North East Victoria (Dookie)

Central Test Sire Evaluation

2012 Drop First & Second Assessment

Post Weaning Assessment reporting Research Breeding Values

Adult Assessment reporting Flock Breeding Values

Conducted by

North East Victoria Stud Merino Breeders Inc.

under the auspices of

The Australian Merino Sire Evaluation Association

July 2014

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

Estimated Breeding Values reported here are based on analyses conducted by Sheep Genetics.

Contents

Foreword

North East Victoria (Dookie College) ~ Central Test Sire Evaluation

The North East Victoria (Dookie College) 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 is listed in the table below.

The North East Victoria Sire Evaluation started in 1997. The 2012 drop progeny are the 16th evaluation since 1997, all of which have been conducted at Dookie College. The Dookie College ewes are of Toland blood and only ewes which have lambed previously are included in the AI program. 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
Phil Toland …….	03 57981 606	Chairperson
Frank O'Connor	03 58339 200	Site Manager
Murray McKenzie	03 5766 6278	
Paul Wallace	0409 214 793	Data Manager

For further information regarding this report please contact

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A Note on Post Weaning Fleece Traits

The post weaning (P) fleece traits reported in this sire evaluation report have been taken at the Post Weaning stage (210 - 300 days). At this point in time Sheep Genetics does not provide industry approved breeding values for fleece traits measured at the Post Weaning Stage.

The breeding values reported in this sire evaluation report for fleece traits measured at the Post Weaning Stage are **Research Breeding Values (RBVs)** and are denoted as this throughout the report.

Caution should be used when using RBVs when making selection and breeding decisions.

AWI is currently supporting a project that will see the development of Post Weaning Fleece Trait Breeding Values. It is hoped that in the future, approved breeding values will be available for these traits.

Sire and Owner Details

Breeders flock, Sire name Sire ID [#], Breed [†]	Owner Details
Bogo, 092042 504792-2009-092042, Merino	**Malcolm Peake** Bogo, Burrinjuck Road, Bookham NSW 2582 P: (02) 6227 7152, F: (02) 6227 7153, E: info@bogomerinos.com.au
Connewarran, 8016 (Link) 504704-2008-008016, Merino	**Richard Weatherly** Connewarran, PO Box 21, Mortlake VIC 3272 P: (03) 5599 7276, F: (03) 5599 7227, E: connewarran@westvic.com.au
Ewe Wish Poll, 099053 601443-2009-099053, Poll Merino	**Matthew Ipsen** 912 Maryborough - St Arnaud Rd, Wareek VIC 3465 P: (03) 5461 2016, F: (03) 5461 2063, E: ewewish@bigpond.com
Kilfeera Park, 110183 503425-2011-110183, Merino	**Murray & Fiona McKenzie** 131 Brock Rd, Lurg VIC 3673 P: (03) 5766 6278, F: (03) 5766 6248, E: kilpark@people.net.au
Nareeb Nareeb, 080379 500246-2008-120379, Merino	**Richard Beggs** 4395 Hamilton Chatsworth Rd, Nareeb VIC 3293 P: (03) 5577 8222, F: (03) 5577 8362, E: office@nareebnareeb.com.au
North Ashrose Poll, 090395 601226-2009-090395, Poll Merino	**Tom Ashby** PO Box 17, Gulnare SA 5471 P: (08) 8845 2155, F: (08) 8845 2107, E: ashby@activ8.net.au
Stockman Poll, 070886 601050-2007-070886, Poll Merino	**Kip Gray** Melton Vale, 85 Lake Highway, Melton Mowbray TAS 7030 P: (03) 6259 1162, F: (03) 6259 3061, E: kgray@stockmanstud.com.au
Toland Poll, 111083 601082-2011-111083, Poll Merino	**Phil Toland** 1888 Feltrim Rd, Violet Town VIC 3669 P: (03) 5798 1247, F: (03) 5798 1404, E: tolandmerino@bigpond.com
Toland Poll, Blue 1046 (Link) 601082-2007-071046, Poll Merino	**Phil Toland** 1888 Feltrim Rd, Violet Town VIC 3669 P: (03) 5798 1247, F: (03) 5798 1404, E: tolandmerino@bigpond.com
Well Gully Poll, 1864 (Link) 601106-2009-091864, Poll Merino	**Errol and Candy Brumpton** Well Gully, Mitchell QLD 4465 P: (07) 4623 1170, F: (07) 4623 6670, E: wellgullymerinos@bigpond.com
Woodpark Poll, 100015 (Link) 601151-2010-100015, Poll Merino	**Stephen and Carol Huggins** Eurolie, Hay NSW 2711 P: (02) 6993 4616, F: (02) 6993 4122, E: info@woodparkmerino.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

For further information regarding this report please contact:

Phil Toland: P: (03) 5798 1247, E: tolandmerino@bigpond.com

Manager's Report

1. **Location**
   - The Dookie College site is run on The University of Melbourne Dookie Campus Farm, located 30 kilometers east of Shepparton, off the Midland Highway.
   - The Dookie College farm is 2200 hectares of undulating country with sheep and cropping the two main broadacre enterprises.
   - The sheep enterprise is predominantly a self-replacing merino flock of 3000 merino ewes joined to both merino and terminal sires.
   - Pastures range from phalaris/sub clover based to annual grasses/sub clover, with some Lucerne also available.
   - Soil types vary from river sands to heavy clays, the most predominant soil type being clay/loams, suitable for cropping.

