MerinoLink

Merino Sire Evaluation

Site Report

Within-Site Results
November 2023

2022 Drop
Yearling Assessment

Conducted by

Under the auspices of

With support from

Foreword

MerinoLink Merino Sire Evaluation

"Willow Glen" is owned by the Ross Family and is the second Sire Evaluation Trial Site to be held in the Central Tablelands. They are the hosts of the 2022 Drop, and this is the first time that they have hosted a Sire Evaluation Trial.

This trial has been supported by a large number of volunteers who generously give up their time to contribute to these trials. Without them it would not run as smoothly as it does.

Rich Keniry
Chairman
MerinoLink

Site Committee

Name	Email	Phone
Laura Broughton	laura@productivelivestock.com.au	0487 181 896
Rich Keniry	richkeniry@kildara.com.au	0427 878 541
Graeme Ross	gwross2@gmail.com	0411 285 610
Stuart Kelly	kellysmgc@bigpond.com	0428 681 058
Andrew Kelly	andrew.kpc@outlook.com	0429 681 058
Matthew Coddington	rpmerinos@bigpond.com	0428 635 386
Emma Grabham	emmagrabham2795@gmail.com	0409 288 554
Simon Ross	swross2002@yahoo.com.au	0413 627 260
Matt Crozier	matt@cavanstation.com.au	0427 486 805

For further information on this report please contact:

Rich Keniry (Site AMSEA Representative)	richkeniry@kildara.com.au
Ben Swain (AMSEA Executive Officer)	ben.swain@bcsagribusiness.com.au

Contents

2022 Drop Yearling Assessment

The information in this Site Report provides an update of the assessment of the 2022 drop, including the Yearling assessment of the sire's progeny performance for measured and visually assessed traits.

The Yearling midside fleece assessments were completed at 11 months of age with 11 months of wool growth and shearing was completed at the same time.

Visual Trait Assessment and Site Breeding Objective

Visual trait assessment
Classer's Grade: Brad Wilson
Visual Trait Scores: Jim Meckiff

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.

To breed sheep that produce a fine, bright, white quality fleece and of sound conformation (including feet) suitable for the Tablelands environment; maintaining a micron of 17-18, increasing staple length for a short shearing interim whilst maintaining the fleece weight. A selection pressure on a free growing body, with a focus on increased size/fertility to enable a younger maiden joining and wether sales.

In regard to Classer's Visual Grades the expectation is at the start of grading that there will be a ratio of 25% Top, 50% Flock and 25% Cull. However, the sheep performance relative to the above breeding objective determines the final proportion allocated to each grade.

Sire Codes and Pedigrees

Sire Code	Breeders flock, Sire name	Sheep Genetics ID	Sire of Sire
1	Blink Bonnie, 180085	505087-2018-180085	Unknown
2	Bogo, 190391	504792-2019-190391	Pooginook Poll,140961
3	Boxleigh Park, 181057	509232-2018-181057	Boxleigh Park, 160843
4	Centre Plus Poll, 707350 (Link Sire)	601250-2017-707350	Centre Plus Poll, 507333
5	GullenGamble Poll, 201764	601414-2020-201764	GullenGamble Poll, 150891
6	Gundibri Poll, 180095	609211-2018-180095	Gundibri Poll, 160061
7	Hazeldean, 002980	500383-2018-002980	Hazeldean, 003374
8	Karalta Poll, 180917	609117-2018-180917	Unknown
9	One Oak Poll, R15050 (Link Sire)	600408-2017-R15050	Wallaloo Park Poll, 150422
10	Pooginook Poll, 200204	601442-2020-200204	Leahcim Poll, 182295
11	Rocklyn, 190204	501039-2019-190204	Rocklyn, 170184
12	Roseville Park Poll, 200085	601288-2020-200085	Roseville Park Poll, 173116
13	Stirling Dohne, 200036	510186-2020-200036	Stirling Dohne, 140079
14	Trefusis, 170332	500013-2017-170332	Roseville Park, 122792

Sire and Owner Contact Details

Breeders flock, Sire name Sire ID #	Contact Details
Blink Bonnie, 180085 505087-2018-180085	**Peter Moore** Blink Bonnie, 976 Sodwalls Rd, Tarana NSW 2787 M: 0419 01 1398, E: kayespainthorses@gmail.com
Bogo, 190391 504792-2019-190391	**Malcolm Peake** Springfield, 1679 Stockinbingal Rd, Cootamundra NSW 2590 M: 0408 42 6103, E: info@bogomerinos.com.au
Boxleigh Park, 181057 509232-2018-181057	**Hugh Taylor** Willunga, 775 Twelve Mile Rd, Wellington NSW 2820 P: (02) 6845 3669, M: 0488 44 5495, E: boxleighpark@bigpond.com
Centre Plus Poll, 707350 (Link Sire) 601250-2017-707350	**Robert Mortimer** Devondale, Tullamore NSW 2874 P: (02) 6892 8259, M: 0429 92 8292, E: robert@centreplus.com.au
GullenGamble Poll, 201764 601414-2020-201764	**Max Edwards** Westcourt, 1931 Renshaw McGirr Way, Walmer NSW 2820 M: 0448 60 0007, E: westcourt2820@yahoo.com
Gundibri Poll, 180095 609117-2018-180917	**James Munro** Gundibri, 5225 Scone Rd, Merriwa NSW 2329 M: 0439 48 3050, E: munnersinc@bigpond.com
Hazeldean, 002980 500383-2015-003374	**Jim Litchfield** 1410 Maffra Rd, Cooma NSW 2630 P: (02) 6453 5555, M: 0417 67 6561, E: admin@hazeldean.com.au
Karalta Poll, 180917 609117-2018-180917	**Tom Spielvogel** 225 Dolly's Creek Road, Morrisons VIC 3334 P: (03) 5341 5551, M: 0408 86 1451, E: tommy_8@bigpond.com
One Oak Poll, R15050 (Link Sire) 600408-2017-R15050	**Alistair and Natasha Wells** One Oak Poll, 1340 Liddles Lane, Jerilderie NSW 2716 P: (03) 5886 7117, M: 0427 86 7117, E: oneoakpoll@gmail.com
Pooginook Poll, 200204 601442-2020-200204	**John Sutherland** Pooginook , Jerilderie NSW 2716 P: (02) 6954 8308, M: 0428 95 3017, E: pooginook@paraway.com.au
Rocklyn, 190204 501039-2019-190204	**Ralph Diprose** Elon, Cowra Rd, Grenfell NSW 2810 P: (02) 6343 6331, M: 0488 43 6332, E: rkdiprose@gmail.com
Roseville Park Poll, 200085 601288-2020-200085	**Matthew and Cherie Coddington** Glenwood, 39R Dilladerry Rd MS3, Dubbo NSW 2830 P: (02) 6887 7286, M: 0428 63 5386, E: rpmerinos@bigpond.com
Stirling Dohne, 200036 510186-2020-200036	**Murray Rogerson** 538 Astons Road, Glenthompson VIC 3293 P: (03) 5577 8248, E: murrayrogerson1954@gmail.com
Trefusis, 170332 500013-2017-170332	**Georgina and Hamish Wallace** 1929 Tooms Lake Road, Ross TAS 7209 P: (03) 6381 5320, M: 0438 98 6257, E: gawallace@trefusis.com.au

(Link Sire) 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.*

Link sires are a vital sire evaluation component as they provide the 'genetic link' between sire evaluation sites located across Australia, allowing all sires entered to have their performance reported relative to each other in the annual Merino Superior Sires. An AMSEA link a sire must have at least 25 progeny assessed at their 1st sire evaluation assessment.

The 16 digit Sire ID is a unique number for all sheep.
- 2 for the breed of the flock, e.g.Merino (50), Poll Merino (60), Dohne (51)
- 4 for flock code, AASMB Registered flock code or unregistered code.
- 4 for year of drop & 6 for tag# used in the breeder's records.

Manager's Report

Host Property and Ewe Base
The Ross family property "Willow Glen" is a 2,000 acre property located near Bathurst in the Central Tablelands. It has been owned by the Ross family for over 80 years.

