Elders Victoria Sire Evaluation Group

2007 Drop 2nd assessment
23 months age, 11 months wool growth

Conducted by:
The Elders Victoria Sire Evaluation Group
under the auspices of the
Victorian Stud Merino Sheepbreeders' Association
& Balmoral P & A Society

under the auspices of

The Australian Merino Sire Evaluation Association

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For further information on this report please contact

Tom Silcock (Chairman)   03 5388 2238   themountaindam@bigpond.com
Tania Rentsch (Manager).   03 5576 5051   manager@balmoralbreeders.com.au

Report authors

Susan Jarvis[1], Sally Martin[2], Andrew Swan[3],

[1]   Elders Victoria CTSE Data Manager
[2]   NSW DPI, PO Box 51, Young 2594
[3]   Animal Genetics and Breeding Unit, University New England, Armidale NSW 2350

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The Elders Victoria Sire Evaluation Group Central Test Sire Evaluation

The Elders Victoria Sire Evaluation Group 2007 drop 2nd Assessment is an accredited Central Test Sire Evaluation (CTSE) site evaluation. It conforms to the requirements of the Australian Merino Sire Evaluation Association (AMSEA).

The Elders Victoria Sire Evaluation Trials aim to evaluate and promote leading sires suited to fine wool production in Western Victoria.

This goal is achieved by informing participants, their clients and interested woolgrowers on events surrounding the trials and in addition to this; produce and distribute annual reports and periodic newsletters. To further promote the evaluation, displays of progeny, data and their fleeces have been on show at the Australian Sheep & Wool Show (1998-2008), Balmoral and Horsham Shows and Hamilton Sheepvention. Participating studs have also provided static displays for viewing during field days. Since April 2000 successful annual Open Days have been held at "The Mountain Dam", "Kerrsville", "White Oaks", "Arundale", "Tuloona" and "Mokanger" to inspect progeny and to discuss the sire evaluation program with interested woolgrowers.

Prior to 1998, there were three previous trials in the Balmoral/Hamilton district, which are recorded in Merino Superior Sires as B95, HT93, HT94. In 1998 a small group of stud breeders met to form what is now known as the Elders Victoria Sire Evaluation Group. The Sire Evaluation Trials commenced in 1998 and there are now 10 progeny drops – 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006 ,2007, 2008 and 2009. All trials are run for a minimum of 2 years.

- 1998 & 1999 drop – Host property "The Mountain Dam", Balmoral
- 2000 & 2002 drop - Host property "Kerrsville", situated between Balmoral and Coleraine
- 2002 & 2003 drop – Host property "White Oaks", Gringegalgona Merino Stud at Balmoral.
- 2004 & 2005 drop – Host property "Arundale", Balmoral
- 2006 & 2007 drop – Host property "Tuloona", Harrow
- 2008 & 2009 drop – Host property "Mokanger", Cavendish

The 1998 drop wethers continued to be assessed for the further 2 years (a total of 4 assessments) outside the Central Test Evaluation program as part of a PIRD (Producer Initiated Research Development) Program. The PIRD results indicated that mature age assessments when averaged across each sire group provide similar information to the two-year trial data and in particular show clear trends and confidence with the second year assessment information.

Planning and direction is developed by the Sire Evaluation Management Committee.

The Management Committee:

Tom Silcock (Chairman) .... 03 5388 2238 ....themountaindam@bigpond.com
Robert Plush .... 03 5575 0208 ....rjplush@bigpond.com
Robert Close .... 03 5570 4238 ....kurrawirra@ansonic.com.au
Stephen Silcock .... 03 5574 3202 ....sjsilcock@bigpond.com
Sue and Hugh Jarvis .... 03 5574 3298 ....suejarvis2@bigpond.com
David Whyte .... 03 5572 2266 ....dwhyte@elders.com.au
Colin Frawley .... 03 5578 6334 ....wirra@ansonic.com.au
Barry Matthews .... 03 5570 1314 ....barjan@eldersnet.com.au
Marion Gibbins .... 03 5574 2360 ....riverglen@aapt.net.au
Mark Bunge .... 03 5579 7224 ....kooringal@clearmail.com.au
Matthew Crawford .... 03 5573 3383 ....woodside2011@bigpond.com
Michael Craig .... 03 5588 1395 ....tuloonapastoral@bigpond.com
Shane Arnold .... 03 5574 2367 ....mokanger2@bigpond.com
Tania Rentsch (Manager) .... 03 5576 5051 ....manager@balmoralbreeders.com.au

Details of host property for 2007 drop progeny – see page 6

The information in this site evaluation report provides a comprehensive assessment of the 2007 2nd Assessment of the sire's progeny performance, both measured and visually assessed traits. The 2nd Assessment was made at 23 months of age with 11 months of wool growth.

