11	0	0
Woolkabin, 140533	0.0	100	0	0	0	0	0.0	43	52	5	0	0	-0.1	20	57	23	0	0	0.0	0	66	32	2	0	0.0	20	63	13	4	0
Average performance	1.0	100	0	0	0	0	1.6	48	46	4	2	0	2.1	16	61	18	5	0	2.4	5	57	36	2	0	2.0	18	66	15	1	0

Table 4d. Visual trait assessments – Breech

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

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

Breeders flock, Sire name	Breech Visual Traits											
	Breech Cover						Breech Wrinkle					
	<i>Marking</i>						<i>Marking</i>					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5
Barloo, 130121	0.1	0	17	63	20	0	0.2	0	7	50	43	0
Billandri Poll, 130087	-0.1	0	26	59	15	0	0.1	0	9	50	41	0
Challara, 140394	-0.4	0	45	50	5	0	-0.1	5	18	45	30	2
Claypans Poll, 140783	0.2	0	23	42	33	2	0.2	0	12	39	41	8
Cranmore Poll, 140307	0.0	0	30	43	27	0	0.3	0	10	27	63	0
Ejanding Poll, 145096	-0.4	2	48	45	5	0	-0.1	0	17	60	21	2
Manunda Poll, 141341	0.1	2	24	42	32	0	-0.3	0	26	54	20	0
Nepowie Poll, 140050	-0.1	0	32	52	16	0	-0.5	4	30	52	14	0
Nerstane, 130467	0.3	2	14	36	48	0	0.5	0	4	32	48	16
Woodyarrup, 120175	0.1	0	24	44	32	0	-0.2	2	27	37	32	2
Woolkabin, 140533	0.3	0	16	46	38	0	0.0	0	20	44	34	2
Average performance	3.0	1	27	47	25	0	3.2	0	17	46	34	3

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. 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										
		GFW	CFW	FD	FDCV	SL	SS	WT			FAT	EMD
		kg H [^]	kg H	µm H	% H	mm H	N/ktex H	W	Y	H	mm Y	mm Y
Barloo, 130121	27	4.7	3.1	16.2	21.0	84.7	23.0	26.6	46.1	53.8	1.8	24.5
Billandri Poll, 130087	32	4.0	2.6	16.2	19.8	83.2	27.1	25.8	43.7	49.8	1.8	24.6
Challara, 140394	34	4.1	2.8	16.0	20.2	88.6	26.2	26.9	47.7	55.2	1.9	24.8
Claypans Poll, 140783	43	4.1	2.7	15.6	20.2	79.3	27.2	25.2	46.1	52.2	1.8	24.1
Cranmore Poll, 140307	30	4.3	2.7	16.4	22.3	77.6	26.3	26.1	44.9	53.1	1.8	24.2
Ejanding Poll, 145096	39	4.2	3.0	16.5	19.4	84.0	25.9	26.2	47.9	56.4	1.8	24.0
Manunda Poll, 141341	36	4.3	2.9	15.8	20.1	77.0	28.3	26.1	48.2	55.6	1.8	23.9
Nepowie Poll, 140050	46	4.2	2.8	16.0	20.0	85.4	28.5	25.7	48.2	56.7	1.9	24.9
Nerstane, 130467	37	4.3	2.8	15.5	21.0	82.7	26.7	25.1	44.4	52.5	1.7	23.6
Woodyarrup, 120175	34	4.3	2.9	16.0	21.1	80.4	26.6	25.0	46.3	54.4	1.8	24.0
Woolkabin, 140533	44	4.2	2.7	16.2	22.1	75.8	26.4	25.7	48.1	56.8	1.7	23.0
Progeny group average	25	4.2	2.8	16.0	20.7	81.9	26.5	26.0	46.5	54.3	1.8	24.2
		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)

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:

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

Example

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

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

Muresk

2016 Drop
Hogget Assessment