The property provides intensive livestock grazing, whilst also producing fodders crops. With an average rainfall of 625mls, temperatures of the season vary significantly with winter bringing below zero degrees, and summer getting up to over 30 degrees.

Running approximately 6,000 sheep, including 3000 ewes, the ewe base is Roseville Park blood. The standard reference weight of the ewes is 55kg producing 17micron wool and cutting approximately 4.5kg per head.

Matthew Coddington classes the flock, usually in February each year.

2022 Drop Summary
The site evaluated 14 sires including 2 link sires. A total of 717 ewes were joined via AI on 6 & 7 April 2022. Pregnancy scanning on 2 June 2022 showed 138 empty, 361 singles, 204 twins and 14 triplets. There were 579 ewes confirmed in lamb.

The ewes were split into 2 single mobs of 180, 4 mobs of 51 twins and 1 mob of triplets. They were then placed onto improved pasture paddocks for lambing which started on 29 August 2022.

681 lambs were marked, and the triplets were removed which resulted in a survival rate of 83.9%.

The lambs were weaned on 29 December 2022 and weighed an average of 25.0kg

The lambs were classed on 7 July 2023 at 11 months of age (fleece rot, wool colour, wool character, dust penetration, staple structure, face cover, jaw, legs/feet, dag and Classer's Visual Grade) with 20% classed into Tops, 43% Flock and 37% Culls. Mid-side sampling was also taken at this time.

Shearing of the progeny was conducted on 10 July 2023, with the off shears traits being completed the following day.

The progeny faced a challenging first year with a high worm burden in January and February. 20 lambs were lost on 21 September 2022 due to 130mm of rain falling. The summer after lambing saw a La Nina event which meant temperatures were mild and rain was extensive, particularly throughout the Spring and Summer.

Graeme and Simon Ross
Willow Glen
Bathurst, NSW

Assessment and Management Program

Activity	Date/s	Age	Wool
Selection of ewes	March 2022		
Allocation of ewes for mating	April 6-7, 2022		
Pregnancy scanning	June 2, 2022		
Allocated to lambing paddocks	August 20, 2022		
Lambing: start – finish	August 29, 2022 – September 7, 2022		
Lambing mobs boxed to one management group	September 20, 2022	< 4 weeks	
Tagging, pigmentation and breech scoring	September 20, 2022	< 4 weeks	
Marking	September 20, 2022	< 4 weeks	
Weaning	December 29, 2022	4 months	
Mid side fleece sampling (Y)	July 7, 2023	11 months	11 months
Visual trait scoring (Y)	July 7, 2023	11 months	11 months
Shearing (Y)	July 10, 2023	11 months	11 months
Worm egg count	Not collected; minimum measurement threshold not reached.		
Body Weight (W) **Body Weight (P)**	December 29, 2022 May 2, 2023	4 months 9 months	
Drench	Triguard, Startect, Cydectin, Levamisole		
Fly treatment	Venus was applied at weaning and again in February 2023.		
Supplementary Feeding	Nil		
Field day or public display	On 2 June 2023 a Field Day was held in conjunction with the MerinoLink Conference and attracted over 200 attendees to the site.		

Explaining the Different Types of Results Reported

Raw Data » **Adjusted Sire Means** » **Flock Breeding Values**

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

Generally, AMSEA publishes **Adjusted Sire Means**, **Flock Breeding Values** and **Indexes** in Site Reports as they offer a higher level of accuracy**.** Visual Traits were historically reported as **Raw Data**, however Adjusted Sire Means are now available for these traits and visual traits will now be presented in this format.

Raw Data

Raw data; 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, the number of progeny a sire has and management group(s).

Flock Breeding Values (FBVs)

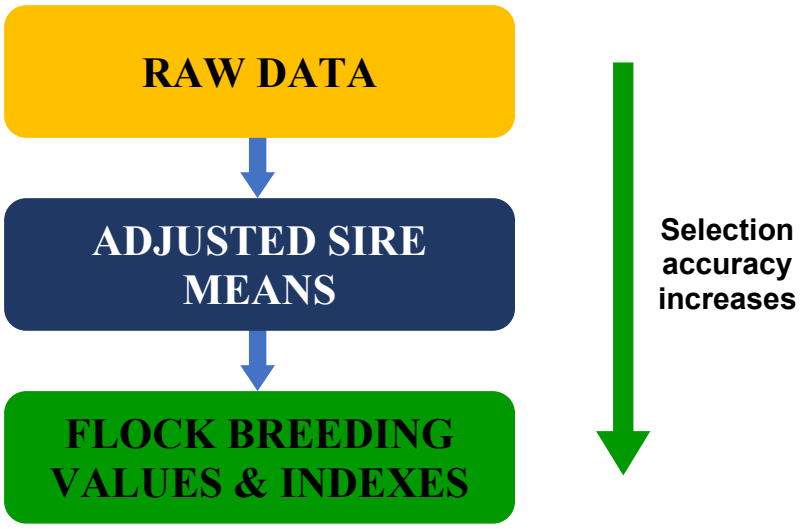
These results have been adjusted in the same way as Adjusted Sire Means, then further calculations have also been made to account for the level of heritability of a trait (some are more heritable than others) and correlations between traits.

FBVs are within site and within drop. As such they do not include data from other sources as is the case with Australian Sheep 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’.



Understanding the Results - Classer's Visual Grade & Visual Traits	
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 weaning. Average number of progeny is included.
Trait Leaders:	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.
Age at assessment:	M = Marking - 14 to 39 days (2 to 6 weeks) P = Post Weaning - 150 to 299 days (5 to 10 months) H = Hogget - 450 to 659 days (15 to 22 months) W = Weaning - 40 to 149 days (6 weeks to 5 months) Y = Yearling - 300 to 449 days (10 to 15 months) A = Adult - 660 days or older (22 months or 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 also included. Classer's Visual Grade is reported as Adjusted Sire Means; Results which have been adjusted for made for all available information on sex, birth type, rear type, age of dam, age of measurement, the number of progeny a sire has and management group(s), in order to improve the accuracy. No account is made for trait heritability or genetic correlations between traits that can further improve the accuracy. More detail on who completed the Visual Grade Classing/Scoring and the site's Breeding Objective is available earlier in this report.
Visual Traits:	The following description of trait scores is a summary of the detailed word and diagrammatical description of these scores in Version 3 (2019) of the Visual Sheep Scores booklet that is available free from AWI or at *www.merinosuperiorsires.com.au*. For the majority of breeding objectives a lower score would be considered favourable and a large difference below the average performance is preferable. *Staple structure, Jaw* and *Face* are the possible exceptions when for many breeders the optimum score is in the middle of the range therefore trait leaders are not highlighted. Visual traits are reported as reported as **Adjusted Sire Means**; Results which have been adjusted for made for all available information on sex, birth type, rear type, age of dam, age of measurement, the number of progeny a sire has and management group(s), in order to improve the accuracy. No account is made for trait heritability or genetic correlations between traits that can further improve the accuracy.
Fleece rot:	FLROT - 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:	COL - Greasy wool colour scored from **1** (whitest) to **5** (yellow).
Wool character:	CHAR - 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:	DUST - Degree of dust penetration from **1** (only tip <6%) to **5** (71 to 100% of staple).

Staple weathering:	WEATH - 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:	SSTRC - The size and diameter of each staple from **1** (<6mm) to **5** (>30 mm).
Fibre pigmentation:	FPIG - 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:	SPIG - 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 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. Only the percentage of progeny for each sire who scored 5 are reported for Recessive black and Random spot.
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.
Jaw:	JAWR - Under or over-shot lower jaw (and teeth) relative to the top jaw. Five scores: 1 (heavily under-shot); 2 (marginally undershot);3 (very well aligned); 4 (marginally over-shot), 5 (heavily over-shot).
Feet/Legs:	LEGS - Conformation of feet and legs scored from **1** (very straight) to **5** (very angulated).
Back/Shoulder:	BACK - Conformation of the back and shoulder from **1** (very square) to **5** (very dipped or high).
Face cover:	FACE - Wool cover on the face scored from **1** (open face) to **5** (fully covered face).
Body wrinkle:	BDWR - The degree of body wrinkle from **1** (no wrinkle) to **5** (extensive wrinkle).
Breech cover:	BCOV - Size of natural bare area around the breech from **1** (large) to **5** (no bare).
Breech wrinkle:	BRWR - Degree of wrinkle at the tail set and hind legs from **1** (nil) to **5** (extensive).
Dag:	DAG - Degree of dag adhering to the breech and legs from **1** (nil) to **5** (extensive).
Crutch cover:	CCOV - Size of natural bare area in the pubic and groin from **1** (large) to **5** (no bare).
Dag:	DAG - Degree of dag adhering to the breech and legs from **1** (nil) to **5** (extensive).
Urine:	URINE - Degree of urine stained wool in the breech area, including the hind legs from **1** (nil) to **5** (extensive).