Three graphs and a table provide a summary of the results. Eight tables provide the detailed performance information.

Contents

Elders Victoria 2007 drop 2nd Assessment, 23 months of age with 11 months wool growth.

Ram and owner details

Ram code	Breeders flock, Ram number Ram ID[#], Breed[†]	Contact Name, Address Phone, Fax and Email
1 *[€]	**Bindawarra, 01.1143** 5038922001011143, Merino	Richard Alexander, Pattisons Lane Glenthompson VIC 3293 P: 03 5577 8265 F: 03 5577 8256 E: goodwoodmerino@datafast.net.au
2	**Gringegalgona,** 051737 5030972005051737	Stephen Silcock, "Gringegalgona", Vasey, Vic, 3407 P: 03 5574 3202, F: 03 5574 3239 E: sjsilcock@bigpond.com
3	**Kurra-Wirra**, SR 2438/1 5041732004042438, Merino	Robert Close,"Kurra-Wirra", Coleraine, Vic, 3315 P: 03 5570 4238, F: 03 5570 4234 E: kurrawirra@ansonic.com.au
4	**Merinotech Vic,** 051605 5046482005051605, Merino	Hugh & Sue Jarvis, "Aramis", Gatum Vic 3407 P: 03 5574 3298 E: suejarvis2@bigpond.com
5	**One Oak No. 2,** B3046 5038552003003046, Merino	Graham Wells, "One Oak", Jerilderie, NSW, 2716 P:03 5886 1269, F: 03 5886 1792 E: oneoak@bigpond.com
6	**QPLU$,** 047352 504782004147352, Merino	Sue Mortimer, NSW DPI, Trangie NSW 2823 P: 02 6880 8008, F: 02 6888 7201, E: sue.mortimer@dpi.nsw.gov.au
7	**QPLU$,** 047367 5047482004247367, Merino	Sue Mortimer, NSW DPI, Trangie NSW 2823 P: 02 6880 8008, F: 02 6888 7201, E: sue.mortimer@dpi.nsw.gov.au
8	**Roseville Park,** 4.2536 5041662004042536, Merino	Matthew & Cherie Coddington, Roseville Park, Dubbo, NSW, 2830 P: 02 6887 7286, F: 02 6887 7103, E: rpmerinos@gobushmail.com.au
9 [UR]	**Tuloona,** Fine Fella 2128 5092132001002128, Merino	Michael Craig, "Tuloona", Harrow, Vic, 3317 P: 03 5588 1395, F: 03 5588 1394, E: tuloonapastoral@bigpond.com
10	**Windarra,** 03/0078 5043382003030078, Merino	T.A.S. Hanson, "Windarra", Naracoorte, SA, 5271 P: 08 8757 3023, F: 08 8757 3013, E: tomhanson@ozemail.com.au
11 *	**Yalgoo,** 420 5015522001000420, Merino	Grant Nivison, "Yalgoo", Walcha, NSW, 2354 P: 02 6777 2525, F: 02 6777 2875, E: gnivison@bigpond.com.au

* Link ram: Ram 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.*

[UR] Unregistered Flock. Sires bred in an unregistered flock are identified in the table by a UR following the sire's code.

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

€ **Bindawarra, 01.1143** (ram code number 1 in this evaluation) was entered as a link ram by the ram's owner Goodwood (Richard Alexander, Pattisons Lane Glenthompson VIC 3293).

1. **Location**
   - "Tuloona" is located approximately 5 kilometers from the township of Harrow in the Western Districts of Victoria. Average annual rainfall is approximately 575mm.