2. **Selection and joining**
   - 528 ewes inseminated on the 16th March, 2012.
   - Ewes were selected to provide a uniform line with good conformation, even wool quality and productivity. Ewes were allocated randomly ensuring that an even balance of age groups are allocated to each sire,
   - Ewes condition score 3.0 at the time of selection and insemination,
   - Livestock Breeding Services conducted the insemination,
   - 49 ewes were allocated to each sire

3. **Pregnancy and lambing**
   - Ewes were managed to maintain condition
   - Lambing 9th August to 13th August, 2012
   - Lambs tagged 31st August, 2012 and run in one mob

4. **Weaning and seasonal conditions**
   - Lambs marked 20th September, 2011.
   - Lambs weaned onto Lucerne pasture.
   - The lambs were weaned on the 17th December, 2012 at an average weight of 22.2 kg.

5. **Rainfall**

Dookie Rainfall

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total mm
2007	11.8	16.2	37.6	25.2	80.6	33.2	78.6	14.4	9.0	18.8	72.6	85.0	**483.0**
2008	69.2	10.6	43.8	11.2	36.2	19.0	71.2	42.8	8.6	12.2	85.8	42.8	**453.4**
2009	9.0	2.8	41.8	36.6	16.0	64.6	35.4	26.6	39.4	21.4	58.2	10.6	**362.4**
2010	39.6	99.6	76.4	37.1	65.4	42.8	45.4	86.6	60.4	115.8	54.2	112.2	**835.5**
2011	96.2	154.5	53.8	36.0	34.0	25.6	49.2	74.0	38.8	23.6	63.8	31.0	**680.5**
2012	51.0	107.2	182.8	19.2	19.6	28.8	62.4	46.3	7.0	38.4	17.2	25.8	**605.7**
2013	3.6	57.2	20.4	7.2	41.0	65.6	64.2	58.2	46.2	15.6	16.8	50.6	**446.6**
2014	21.4	31.0	25.6	100.0	75.4	67.4							

Source: Bureau of Meterology

Assessment and Management Program

The information in this site evaluation report provides a comprehensive assessment of the 2012 drop, both the first (Post Weaning) and second (Adult) assessment of the sire's progeny performance, both measured and visually assessed traits.

The post weaning fleece and visual assessment was made at 8 months of age with 8 months of wool growth. The adult fleece and visual assessment was made at 21 months of age with 13 months of wool growth.

Other measurements were taken as outlined below.

Activity		Date/s	Age	Wool
Lambing: start – finish		9 – 13 August 2012		
Marking and breech scoring		31 August 2012	20 days	
Weaning		17 December 2012	4 months	
Mid side fleece sampling	P	5 April 2013	8 months	8 months
	A	13 May 2014	21 months	13 months
Visual trait scoring	P	5 April 2013	8 months	8 months
	A	13 May 2014	21 months	13 months
Shearing	P	8 April 2013	8 months	8 months
	A	18 May 2014	21 months	13 months
Body weighing	W	17 December 2012	4 months	4 months
	P	8 April 2013	8 months	Off shears
	A	18 May 2014	21 months	Off shears

Visual trait assessment and site Breeding Objective

Visual trait assessment

1st and 2nd Assessment
Classer's Grade: Ian Feldtmann
Trait Scores: Ian Feldtmann (all other traits)

Site Breeding Objective used to assess the Classer's Grades

The Breeding Objective used by the classer when selecting the Classers Top, Flock and Cull Grades is described below. The Breeding Objective below were developed by the site committee in consultation with the classer prior to the grading.

The North East Sire Evaluation Committee asked Ian to base his selection using an 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.

Combined measured traits and visual trait performance

Summary graph: visual and measured performance

Each sire that meets reporting thresholds for index accuracies is located on the graph. The graph describes performance for combined measured traits and combined visual assessment.

A different graph is provided for each of the three standard indexes reported. In each graph, visual trait performance is a combination of Classer's Grade performance (Tops and Culls). More information is found in "Understanding the Results".

Sires that are above average performers for combined measured traits and Classer's Grade are located in the top right hand quarter of the graph.

Sire code	Breeders flock, Sire number	Sheep Genetics ID	Sire of Sire
1	Bogo, 092042	504792-2009-092042	504792-2007-070853
2	Connewarran, 8016	504704-2008-008016	503892-2004-040400 (Bindawarra, 400)
3	Ewe Wish Poll, 099053	601443-2009-099053	Unknown
4	Kilfeera Park, 110183	503425-2011-110183	503425-2008-080304 (Kilfeera Park, 8.304)
5	Nareeb Nareeb, 080379	500246-2008-120379	503298-2005-054636 (Nerstane, N4636)
6	North Ashrose Poll, 090395	601226-2009-090395	Unknown
7	Stockman Poll, 070886	601050-2007-070886	601050-2003-030307
8	Toland Poll, 111083	601082-2011-111083	601082-2007-071141
9	Toland Poll, Blue 1046	601082-2007-071046	504485-2001-010611 (Toland, W611)
10	Well Gully Poll, 1864	601106-2009-091864	Unknown
11	Woodpark Poll, 100015	601151-2010-100015	600553-2007-070002 (Coromandel Poll, ET2)

Figure 1a, 1b and 1c. **Combined measured traits and visual trait performance**

Figure 1a. Combined measured traits based on an AMSEA <u>Dual Purpose Plus</u> (DP+) index. Based on a meat focused production system where surplus progeny are sold as lambs and a portion of ewes are joined to terminal sires.