Table 1. 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 also included.

Classer's Visual Grade is reported as **Adjusted Sire Means**; Results which have been adjusted for made for all available information on sex, birth type, rear type, age of dam, age of measurement, the number of progeny a sire has and management group(s), in order to improve the accuracy. No account is made for trait heritability or genetic correlations between traits that can further improve the accuracy.

Sire Code	Breeders flock, Sire name	Number of Progeny*	Classer's Visual Grade *Yearling*	
			TOPS %	CULLS %
1	Blink Bonnie, 180085	45	-15	19
2	Bogo, 190391	44	8	-7
3	Boxleigh Park, 181057	41	22	-31
4	Centre Plus Poll, 707350 (Link Sire)	38	1	-5
5	GullenGamble Poll, 201764	45	8	-7
6	Gundibri Poll, 180095	41	5	0
7	Hazeldean, 002980	48	-6	14
8	Karalta Poll, 180917	48	-14	9
9	One Oak Poll, R15050 (Link Sire)	38	-21	28
10	Pooginook Poll, 200204	43	8	-1
11	Rocklyn, 190204	45	14	-7
12	Roseville Park Poll, 200085	41	-7	12
13	Stirling Dohne, 200036	44	1	-7
14	Trefusis, 170332	33	-5	-17
	Progeny group average	**42**	**20**	**37**

These grades were collected on both the ewe and wether progeny.

***Number of progeny is as at the Yearling classing event.**

Table 2. Visual Traits - Wool Quality and Pigmentation

Visual traits are reported as reported as **Adjusted Sire Means**; Results which have been adjusted for made for all available information on sex, birth type, rear type, age of dam, age of measurement, the number of progeny a sire has and management group(s), in order to improve the accuracy. No account is made for trait heritability or genetic correlations between traits that can further improve the accuracy.

Sire Code	Breeders flock, Sire name	Number of Progeny	Wool Quality - *Yearling*					Pigmentation - *Marking*			
			FLROT	COL	CHAR	SSTRC	WEATH	FPIG	SPIG	BLACK % Score 5	SPOT % Score 5
1	Blink Bonnie, 180085	48	1.8	1.7	1.8	1.5	2.3	1.0	3.9	0	2
2	Bogo, 190391	48	1.4	1.4	1.6	1.3	2.3	1.1	3.7	0	0
3	Boxleigh Park, 181057	41	1.2	1.4	1.5	1.2	2.4	1.0	3.0	0	0
4	Centre Plus Poll, 707350 (Link Sire)	38	2.4	1.5	1.6	1.4	2.5	1.1	3.9	0	0
5	GullenGamble Poll, 201764	47	2.3	1.8	1.9	1.6	2.6	1.0	3.4	0	0
6	Gundibri Poll, 180095	43	2.2	1.5	1.8	1.4	2.6	1.1	4.2	0	4
7	Hazeldean, 002980	53	2.4	1.6	1.6	1.4	2.4	1.0	3.3	0	0
8	Karalta Poll, 180917	48	2.3	1.2	1.7	1.4	2.1	1.0	4.1	0	0
9	One Oak Poll, R15050 (Link Sire)	39	2.8	1.8	2.1	1.8	2.6	1.0	3.0	0	0
10	Pooginook Poll, 200204	45	2.2	1.8	1.8	1.3	2.5	1.0	3.3	0	2
11	Rocklyn, 190204	45	2.9	1.7	1.9	1.6	2.7	1.0	3.2	0	2
12	Roseville Park Poll, 200085	46	2.2	1.5	1.6	1.3	2.3	1.0	3.4	0	0
13	Stirling Dohne, 200036	45	2.9	1.6	2.0	1.6	2.6	1.0	3.8	0	0
14	Trefusis, 170332	34	1.8	1.5	1.5	1.3	2.4	1.0	4.5	0	3
	Progeny group average	**44**	**2.2**	**1.6**	**1.7**	**1.4**	**2.5**	**1.0**	**3.6**	**-**	**-**

Yearling and marking visual scores were collected on the ewe and wether progeny.

Table 3. Visual Traits - Conformation

Visual traits are reported as reported as **Adjusted Sire Means**; Results which have been adjusted for made for all available information on sex, birth type, rear type, age of dam, age of measurement, the number of progeny a sire has and management group(s), in order to improve the accuracy. No account is made for trait heritability or genetic correlations between traits that can further improve the accuracy.

Sire Code	Breeders flock, Sire name	Number of Progeny	Conformation - Yearling				
			JAWR	LEGS	BACK	FACE	BDWR
1	Blink Bonnie, 180085	48	3.0	2.6	2.0	3.3	2.9
2	Bogo, 190391	48	3.0	2.7	1.6	3.1	2.6
3	Boxleigh Park, 181057	41	3.0	2.4	1.4	3.0	2.2
4	Centre Plus Poll, 707350 (Link Sire)	38	2.9	2.8	1.6	2.9	2.8
5	GullenGamble Poll, 201764	47	3.0	2.3	1.9	3.3	2.1
6	Gundibri Poll, 180095	43	3.0	2.5	1.6	3.2	2.3
7	Hazeldean, 002980	53	3.0	3.0	1.8	3.4	3.0
8	Karalta Poll, 180917	48	3.0	2.9	1.6	3.6	3.4
9	One Oak Poll, R15050 (Link Sire)	39	3.0	2.6	1.7	3.9	2.6
10	Pooginook Poll, 200204	45	3.0	2.8	1.7	2.9	2.6
11	Rocklyn, 190204	45	3.0	2.7	1.6	3.1	2.7
12	Roseville Park Poll, 200085	46	3.0	2.5	2.0	3.1	3.4
13	Stirling Dohne, 200036	45	3.0	2.6	1.3	3.2	2.2
14	Trefusis, 170332	34	3.0	2.4	2.0	3.3	2.6
	Progeny group average	**44**	**3.0**	**2.6**	**1.7**	**3.2**	**2.7**

Yearling visual scores were collected on the ewe and wether progeny.

Table 4. Visual Traits - Breech

Visual traits are reported as reported as **Adjusted Sire Means**; Results which have been adjusted for made for all available information on sex, birth type, rear type, age of dam, age of measurement, the number of progeny a sire has and management group(s), in order to improve the accuracy. No account is made for trait heritability or genetic correlations between traits that can further improve the accuracy.

Sire Code	Breeders flock, Sire name	Number of Progeny	Breech Visual Traits			
			BCOV	BRWR	BCOV	BRWR
			Marking		*Yearling*	
1	Blink Bonnie, 180085	48	3.3	2.8	4.1	3.3
2	Bogo, 190391	48	3.5	2.8	4.1	2.9
3	Boxleigh Park, 181057	41	2.8	1.7	3.7	2.0
4	Centre Plus Poll, 707350 (Link Sire)	38	3.0	2.4	3.5	2.8
5	GullenGamble Poll, 201764	47	3.5	2.2	3.9	2.1
6	Gundibri Poll, 180095	43	3.9	2.2	4.2	2.4
7	Hazeldean, 002980	53	3.4	2.7	4.3	3.2
8	Karalta Poll, 180917	48	3.6	3.3	4.2	3.5
9	One Oak Poll, R15050 (Link Sire)	39	3.2	2.6	4.1	2.8
10	Pooginook Poll, 200204	45	3.3	2.0	3.9	2.5
11	Rocklyn, 190204	45	3.3	2.3	3.8	3.1
12	Roseville Park Poll, 200085	46	3.3	2.8	4.0	3.2
13	Stirling Dohne, 200036	45	2.9	2.3	3.7	2.4
14	Trefusis, 170332	34	3.5	2.2	4.0	2.7
	Progeny group average	**44**	**3.3**	**2.5**	**4.0**	**2.8**

Yearling and marking visual scores were collected on the ewe and wether progeny.