2. **Selection and mating**
   - Ewes were selected from a random draft of "Tuloona" three year old commercial fine wool ewes.
   - The average adult flock micron at "Tuloona" in 2006 was 17.7 micron.
   - Laparoscopic insemination of 750 ewes, conducted by Brecon Breeders on the 1st - 2nd March 2006.
   - 11 sires were participating in the site evaluation.
   - The ewes were all in condition score above 3.

3. **Pregnancy and lambing**
   - On the 1st May 2007 ultrasound scanning of ewes was carried out ewes by Mark Jenkinson.
   - Ewes were drafted in to two groups: single bearing ewes and ewes bearing multiple lambs, and fed according to Lifetime Wool Production Project guidelines.
   - The conception rate of ewes artificially inseminated was 112%, resulting in 739 lambs expected (239 singles, 238 twins and 8 triplets).
   - On the 25th July 2007 ewes were drenched and vaccinated and drafted into sire groups for lambing.
   - Ewes commenced lambing on the 28th July 2007.
   - Lamb tagging and scoring, including the application of RFID ear tags, was done on 10th August.
   - The lambs were dropped during relatively good lambing conditions, and despite enduring a failed spring, their weaning weights were exceptionally good at over 30.8 kg average.
   - Feeding commenced in October while still on their mothers and continued on until mid July at rates of up to 2.5 kg of lupins and barley per week because of the failed spring.

4. **Weaning and seasonal conditions**
   - On the 3rd September the lambs were marked/mulesed, vaccinated, scored for breach traits.
   - On the 16th November lambs were weaned, 2nd vaccination, 1st summer drench, and body weighed.
   - After a relatively late break in the middle of May the progeny were shorn on the 6th August and unfortunately condition score of the animals had deteriorated to under 2.5.
   - Severe weather off shears hampered their growth. Despite the failed 2008 spring the animals improved their condition score to average around 3 coming into the second year.

5. **First shearing to second shearing**
   - The progeny were given their first summer drench and crutched on the 15th November 2008
   - Feeding commenced in the middle of November and increased to a maintenance ration of 1.5kg of barley per week
   - Condition score over summer and into the autumn was maintained at an average of 2.7 despite the dry dusty conditions. With an earlier break to the season the condition score of the animals was maintained well above 2.7 right through the winter of 2009.
   - Visual classing and mid-side sampling took place on 15th June 2009.
   - The progeny had their second shearing at 23 months of age with 11 months of wool on the 22nd June 2009. They were also body weighed on that day to conclude their involvement in the trial.

5. **Rainfall**

Month	Harrow Rainfall (mm per month) *						
	2004	2005	2006	2007	2008	2009	Average
January	16.6	40.8	34.6	94.0	18.8	8.8	41.0
February	20.2	39.2	24.0	4.0	3.0	12.5	18.1
March	33.0	3.0	15.8	17.6	22.6	14.2	18.4
April	14.4	15.8	45.0	34.4	22.8	26.2	26.5
May	41.4	18.6	38.8	99.2	46.3	38.5	48.9
June	116.4	92.4	8.2	36.2	21.6	48.5	55.0
July	84.6	42.8	57.0	78.6	63.3		65.3
August	97.4	86.0	41.2	34.0	85.2		68.8
September	38.4	48.6	51.1	63.6	34.5		50.4
October	26.2	89.8	5.8	23.9	8.7		36.4
November	58.2	28.6	10.0	62.2	33		39.8
December	45.6	33.4	16.2	51.4	73		36.7
Total	592.4	539.0	347.7	599.1	432.7		505.3

* Sourced from Harrow Post Office

Reported by: Michael Craig (sheep manager)