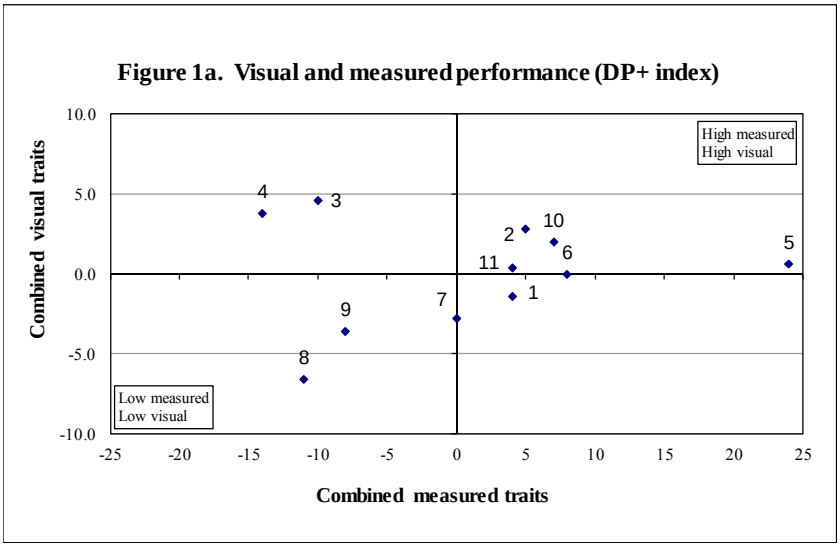


Figure 1b. Combined measured traits based on an AMSEA <u>Merino Production Plus</u> (MP+) index. Based on a balanced wool and meat production system where surplus progeny are sold as hoggets.

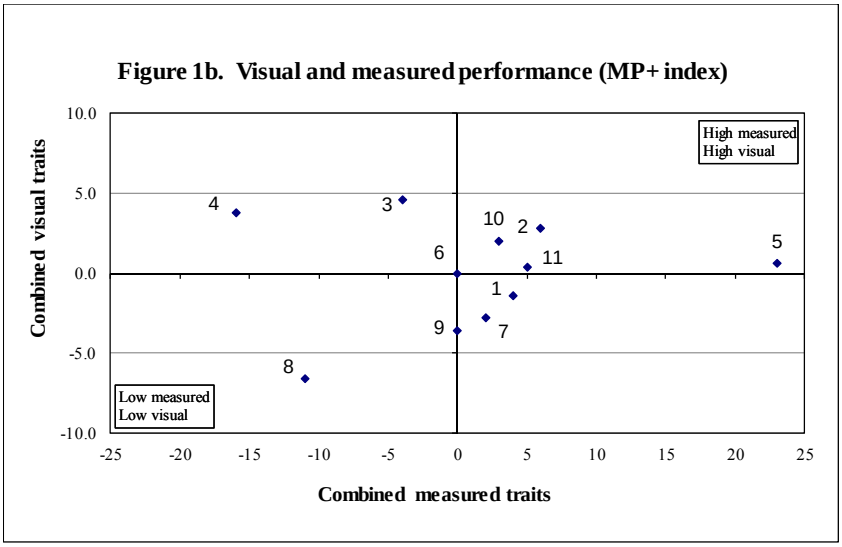


Figure 1c. Combined measured traits based on an AMSEA <u>Fibre Production Plus</u> (FP+) index. Based on a wool focussed production system where wethers are retained, operating in an environment where worms cause economic losses.

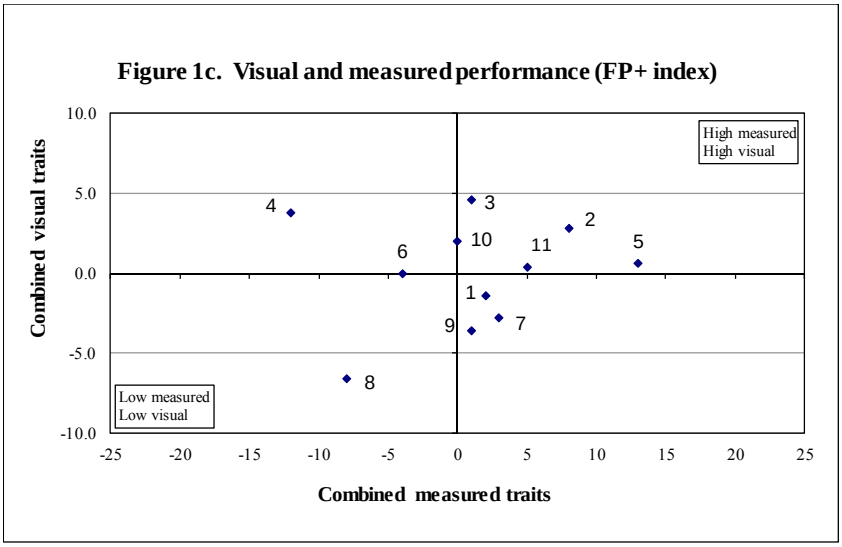


Table 1. **AMSEA Index Values and Classer's Grade**

The highest performing 2 sires (or more if there is a dead heat) for each trait (trait leaders) are highlighted by shading.

Each sire is listed for Classer's Grade and the same three indexes at all site evaluations. An additional index considered relevant to the site evaluation is also reported.

The index values reported are based on measured traits FBV performance with varying the emphasis on fleece weight, fibre diameter, body weight, staple strength and worm egg count. See 'Index Options' (page 19) for more information on the indexes presented in the table below.

AMSEA Indexes are the same as MERINOSELECT Indexes apart from NLW (Number of Lambs Weaned) being given a zero FBV value in AMSEA calculations.

- **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.
- **Merino Production Plus (MP+):** Based on a balanced wool and meat production system where surplus progeny are sold as hoggets.
- **Fibre Production Plus (FP+):** Based on a wool focussed production system where wethers are retained, operating in an environment where worms cause economic losses.
- **Merino 7% (M7%):** High emphasis on fleece weight and fibre diameter plus small emphasis on live weight.