Understanding the Results - Measured Traits	
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 weaning. Average number of progeny is included.
Trait Leaders:	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)	Measured traits are those assessed via a standardised collection and testing process completed by an independent, accredited and recognised service provider. Measured traits include the following: GFW: Greasy fleece weight (percentage) CFW: Clean fleece weight (percentage) FD: Average fibre diameter (micron) FDCV: Fibre diameter coefficient of variation (percentage) SL: Staple length (mm) at the mid-side SS: Staple strength (N/ktex) at the mid-side CURV: Fibre curvature (degrees) WT: Body weight (kilograms) EMD: Eye muscle depth (mm) at the 'C' site FAT: Fat depth (mm) at the 'C' site WEC: Worm egg count (% deviation in worm burden of sire's progeny)
Age at assessment:	M = Marking - 14 to 39 days (2 to 6 weeks) W = Weaning - 40 to 149 days (6 weeks to 5 months) P = Post Weaning - 150 to 299 days (5 to 10 months) Y = Yearling - 300 to 449 days (10 to 15 months) H = Hogget - 450 to 659 days (15 to 22 months) A = Adult - 660 days or older (22 months or older)
Adjusted Sire Means	Sire means are the average performance of all the progeny of a sire adjusted for the progeny's birth type, rear type, age of dam, management group and the number of progeny a sire has in the analysis. Adjustments improve the accuracy of the result and adjustments are based on the actual influence of these factors on the drop. No account is made for trait heritability and genetic correlations between traits. The overall progeny group mean is also reported.
Flock Breeding Values (FBVs)	FBVs are deviations from the average ie. negative values are below average, positives are above. FBVs presented are calculated from data recorded within-site and within-drop and express the expected genetic performance 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 the association between traits, the heritability of the trait, and non-genetic affects such as birth and rear type, sex, and the number of progeny a sire has in the analysis. Adult FBVs are calculated using all measured assessments up to the current stage. As further assessments are completed, breeding values at earlier stages are also subject to change. For more information: www.merinosuperiorsires.com.au/resources.
Indexes	The indexes reported are based on measured traits FBV performance with varying emphasis on fleece weight, fibre diameter, body weight, staple strength and worm egg count. The indexes reported 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 are not currently collected as part of standard sire evaluation trials. The WP+ index is unique to AMSEA. Further information about Indexes is available later in this report and at www.merinosuperiorsires.com.au/resources.

Table 5. Adjusted Sire Means - Wool

Sire Code	Breeders flock, Sire name	Number of Progeny	Adjusted Sire Means						
			GFW kg Y	CFW kg Y	FD µm Y	FDCV % Y	SL mm Y	SS N/ktex Y	CURV deg/mm Y
1	Blink Bonnie, 180085	48	2.3	1.7	15.0	19.5	71.6	16.9	96.9
2	Bogo, 190391	48	2.5	1.9	15.5	18.4	77.6	17.7	87.7
3	Boxleigh Park, 181057	41	2.3	1.7	16.1	18.0	86.9	16.3	88.4
4	Centre Plus Poll, 707350 (Link Sire)	38	2.7	1.9	15.7	18.4	84.9	19.5	93.0
5	GullenGamble Poll, 201764	47	2.3	1.7	15.8	18.3	77.3	15.4	89.2
6	Gundibri Poll, 180095	43	2.4	1.7	16.1	18.3	82.0	16.1	89.7
7	Hazeldean, 002980	53	2.6	1.8	14.8	19.0	76.3	14.4	95.7
8	Karalta Poll, 180917	48	2.3	1.7	14.5	18.6	66.8	14.1	105.8
9	One Oak Poll, R15050 (Link Sire)	39	2.3	1.6	15.2	19.8	74.6	13.9	91.5
10	Pooginook Poll, 200204	45	2.4	1.7	15.4	17.6	81.5	15.5	89.5
11	Rocklyn, 190204	45	2.6	1.9	15.9	18.1	82.6	16.8	92.0
12	Roseville Park Poll, 200085	46	2.3	1.7	14.7	20.3	66.5	16.2	99.1
13	Stirling Dohne, 200036	45	2.4	1.8	16.0	17.9	77.2	16.4	88.7
14	Trefusis, 170332	34	2.3	1.6	15.4	18.4	76.1	15.5	100.0
	Progeny group average	**44**	**2.4** kg	**1.7** kg	**15.4** µm	**18.6** %	**77.1** mm	**16.0** N/ktex	**93.4** deg/mm

These Adjusted Sire Means were calculated using data from both ewe and wether progeny for the Yearling measurements.

Table 6. Adjusted Sire Means - Weight and Carcase

Sire Code	Breeders flock, Sire name	Number of Progeny	Adjusted Sire Means			
			WT kg		EMD mm	FAT mm
			W	P		
1	Blink Bonnie, 180085	48	24.0	29.2	*Not assessed at this stage.*	
2	Bogo, 190391	48	24.6	31.6		
3	Boxleigh Park, 181057	41	24.9	32.6		
4	Centre Plus Poll, 707350 (Link Sire)	38	24.8	33.0		
5	GullenGamble Poll, 201764	47	26.4	32.8		
6	Gundibri Poll, 180095	43	25.0	31.1		
7	Hazeldean, 002980	53	24.5	31.5		
8	Karalta Poll, 180917	48	22.7	29.9		
9	One Oak Poll, R15050 (Link Sire)	39	23.8	30.0		
10	Pooginook Poll, 200204	45	24.9	32.3		
11	Rocklyn, 190204	45	25.3	34.2		
12	Roseville Park Poll, 200085	46	25.1	30.0		
13	Stirling Dohne, 200036	45	27.6	34.9		
14	Trefusis, 170332	34	26.9	31.3		
	Progeny group average	**44**	**25.0**	**31.8**		
			kg		mm	mm

These Adjusted Sire Means were calculated using data from both ewe and wether progeny for the Weaning and Post Weaning measurements.

Table 7. Flock Breeding Values - Wool

Sire Code	Breeders flock, Sire name	Number of Progeny	Flock Breeding Values (deviations)						
			GFW % Y	CFW % Y	FD µm Y	FDCV % Y	SL mm Y	SS N/ktex Y	CURV deg/mm Y
1	Blink Bonnie, 180085	48	-9	-9	-0.8	1.4	-9.7	1.1	6.1
2	Bogo, 190391	48	9	11	0.1	-0.2	0.9	2.2	-10.1
3	Boxleigh Park, 181057	41	-6	-6	1.3	-1.1	15.9	0.3	-9.2
4	Centre Plus Poll, 707350 (Link Sire)	38	18	15	0.6	-0.4	12.5	4.8	-0.8
5	GullenGamble Poll, 201764	47	-5	-1	0.8	-0.6	0.4	-0.7	-6.6
6	Gundibri Poll, 180095	43	-4	-3	1.3	-0.7	8.0	0.7	-5.5
7	Hazeldean, 002980	53	15	8	-1.4	0.8	-1.6	-2.9	3.6
8	Karalta Poll, 180917	48	-11	-12	-2.0	0.2	-18.7	-3.9	20.0
9	One Oak Poll, R15050 (Link Sire)	39	-6	-6	-0.4	1.9	-4.2	-3.4	-3.0
10	Pooginook Poll, 200204	45	-4	-3	-0.1	-1.6	7.2	-0.1	-6.2
11	Rocklyn, 190204	45	19	19	0.9	-0.6	9.0	0.4	-3.3
12	Roseville Park Poll, 200085	46	-6	-6	-1.4	2.7	-18.2	-0.3	9.6
13	Stirling Dohne, 200036	45	-2	3	1.1	-1.3	0.6	1.5	-6.2
14	Trefusis, 170332	34	-8	-10	0.0	-0.5	-2.1	0.3	11.6

Flock Breeding Values are calculated using all available data from both ewe and wether progeny.