Evaluation and Management Program

Activity			Date/s	Age (months)	Wool (months)
Selection of ewes			Mid February		
Allocation of ewes for mating and mating			1 - 2 March 2007		
Pregnancy scanning			1st May		
Separated into sire lambing groups			25th July		
Lambing: start – finish			28 July - 7th August		
Lambing mobs boxed to 1 management group			10th August	8 days	
Tagging/pigment scores (age in days)			10th August	8 days	
Marked/mulesed and scored for breech traits			3rd September	32 days	
Weaning (age in days)			16th November	106 days	
Pre assessment (even-up) shearing			Not applicable		
Crutching	•	1st:	20th February 2008	6.5	6.5
	•	2nd:	15th November 2008	15.5	3.5
Fat and eye muscle scanning and body weight			Not applicable	NA	
Fleece sampling	•	1st Assessment:	20th June 2008	10.5	10.5
	•	2nd Assessment:		23	10.5
Staple length assessment	•	1st Assessment:	20th June 2008	10.5	10.5
	•	2nd Assessment:		23	10.5
Classer's Grade	•	1st Assessment:	20th June 2008	10.5	10.5
	•	2nd Assessment:		23	10.5
Pre shearing scoring	•	1st Assessment:	20th June 2008	10.5	10.5
	•	2nd Assessment:		23	10.5
Assessment shearing	•	1st Assessment:	6th August 2008	12	12
	•	2nd Assessment:		23	11
Post shearing scoring	•	1st Assessment:	Not applicable	NA	NA
	•	2nd Assessment:	Not applicable	NA	NA
Body weigh	•	weaning	16th November	3	
	•	1st Assessment:	6th August 2008	12	
	•	2nd Assessment:		23	
Worm egg count sampling	•	1st Assessment:	30th July2008	11.5	
	•	2nd Assessment:	Not applicable		
Sire's Progeny Group Evenness assessment			Not applicable		
Vaccination			Marking, weaning, 1st crutching and 1st shearing		
Drench			Weaning, following WEC sampling		
Supplementary feeding: start - finish			November to July 2008, November 2008 to June 2009		
Field day or public display of sheep			■ Progeny on display at Balmoral Show – 15th March 2008, 21st March 2009 ■ Progeny on display at Open day – 18th April 2008, 20th February 2009		

Visual tait assessment

<u>1st Assessment</u>
Classer's Grade: Mr Glendon Hancock, Elders Ltd
Trait Scores: Mr Glendon Hancock, Elders Ltd scored all visually assessed traits (Tables 3a, b, c and d) apart from pigmentation and breech traits. Mr Tom Silcock scored pigmentation and breech traits.

<u>2nd Assessment</u>
Classer's Grade: Mr Glendon Hancock, Elders Ltd.
Trait Scores: Mr Glendon Hancock, Elders Ltd.

Site breeding objective used to assess the Classer's Grades

The breeding objective used by the classer when selecting the Classers Tops, Flock and Cull Grades is described below. The breeding objective for both measured and visual assessed traits that is described below was developed by the site committee in consultation with the classer prior to the grading.

Breeding objective
The goal is to select sheep that are well grown, with sound conformation and carrying heavy fine wooled fleeces of good character, colour and nourishment.

Host Property for 2007 drop progeny

The "Tuloona" property is owned by the Craig family and managed by son Michael and his wife Jane. The property is located 5km south of Harrow and consists of sandy loam soils over heavy clays on undulating red gum country. The average rainfall was 600mm, although since 2002 the rainfall has averaged only 515mm. Progeny are managed under strict commercial conditions.

Figure 1. Combined measured traits and visual trait performance

Summary graph: visual and measured performance

Each sire that had 20 or more progeny assessed at 2nd Assessment is located on the graph. The graph describes performance for combined measured traits and combined visual assessment.

Figure 1 is combined measured traits based on an AMSEA Merino 7% index (that is, equal emphasis on fleece weight and fibre diameter with enough emphasis on body weight to provide a moderate increase in this trait). Visual trait performance is a combination of Classer's Grade performance (Tops and Culls). More information is found in "Calculation of combined performance" (page 21).