Sire Code	Breeders flock, Sire name	Number of progeny	AMSEA Index Values				Classer's Grade			
			Dual Purpose Plus	Merino Production Plus	Fibre Production Plus	Merino 7%	Tops %		Culls %	
							P^	A	P	A
1	Bogo, 092042	30	104	104	102	105	-7	-5	-1	2
2	Connewarran, 8016	41	105	106	108	107	8	14	1	0
3	Ewe Wish Poll, 099053	23	90	96	101	96	-6	25	0	2
4	Kilfeera Park, 110183	30	86	84	88	83	10	11	4	-8
5	Nareeb Nareeb, 080379	21	124	123	113	120	11	-1	-15	-4
6	North Ashrose Poll, 090395	28	108	100	96	101	-17	3	4	3
7	Stockman Poll, 070886	34	100	102	103	101	-3	-14	-1	0
8	Toland Poll, 111083	37	89	89	92	89	9	-29	-4	4
9	Toland Poll, Blue 1046	24	92	100	101	101	19	-10	-4	8
10	Well Gully Poll, 1864	30	107	103	100	102	-12	5	0	-5
11	Woodpark Poll, 100015	30	104	105	105	108	-12	0	15	-2
	Average performance	**30**	**100**	**100**	**100**	**100**	**46**	**51**	**15**	**15**

^ 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)

Figure 2. Fleece weight by fibre diameter

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.

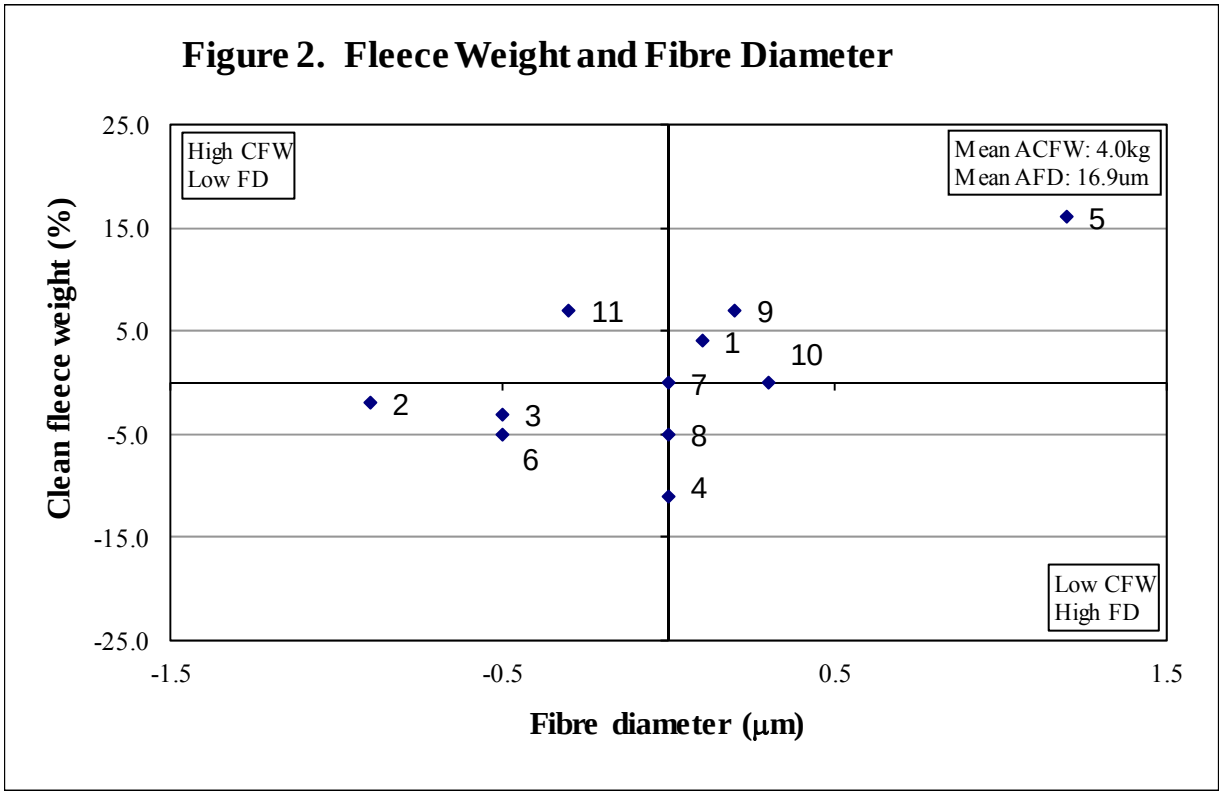
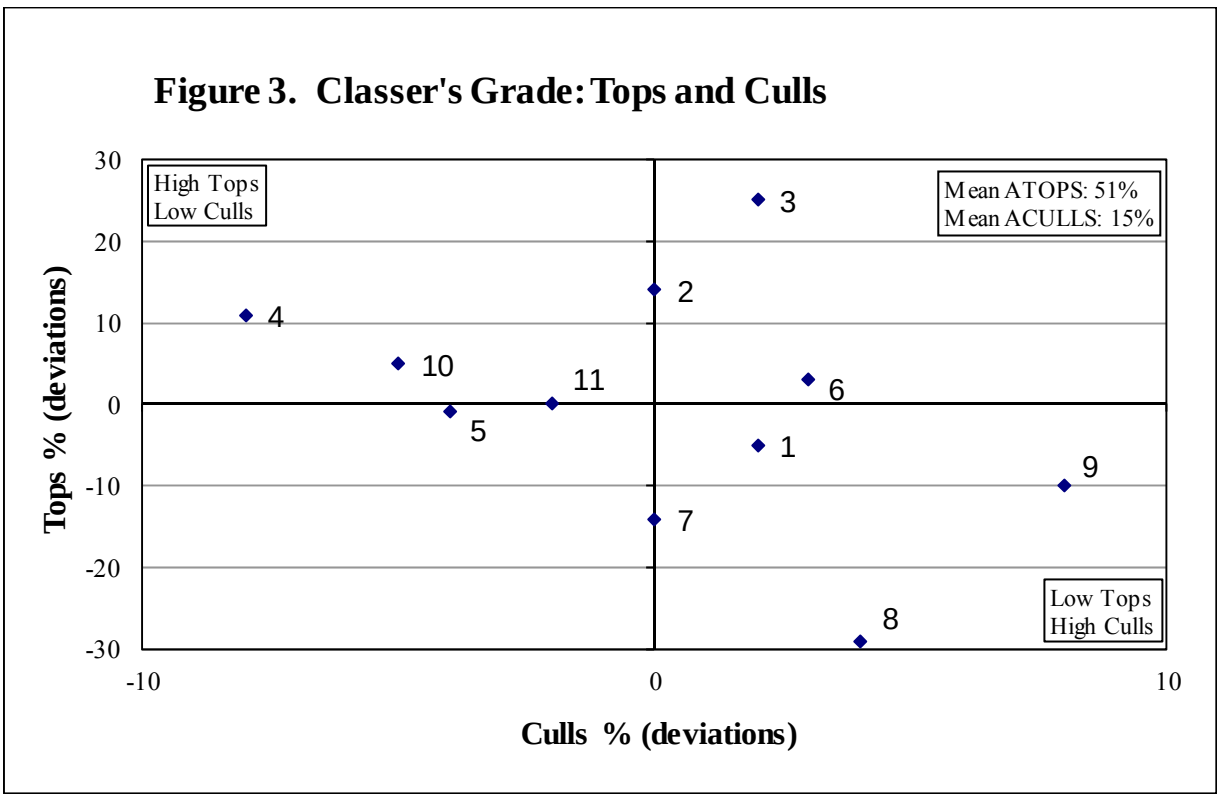