Table 8. Flock Breeding Values - Weight, Carcase and WEC

Sire Code	Breeders flock, Sire name	Number of Progeny	Flock Breeding Values (deviations)				
			WT kg		EMD mm	FAT mm	WEC %
			W	P			
1	Blink Bonnie, 180085	48	-1.8	-5.2	*Not assessed at this stage.*		*Not assessed as minimum threshold not met.*
2	Bogo, 190391	48	-0.7	-0.7			
3	Boxleigh Park, 181057	41	0.1	1.6			
4	Centre Plus Poll, 707350 (Link Sire)	38	0.3	3.0			
5	GullenGamble Poll, 201764	47	2.4	2.9			
6	Gundibri Poll, 180095	43	0.3	-0.3			
7	Hazeldean, 002980	53	-1.1	-1.7			
8	Karalta Poll, 180917	48	-4.3	-5.5			
9	One Oak Poll, R15050 (Link Sire)	39	-2.2	-3.1			
10	Pooginook Poll, 200204	45	0.2	1.1			
11	Rocklyn, 190204	45	0.6	4.6			
12	Roseville Park Poll, 200085	46	-0.3	-3.6			
13	Stirling Dohne, 200036	45	4.5	7.0			
14	Trefusis, 170332	34	2.1	0.0			

Flock Breeding Values are calculated using all available data from both ewe and wether progeny.

MERINOSELECT Indexes

A guide from Sheep Genetics

Why use a selection index?

Indexes are an important tool to drive genetic improvement in ram breeding programs. Each index combines multiple measured traits, or breeding values, into a single value that reflects a certain production emphasis on these traits. A range of traits are included which are of economic or functional importance. Collectively, these traits make up the "breeding objective" of the index which aims to improve profitability in commercial sheep enterprises.

Indexes are useful because they balance genetic improvement appropriately across a range of traits with the emphasis of each individual trait determined by it's relative importance to a selection approach for a particular style of production system.

> **"** **Appropriately designed indexes are central to the goal of breeding more profitable sheep.**

However, it is recommended that the performance of individual measured and visually assessed traits also be used in conjunction with indexes.

Choosing the right index

This report includes four indexes based on four commercial production systems, these are outlined in the figure below.

The Sheep Genetics website gives further index descriptions and explains that there are 'base' and 'plus' levels for each index with the latter including the breeding values of additional traits. Sires reported within this document have accurate breeding values for these additional traits and so the plus indexes are reported; DP+, MP+, FP+ and WP+.

Dual Purpose (DP+)

Income is a balance of wool from breeding ewes and meat production from lambs by Merino and terminal sires.

Merino Production (MP+)

Income is a balance of wool and surplus Merino sheep sales with balanced improvement of fleece weight and fibre diameter.

Fibre Production (FP+)

Income is mainly from the wool clip with a focus on superior wool quality through improving fibre diameter, CV and staple strength.

Wool Production (WP+)

Income is a balance of wool and surplus Merino sheep sales with greater emphasis on increasing fleece weight.

> **"** **When selecting on these indexes the long-term responses will vary depending on the traits measured, available pedigree, use of genomics, flock structure and selection emphasis on the index.**

The changes in individual traits from using an index depend on the information you record in your flock. If you want to improve, or even just maintain a trait, you must record it to ensure breeding values are sufficiently accurate for the index to do its job.

For detailed explanations and further information on indexes visit:

www.sheepgenetics.org.au

Sheep Genetics have resources available for both ram breeders and ram buyers.

Table 9. AMSEA Indexes

The indexes reported 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 are not currently collected as part of standard sire evaluation trials. The WP+ index is unique to AMSEA. Further information about Indexes is available earlier in this report and at www.merinosuperiorsires.com.au/resources. The average value for all indexes is 100.

Sire Code	Breeders flock, Sire name	Number of Progeny	AMSEA Index Values			
			Dual Purpose Plus	Merino Production Plus	Fibre Production Plus	Wool Production Plus
1	Blink Bonnie, 180085	48	*Unable to be reported at this stage.*	84	94	78
2	Bogo, 190391	48		118	115	118
3	Boxleigh Park, 181057	41		80	81	86
4	Centre Plus Poll, 707350 (Link Sire)	38		133	122	133
5	GullenGamble Poll, 201764	47		93	90	98
6	Gundibri Poll, 180095	43		79	81	86
7	Hazeldean, 002980	53		122	120	118
8	Karalta Poll, 180917	48		89	100	81
9	One Oak Poll, R15050 (Link Sire)	39		83	90	84
10	Pooginook Poll, 200204	45		98	100	97
11	Rocklyn, 190204	45		133	118	139
12	Roseville Park Poll, 200085	46		96	103	90
13	Stirling Dohne, 200036	45		109	99	113
14	Trefusis, 170332	34		82	86	81

Indexes are calculated using all available data from both ewe and wether progeny.

Combined Measured Traits and Visual Performance

The following figures use the same sire codes as Table 2 to locate sire performance for a variety of trait combinations. The blue boxes describe the high and low performance quadrants of results for the traits, as does any text accompanying the figure.

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

The Dual Purpose Plus index is unable to be reported at this stage.

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

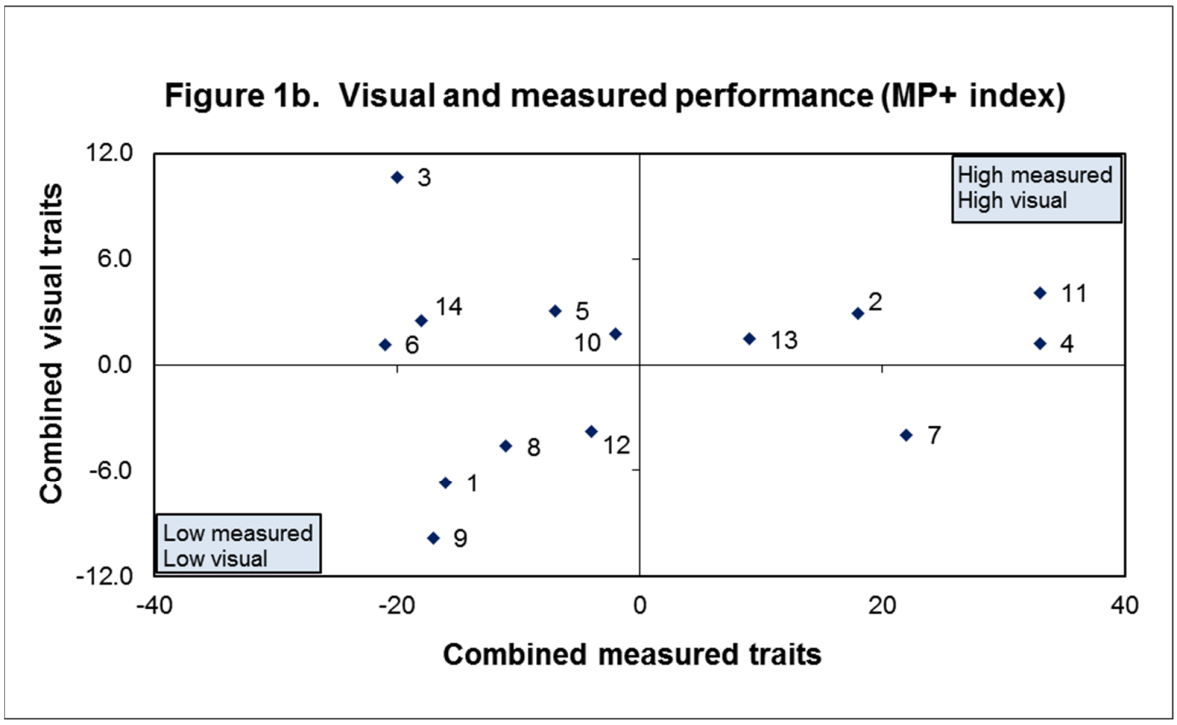


Figure 1c. Combined measured traits (FP+ index) and combined visually assessed traits for the site objective.