Sires that are above average performers for combined measured traits and Classer's Grade are located in the top right hand quarter.
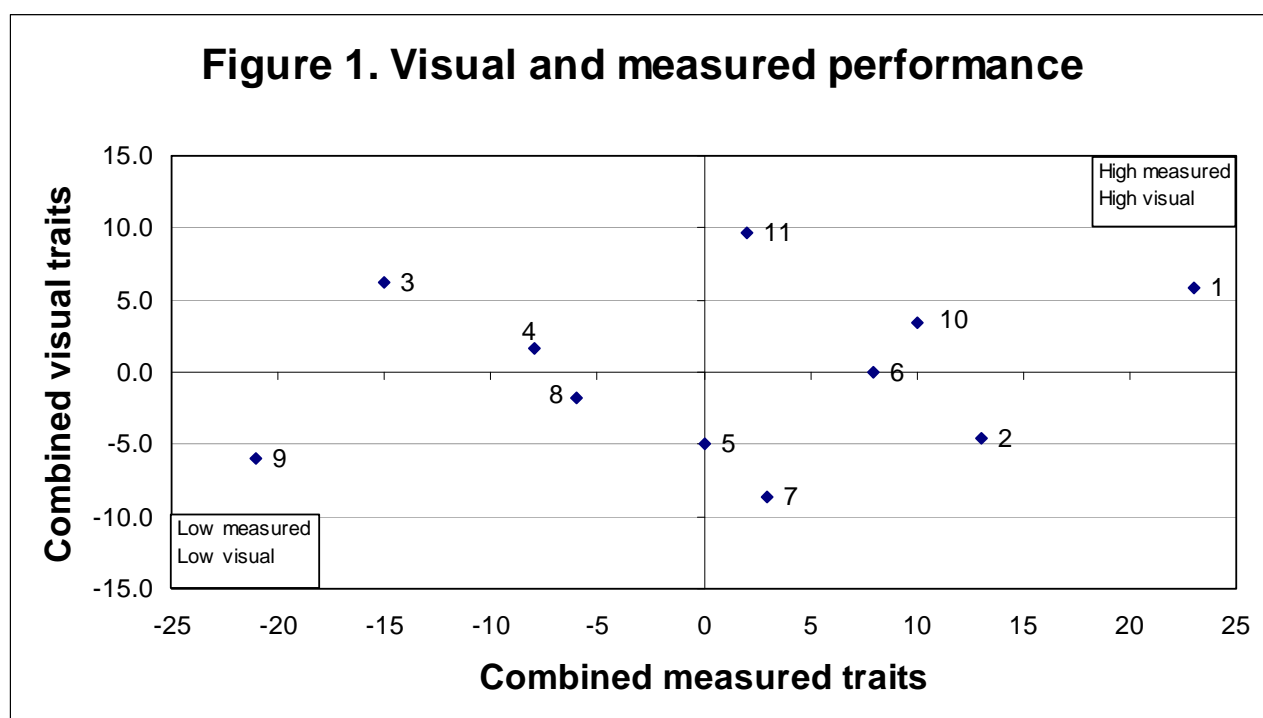
Sires reported in Figure 1 above	
Ram code	Breeders flock, Ram number
1 *	Bindawarra, 01.1143
2	Gringegalgona, 051737
3	Kurra-Wirra, SR2438/1
4	Merinotech VIC, 051605
5	One Oak No. 2, B3046
6	QPLU$, 047352
7	QPLU$, 047367
8	Roseville Park, 4.2536
9 UR	Tuloona, Fine Fella 2128
10	Windarra, 03/0078
11 *	Yalgoo, 420

The highest performing 2 sires for each trait (i.e., trait leaders) are highlight by shading, e.g., in the table below see Sire 1 has 14% above average for Tops%. Each sire is listed for Classer's Grade and the same three indexes at all site evaluations. An additional index (Fine 20% +SS) 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' on page 21 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.

- **Merino 14% +SS** High emphasis on fibre diameter and low emphasis on fleece weight plus moderate emphasis on live weight and staple strength.
- **Fine 10% +SS**   Moderate emphasis on fleece weight and fibre diameter plus moderate emphasis on staple strength.
- **Dual Purpose 7%** Moderate emphasis on fleece weight and fibre diameter plus high emphasis on live weight.
- **Fine 20% +SS**   High emphasis on fibre diameter and staple strength plus adequate emphasis on other traits to be maintained except a reduction in NLW.