Figure 3. Classer's Tops by Cull Grade

The graph describes performance for Classer's 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.



Understanding the results

Measured trait performance and Classer's Grade – Table 2 and 3

Sire Code:	The sire's code used throughout the report. Each sire's owner has been provided with their sire's code.
Number of progeny:	The number of progeny a sire had at the most recent measured analysis.
Flock Breeding Values:	Flock Breeding Values (FBVs) are Estimated Breeding Values (EBVs) calculated by Sheep Genetics for the sire's 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.
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 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 (see page 5). The percentage deviation from the average of Tops and Culls is presented in this report.

Table 2. **Major measured traits and Classer's Grades**

Sire Code	Breeders flock, Sire name	Number of progeny	Flock Breeding Values (deviations)									Classer's Grade[1]			
			GFW %		CFW %		FD µm		WT kg			Tops %		Culls %	
			P[R^]	A	P[R]	A	P[R]	A	W	P	A	P	A	P	A
1	Bogo, 092042	30	6	4	6	4	0.0	0.1	0.2	0.2	0.8	-7	-5	-1	2
2	Connewarran, 8016	41	-8	-2	-7	-2	-1.0	-0.9	0.1	0.4	0.2	8	14	1	0
3	Ewe Wish Poll, 099053	23	-11	-4	-6	-3	0.1	-0.5	-1.3	-2.0	-3.5	-6	25	0	2
4	Kilfeera Park, 110183	30	-14	-11	-13	-11	0.1	0.0	-0.5	-0.9	-0.6	10	11	4	-8
5	Nareeb Nareeb, 080379	21	17	15	16	16	0.6	1.2	1.3	2.3	3.9	11	-1	-15	-4
6	North Ashrose Poll, 090395	28	3	-4	-2	-5	0.3	-0.5	2.2	3.3	3.1	-17	3	4	3
7	Stockman Poll, 070886	34	4	1	-4	0	-0.3	0.0	-0.4	-0.6	-0.3	-3	-14	-1	0
8	Toland Poll, 111083	37	-3	-5	0	-5	0.5	0.0	-0.4	-1.1	-1.2	9	-29	-4	4
9	Toland Poll, Blue 1046	24	7	6	11	7	-0.1	0.2	-1.8	-2.5	-4.2	19	-10	-4	8
10	Well Gully Poll, 1864	30	3	-1	2	0	0.3	0.3	1.6	2.1	2.3	-12	5	0	-5
11	Woodpark Poll, 100015	30	-3	7	-2	7	-0.6	-0.3	-0.6	-0.8	-0.2	-12	0	15	-2
	Average performance	**30**	**1.6**	**5.7**	**1.1**	**4.0**	**14.9**	**16.9**	**22.2**	**23.0**	**43.2**	**46**	**51**	**15**	**15**
			kg		kg		µm			**kg**		%		%	

^ 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 Grade is expressed as the percentage deviation of average Tops% and Culls%.

R Post Weaning Research Breeding Value (RBV)

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[R^]	A	P[R]	A	P[R]	A	P[R]	A				
1	Bogo, 092042	30	1.4	0.2					-5.8	-3.8				
2	Connewarran, 8016	41	-0.5	0.0					8.4	4.4				
3	Ewe Wish Poll, 099053	23	0.3	-0.2					-6.3	-1.1				
4	Kilfeera Park, 110183	30	-0.8	-0.4	**SL and SS**				-0.8	2.0	**FAT and EMD**		**WEC**	
5	Nareeb Nareeb, 080379	21	-1.8	-0.8	**were not**				-1.2	-3.1	**were not**		**was not**	
6	North Ashrose Poll, 090395	28	1.4	0.9	**measured**				7.2	6.2	**measured**		**measured**	
7	Stockman Poll, 070886	34	0.3	-0.5					11.4	2.7			**do to**	
8	Toland Poll, 111083	37	-0.9	0.1					-2.1	1.6			**seasonal**	
9	Toland Poll, Blue 1046	24	-0.2	0.4					-7.3	-6.2			**conditions**	
10	Well Gully Poll, 1864	30	0.0	-0.5					-4.1	-5.0				
11	Woodpark Poll, 100015	30	0.7	1.2					0.6	-1.0				
	Average performance	**30**	**23.1** %	**20.3**					**78.7** deg/mm	**75.0**				

^ 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).