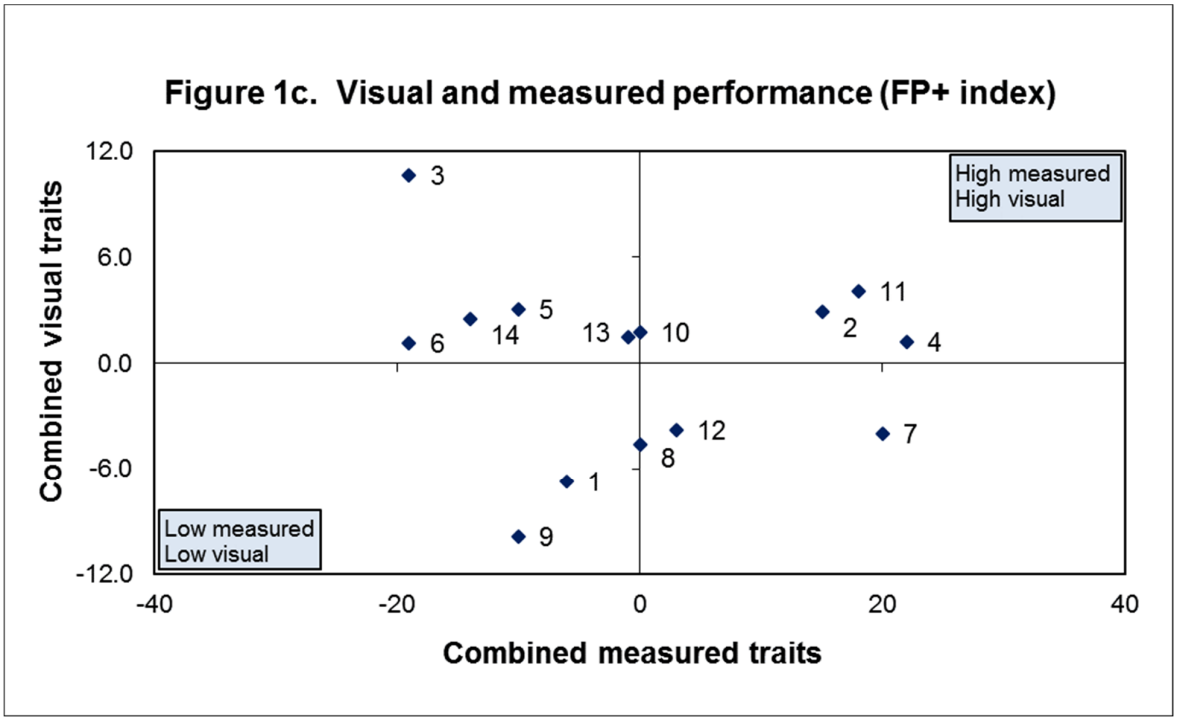
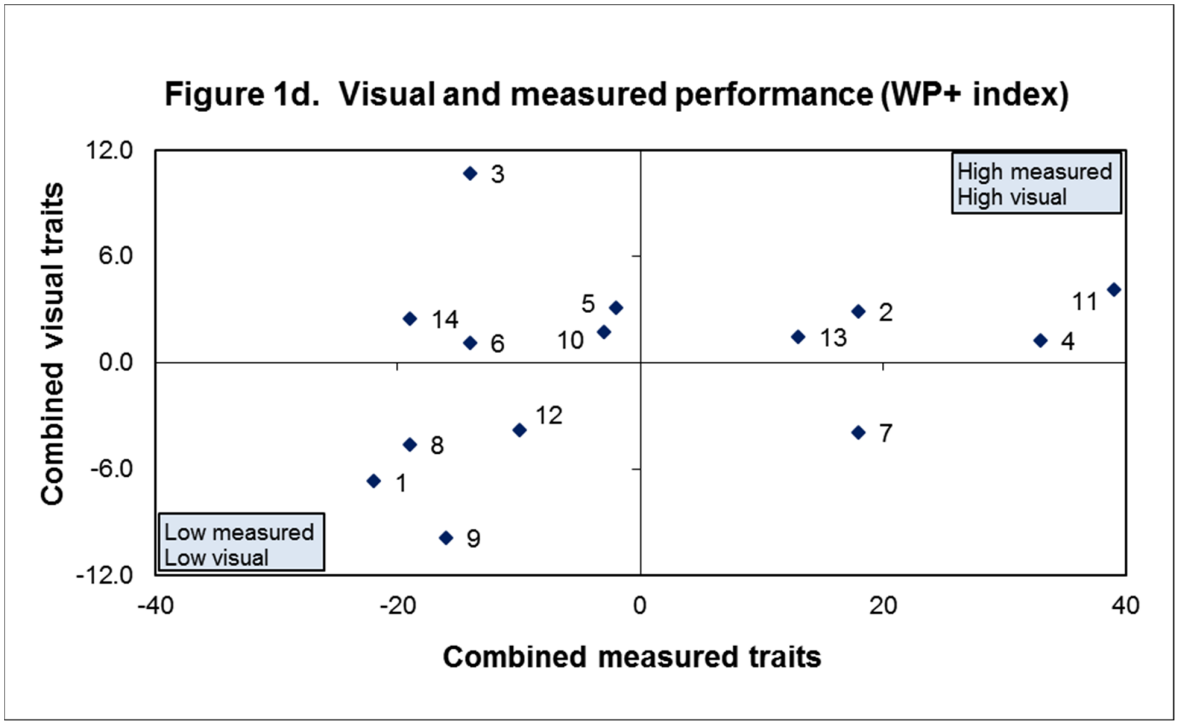


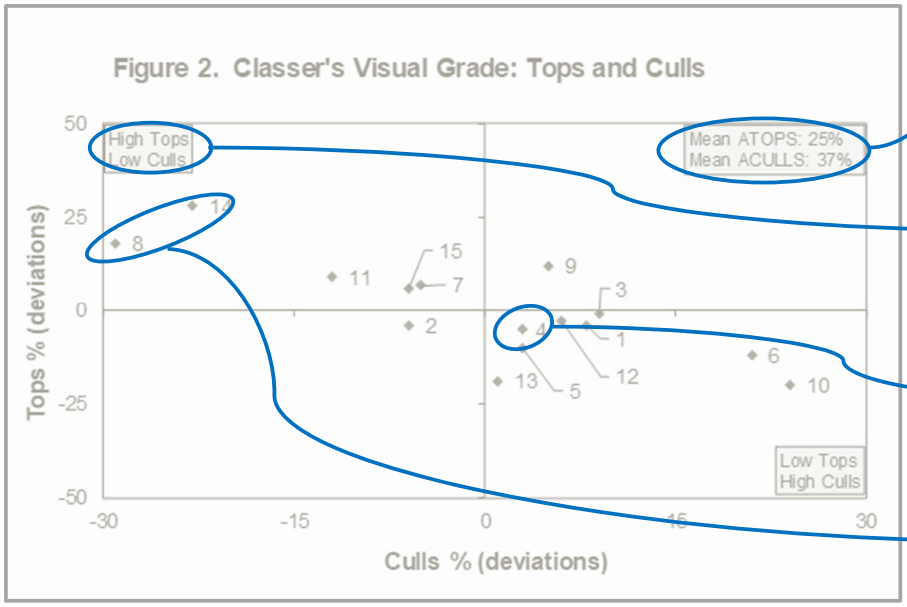
Figure 1d. Combined measured traits (WP+ index) and combined visually assessed traits for the site objective.



Understanding the Results - Summary Graphs

The following quadrant graphs summarise sire results for trait combinations of particular interest to industry. Sire codes are as per Table 2. The blue boxes describe the high and low quadrants of results for the traits, generally placed within the highest performing and the lowest performing quadrants. Progeny group averages are also reported for the graphed traits. Further descriptions are included in the accompanying text.

Explanation of a quadrant graph:



Progeny group averages: in this instance for Tops / Culls.

For this figure, this top left quadrant reports the most favourable performance (High Tops and Low Culls). Different quadrants will be the most / least optimal for different trait combinations.

This sire is performing close to the progeny group average.