R Post Weaning Research Breeding Value (RBV)

Understanding the results

Scored 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)
■ 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).
■ 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.
■ 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.

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																							
	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
Bogo, 092042	0.0	100	0	0	0	0	0.3	32	55	13	0	0	0.2	19	52	29	0	0	0.2	0	42	55	3	0
Connewarran, 8016	0.0	100	0	0	0	0	-0.2	69	31	0	0	0	-0.3	43	55	2	0	0	-0.2	0	81	19	0	0
Ewe Wish Poll, 099053	0.0	100	0	0	0	0	-0.3	74	26	0	0	0	-0.2	57	17	26	0	0	-0.1	0	74	26	0	0
Kilfeera Park, 110183	0.0	100	0	0	0	0	0.0	53	41	3	3	0	-0.4	53	44	3	0	0	-0.2	0	88	12	0	0
Nareeb Nareeb, 080379	0.1	90	10	0	0	0	0.0	48	48	4	0	0	0.2	33	29	38	0	0	-0.1	5	62	33	0	0
North Ashrose Poll, 090395	0.0	100	0	0	0	0	0.3	25	68	7	0	0	-0.2	39	54	7	0	0	-0.1	0	75	25	0	0
Stockman Poll, 070886	0.0	97	3	0	0	0	-0.1	65	29	3	3	0	0.4	12	53	29	6	0	0.1	0	53	47	0	0
Toland Poll, 111083	0.1	95	2	3	0	0	-0.2	70	27	3	0	0	0.5	8	51	35	6	0	0.2	0	46	54	0	0
Toland Poll, Blue 1046	0.1	96	0	0	4	0	0.1	56	32	8	4	0	0.1	36	36	24	4	0	0.2	0	52	40	8	0
Well Gully Poll, 1864	0.0	100	0	0	0	0	0.1	42	52	6	0	0	0.0	26	65	9	0	0	0.0	4	58	35	3	0
Woodpark Poll, 100015	0.0	100	0	0	0	0	0.0	50	43	7	0	0	-0.5	63	33	4	0	0	0.0	0	63	33	4	0
Average performance	**1.0**	**98**	**2**	**0**	**0**	**0**	**1.5**	**53**	**41**	**5**	**1**	**0**	**1.9**	**35**	**44**	**19**	**2**	**0**	**2.4**	**0**	**63**	**35**	**2**	**0**

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

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.

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.

Four pigmentation traits are reported. These are Fibre pigmentation, Non-fibre pigmentation, Recessive "Black" and Random "Spot".

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 scored 5 are reported for Recessive black and Random spot.

Breeders flock, Sire name	Wool Quality												Pigmentation											
	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**
Bogo, 092042	0.1	4	61	35	0	0	0.3	29	45	23	3	0	0.0	100	0	0	0	0	0.0	94	6	0	0	0	0	0
Connewarran, 8016	-0.1	0	88	12	0	0	-0.3	64	33	3	0	0	0.0	100	0	0	0	0	0.0	98	2	0	0	0	0	0
Ewe Wish Poll, 099053	0.0	0	87	13	0	0	-0.2	57	35	8	0	0	0.0	100	0	0	0	0	0.1	96	0	0	0	4	0	0
Kilfeera Park, 110183	-0.1	0	97	3	0	0	-0.5	75	25	0	0	0	0.0	100	0	0	0	0	0.0	100	0	0	0	0	0	0
Nareeb Nareeb, 080379	0.1	0	76	24	0	0	0.3	29	48	19	4	0	0.0	100	0	0	0	0	0.0	100	0	0	0	0	0	0
North Ashrose Poll, 090395	-0.1	0	89	11	0	0	-0.3	64	32	4	0	0	0.0	100	0	0	0	0	0.0	100	0	0	0	0	0	3
Stockman Poll, 070886	0.1	0	76	24	0	0	0.3	26	50	21	3	0	0.0	100	0	0	0	0	0.2	90	3	5	2	0	0	0
Toland Poll, 111083	0.1	0	73	27	0	0	0.5	16	51	27	6	0	0.0	100	0	0	0	0	0.0	100	0	0	0	0	0	0
Toland Poll, Blue 1046	0.1	0	76	20	4	0	0.4	36	32	24	4	4	0.0	100	0	0	0	0	0.0	100	0	0	0	0	0	0
Well Gully Poll, 1864	-0.1	3	84	13	0	0	0.0	39	52	9	0	0	0.0	100	0	0	0	0	0.0	98	2	0	0	0	0	0
Woodpark Poll, 100015	-0.1	0	90	10	0	0	-0.4	70	30	0	0	0	0.0	100	0	0	0	0	0.0	100	0	0	0	0	0	3
Average performance	**2.2**	1	82	17	0	0	**1.7**	46	39	13	2	0	**1.0**	100	0	0	0	0	**1.0**	98	2	0	0	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.

For the majority of breeder's objectives a negative deviation would be considered favourable and the larger the deviation the better. Face cover and body wrinkle are possible exceptions 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																											
	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
Bogo, 092042	0.0	100	0	0	0	0	-0.2	94	3	3	0	0	0.0	97	0	3	0	0	0.0	3	68	26	3	0	0.0	0	23	74	3	0
Connewarran, 8016	0.0	100	0	0	0	0	0.0	79	14	7	0	0	0.1	90	3	5	2	0	-0.1	14	64	17	3	2	0.3	0	12	67	21	0
Ewe Wish Poll, 099053	0.0	96	4	0	0	0	0.1	74	9	17	0	0	-0.1	100	0	0	0	0	-0.2	4	87	9	0	0	-0.4	4	57	35	4	0
Kilfeera Park, 110183	0.0	100	0	0	0	0	-0.1	84	12	4	0	0	-0.1	97	3	0	0	0	-0.4	25	66	9	0	0	0.0	0	41	44	12	3
Nareeb Nareeb, 080379	0.0	100	0	0	0	0	-0.1	81	19	0	0	0	-0.1	100	0	0	0	0	0.0	10	62	24	4	0	0.2	0	15	71	14	0
North Ashrose Poll, 090395	0.0	100	0	0	0	0	0.2	75	11	11	0	3	0.0	93	0	7	0	0	0.1	7	57	25	11	0	-0.2	3	39	54	4	0
Stockman Poll, 070886	0.0	100	0	0	0	0	0.0	76	15	9	0	0	-0.1	97	3	0	0	0	-0.3	21	62	17	0	0	0.1	0	26	59	15	0
Toland Poll, 111083	0.0	100	0	0	0	0	0.2	68	19	13	0	0	0.0	92	2	6	0	0	0.5	2	41	35	22	0	-0.1	3	33	61	3	0
Toland Poll, Blue 1046	0.0	100	0	0	0	0	0.1	72	20	8	0	0	0.1	88	0	12	0	0	0.2	4	64	20	8	4	0.1	0	20	72	8	0
Well Gully Poll, 1864	0.0	100	0	0	0	0	-0.1	90	4	6	0	0	0.0	94	6	0	0	0	-0.1	9	68	23	0	0	-0.4	3	58	39	0	0
Woodpark Poll, 100015	0.1	87	10	3	0	0	0.1	70	20	10	0	0	0.1	80	17	3	0	0	0.3	2	57	27	7	7	0.2	0	20	60	20	0
Average performance	**1.0**	**98**	**2**	**0**	**0**	**0**	**1.3**	**78**	**13**	**9**	**0**	**0**	**1.1**	**93**	**4**	**3**	**0**	**0**	**2.3**	**9**	**63**	**21**	**5**	**2**	**2.8**	**1**	**31**	**58**	**10**	**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.

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*						Crutch Cover						Breech Wrinkle *Marking*						Dag						Urine					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5
Bogo, 092042	0.1	0	18	44	38	0							-0.2	0	32	65	3	0												
Connewarran, 8016	0.0	0	15	57	28	0							0.2	0	15	66	19	0												
Ewe Wish Poll, 099053	-0.1	0	32	40	28	0							-0.3	4	40	48	8	0												
Kilfeera Park, 110183	0.2	0	3	64	33	0							0.3	0	17	56	19	8												
Nareeb Nareeb, 080379	-0.1	0	15	71	14	0	**Crutch Cover**						0.1	0	18	71	7	4	**Dag**						**Urine**					
North Ashrose Poll, 090395	-0.2	0	29	50	21	0	**was not scored**						-0.2	0	47	41	12	0	**was not scored**						**was not scored**					
Stockman Poll, 070886	0.1	0	8	63	29	0							0.2	0	17	56	27	0												
Toland Poll, 111083	0.0	0	19	52	29	0							0.0	0	24	64	12	0												
Toland Poll, Blue 1046	0.1	0	9	58	33	0							-0.1	0	24	73	3	0												
Well Gully Poll, 1864	-0.2	0	30	52	18	0							-0.2	2	38	52	8	0												
Woodpark Poll, 100015	0.1	0	13	58	29	0							0.1	0	16	68	16	0												
Average performance	**3.1**	**0**	**17**	**56**	**27**	**0**							**2.9**	**1**	**26**	**60**	**12**	**1**												

Table 5. **Sire averages for measured traits**

Sire averages are the average performance of all the progeny of a sire. No account is made for factors that can improve the breeding value accuracy.

Breeders flock, Sire name	Number of progeny	Sire averages for measured traits (deviations from the site average)														
		GFW kg		CFW kg		FD µm		WT kg			FDCV %		Curv deg/mm		SL mm	SS N/ktex
		P^	A	P	A	P	A	W	P	A	P	A	P	A		
Bogo, 092042	30	3.8	0.1	3.9	0.1	0.0	0.1	0.3	-0.1	0.9	1.0	0.1	-3.8	-2.7		
Connewarran, 8016	41	-6.1	-0.1	-5.9	0.0	-0.6	-0.6	0.0	0.3	-0.4	-0.3	0.0	4.9	3.5		
Ewe Wish Poll, 099053	23	-7.7	-0.3	-4.1	0.0	0.1	-0.3	-0.9	-1.1	-3.0	0.1	-0.2	-4.6	-0.8		
Kilfeera Park, 110183	30	-9.4	-0.5	-8.9	-0.4	0.0	0.1	-0.6	-0.7	0.1	-0.4	-0.2	-0.6	0.8		
Nareeb Nareeb, 080379	21	14.8	0.7	14.3	0.5	0.4	0.7	0.8	1.4	2.6	-1.2	-0.8	-1.3	-1.1	**SL and SS**	
North Ashrose Poll, 090395	28	2.9	-0.2	0.0	-0.2	0.2	-0.3	1.6	2.0	1.8	0.9	0.8	4.0	5.0	**were not**	
Stockman Poll, 070886	34	-1.3	0.1	-6.1	0.0	-0.2	0.0	-0.4	-0.4	-0.8	0.1	-0.4	7.0	2.3	**measured**	
Toland Poll, 111083	37	-2.0	-0.3	0.5	-0.2	0.3	0.1	0.0	-0.9	-1.0	-0.5	0.2	-1.5	1.2		
Toland Poll, Blue 1046	24	9.4	0.1	12.1	0.2	0.1	0.2	-1.3	-1.2	-3.4	-0.1	0.2	-5.6	-3.8		
Well Gully Poll, 1864	30	1.8	-0.1	1.3	-0.1	0.2	0.2	1.2	1.0	1.8	-0.1	-0.4	-2.8	-4.3		
Woodpark Poll, 100015	30	-0.2	0.3	0.3	0.2	-0.3	-0.2	-0.5	-0.5	1.3	0.5	0.8	-0.2	-0.1		
Average performance	**30**	**1.6** kg	**5.7**	**1.1** kg	**4.0**	**14.9** µm	**16.9**	**22.2**	**23.0** kg	**43.2**	**23.1** %	**20.3**	**78.7** deg/mm	**75.0**		