These two sires are recorded in the extreme portion of the most optimal quadrant for this set of traits (Top / Culls).

Figure 2. Classer's Visual Grade - Tops and Culls
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.

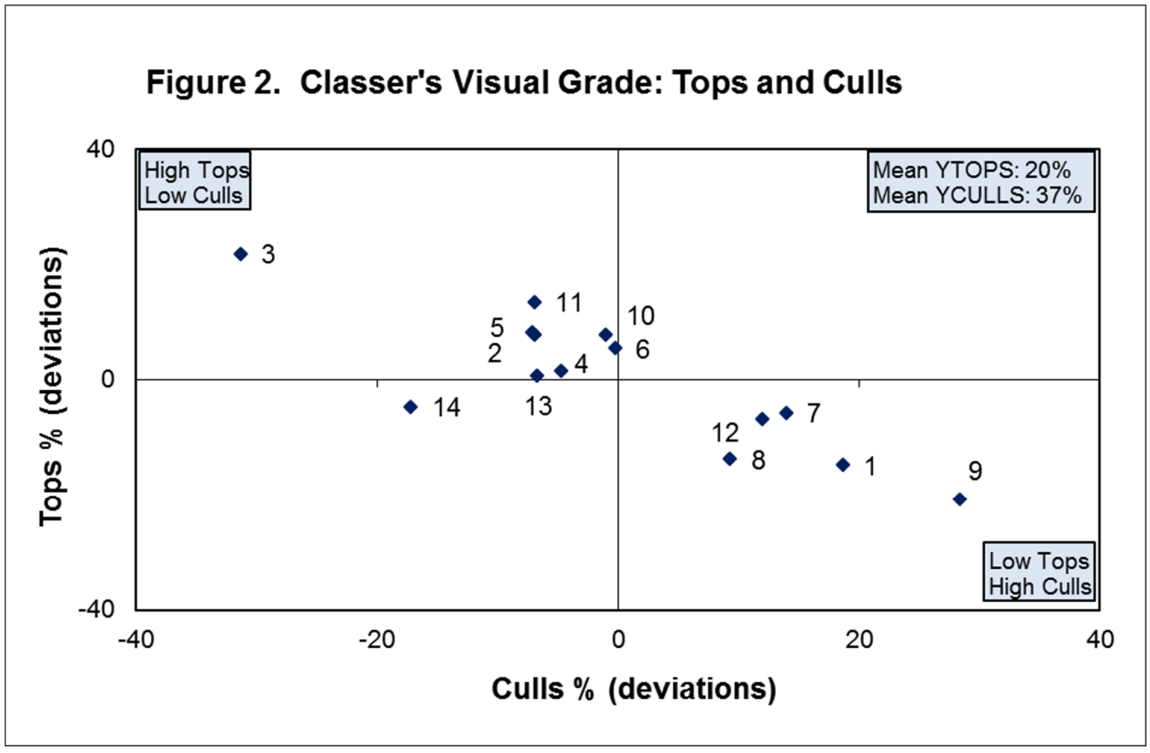


Figure 3. Fleece Weight and Fibre Diameter (FBVs)
The graph describes performance for clean fleece weight (CFW) on the side axis and fibre diameter (FD) on the bottom axis. Sires that are above average for fleece weight and below average fibre diameter are located in the top left hand quarter.

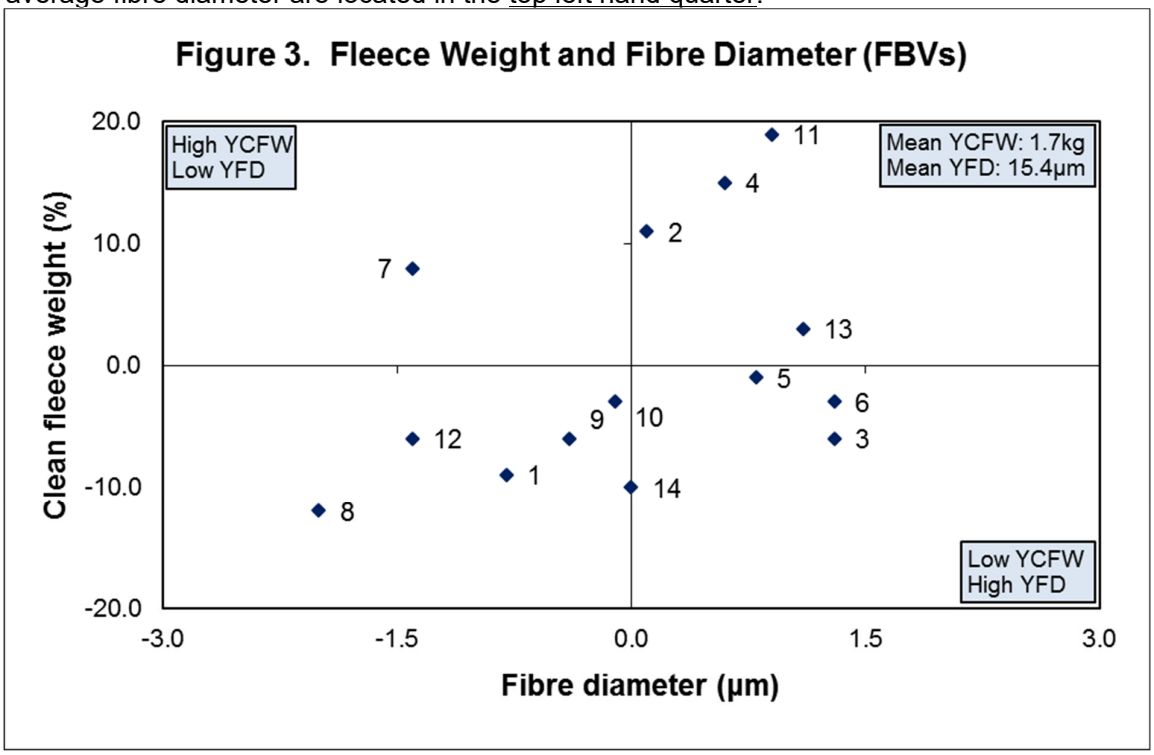


Figure 4. Fleece Weight and Staple Length (FBVs)
The graph describes performance for clean fleece weight (CFW) on the side axis and staple length (SL) on the bottom axis. Sires that are above average for fleece weight and above average for staple length are located in the top right hand quarter.