^ 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

Index Options

Breeding Objective index options provide the relative value of sires based on a combination of the measured traits' genetic performance. The indexes used in this report are only some of the many indexes that can be used to describe an individual breeder's objective for measured traits.

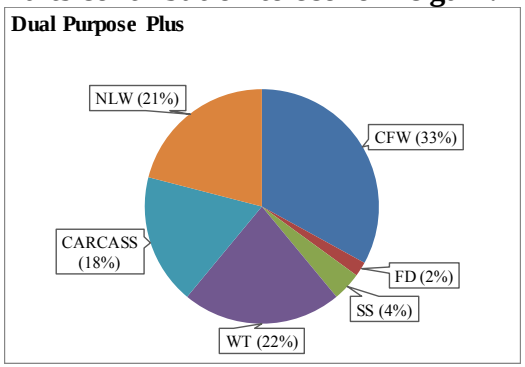
If a breeder is considering using a sire in this report it is critical to consider the performance of the breeder's flock relative to the performance standard in this report. The relative performance must be considered to establish the result that can be expected when a sire is used in a breeder's flock.

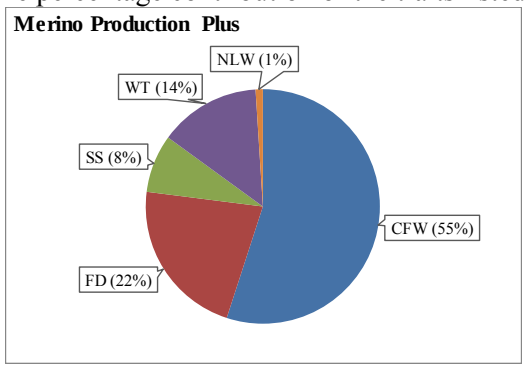
All AMSEA site evaluation reports present 3 standard indexes to provide combined **measured** trait performance These 3 AMSEA indexes are DP+; MP+; and FP+. These indexes are the same as MERINOSELECT indexes of that name however as there is no direct reproduction records captured by sire evaluation AMSEA do not include a Reproduction (NLW) FBV in their index calculations. As a result the 21% contribution by NLW in the DP+ index is not effectively applied by the index calculation.

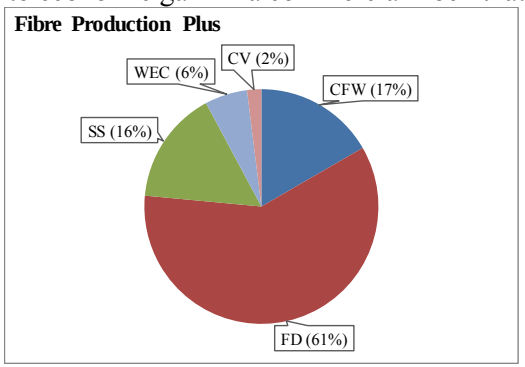
This report has added an additional index – the AMSEA **Merino 7%**.

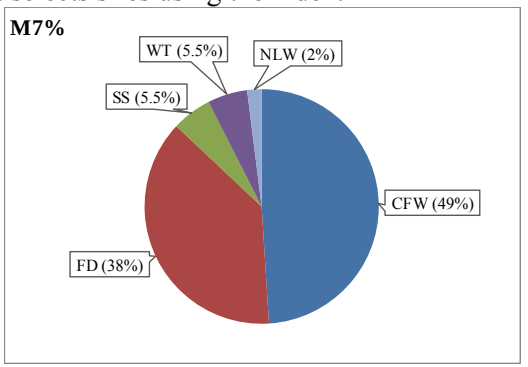
AMSEA **DP+**	**Dual Purpose Plus:** Based on a meat focused production system where surplus progeny are sold as lambs and a portion of ewes are joined to terminal sires. Large increase in body weight and carcass traits. Moderate increase in fleece weight. Maintain fibre diameter and staple strength. Moderate increase in reproduction.
AMSEA **MP+**	**Merino Production Plus:** Based on a balanced wool and meat production system where surplus progeny are sold as hoggets. Large increase in fleece weight. Small increase in staple strength, carcass traits and reproduction. Moderate reduction in fibre diameter.
AMSEA **FP+**	**Fibre Production Plus:** Based on a wool focussed 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 carcass traits and reproduction.
AMSEA **Merino 7%** (M7%)	High emphasis on fleece weight and fibre diameter plus small emphasis on live weight.

Traits contribution to economic gain: The percentage contribution of the traits listed to economic gain in a commercial flock that selects sires using the index.









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.