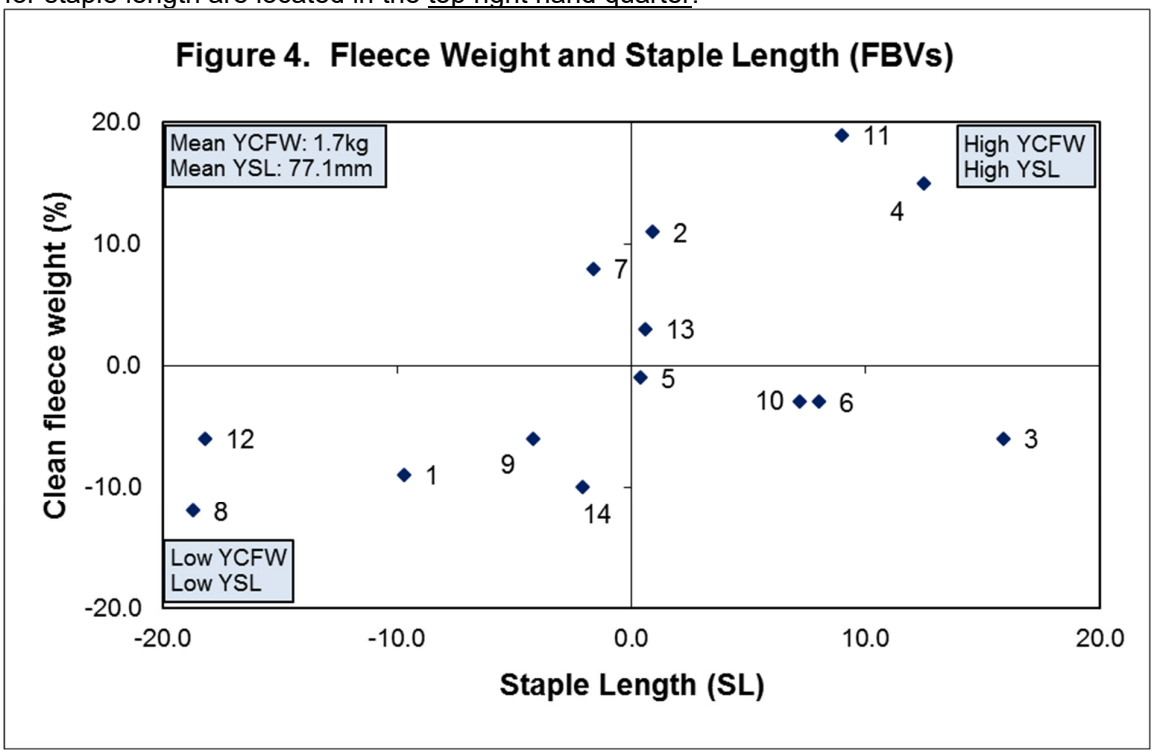


Figure 5. Fleece Weight and Body Weight (FBVs)
The graph describes performance for clean fleece weight (CFW) on the side axis and body weight (WT) on the bottom axis. Sires that are above average for fleece weight and above average for body weight are located in the top right hand quarter.

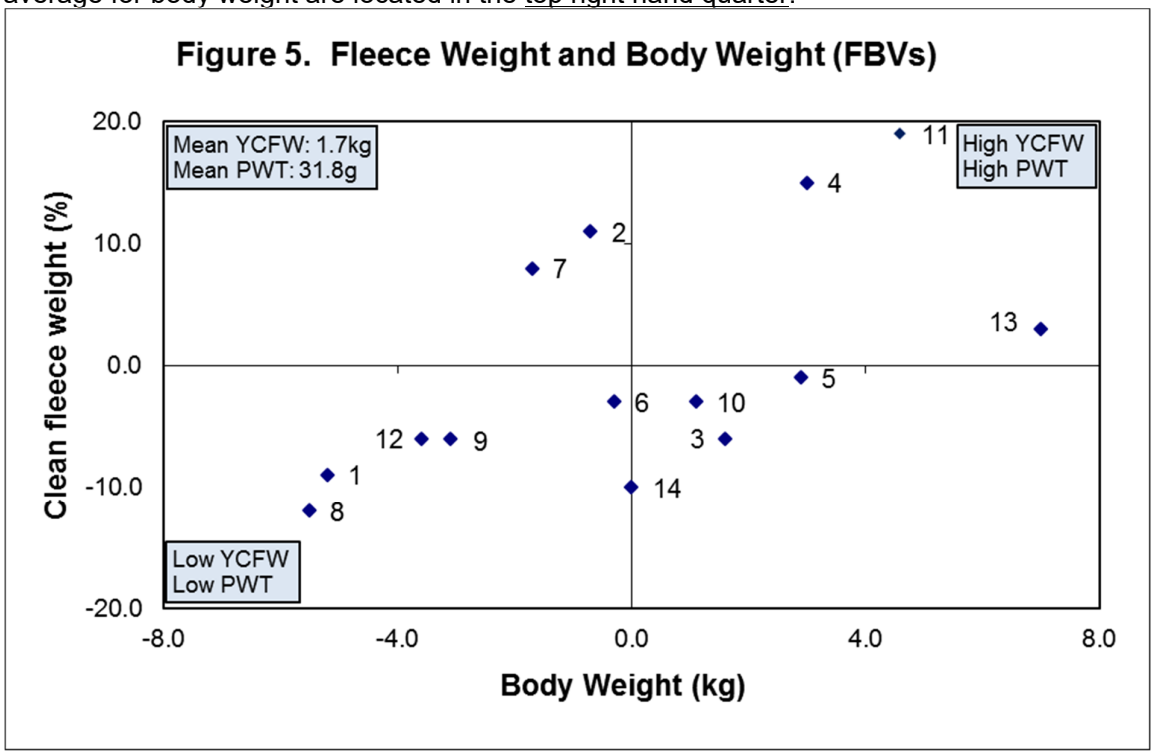


Figure 6. Fleece Weight and Fat (FBVs)
The graph describes performance for clean fleece weight (CFW) on the side axis and fat depth (FAT) on the bottom axis. Sires that are above average for fleece weight and above average for fat are located in the top right hand quarter.

Fat Depth (FAT) has not yet been assessed at this stage.

Figure 7. Fleece Weight and Eye Muscle Depth (FBVs)
The graph describes performance for clean fleece weight (CFW) on the side axis and eye muscle depth (EMD) 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.

Eye Muscle Depth (EMD) has not yet been assessed at this stage.

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

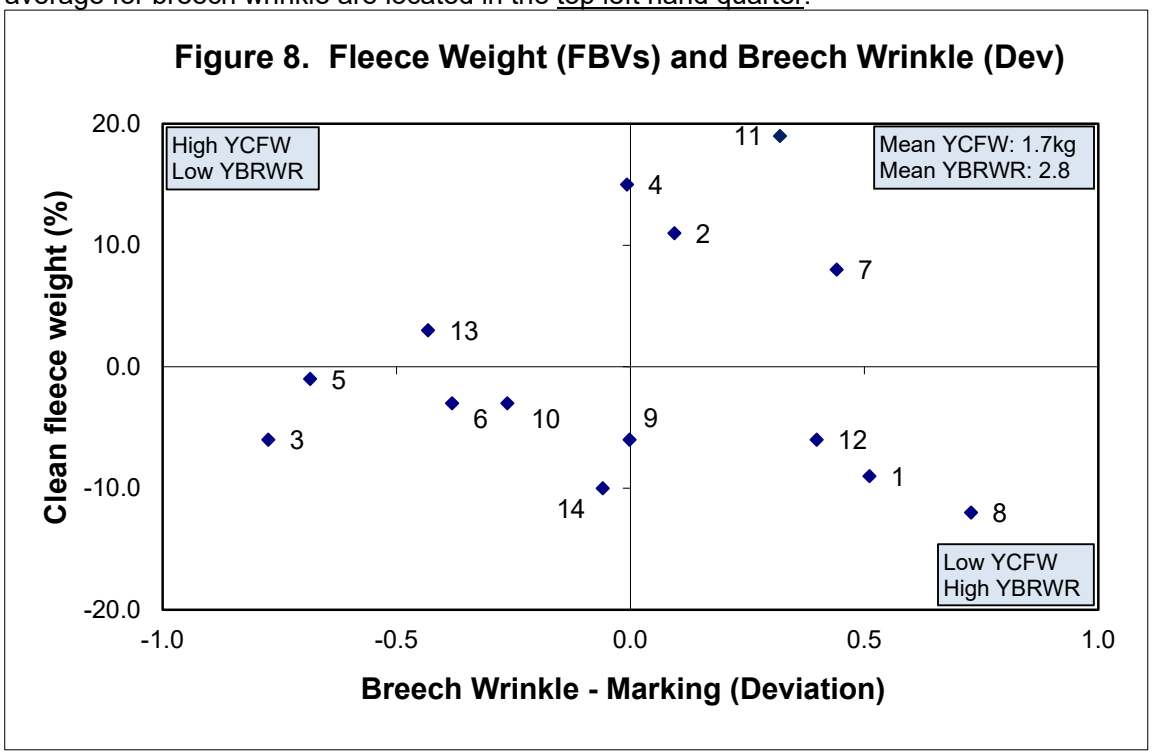


Figure 9. Body Weight and Eye Muscle Depth (FBVs)
The graph describes performance for body weight (WT) on the side axis and eye muscle depth (EMD) on the bottom axis. Sires that are above average for body weight and above average for eye muscle depth are located in the top right hand quarter.

Eye Muscle Depth (EMD) has not yet been assessed at this stage.

Figure 10. Staple Strength and Worm Egg Count (FBVs)
The graph describes performance for staple strength (SS) on the side axis and worm egg count (WEC) on the bottom axis. Sires that are above average for staple strength and below average for worm egg count are located in the top left hand quarter.

Worm Egg Count (WEC) not collected as minimum measurement threshold not yet reached.

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