Ram code	Breeder's flock, ram number	AMSEA Index Values				Classer's Grade			
				Dual		Tops % (dev)		Culls % (dev)	
		Merino	*Fine*	*Purpose*	*Fine*				
		14% + SS	*10% + SS*	*7%*	*20% + SS*	Y^	A	Y	A
1*	Bindawarra, 1143	121	127	121	122	1	16	-4	-13
2	Gringegalgona, 051737	110	113	114	109	-11	-10	5	13
3	Kurra-Wirra, SR2438/1	83	80	90	80	21	24	-16	-7
4	Merinotech VIC, 051605	105	98	98	112	12	-1	-7	-9
5	One Oak No. 2, B3046	100	102	94	101	-17	-18	5	7
6	QPLU$, 047352	95	102	103	89	-17	-7	16	-7
7	QPLU$, 047367	93	97	104	87	-12	-18	3	25
8	Roseville Park, 4.2536	84	88	90	81	11	1	2	10
9	Tuloona, Fine Fella 2128	89	82	82	94	-16	-22	12	8
10	Windarra, 03/0078	112	111	110	111	14	8	-13	-9
11*	Yalgoo, 420	117	111	102	124	14	28	-3	-20
	Average performance	100	100	100	100	42	31	16	25

* Link ram: Ram evaluated to provide links between site evaluations and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

^ 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. Rams that are above average for fleece weight and below average fibre diameter are located in the <u>top left hand quarter</u>
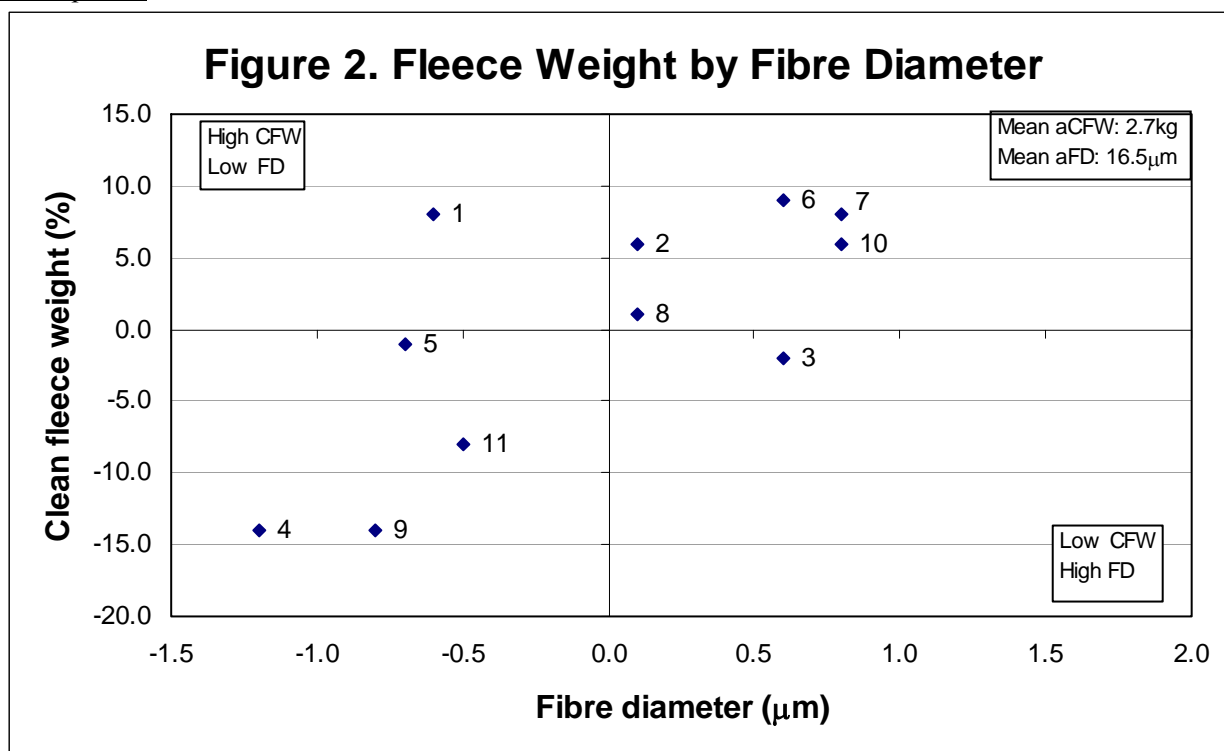

Figure 3. Classers Tops by Cull Grade
The graph describes performance for Classer's Tops Grade on the side axis and Cull Grade on the bottom axis. Rams that have above average Tops and below average Culls are in the <u>top left hand quarter</u>.
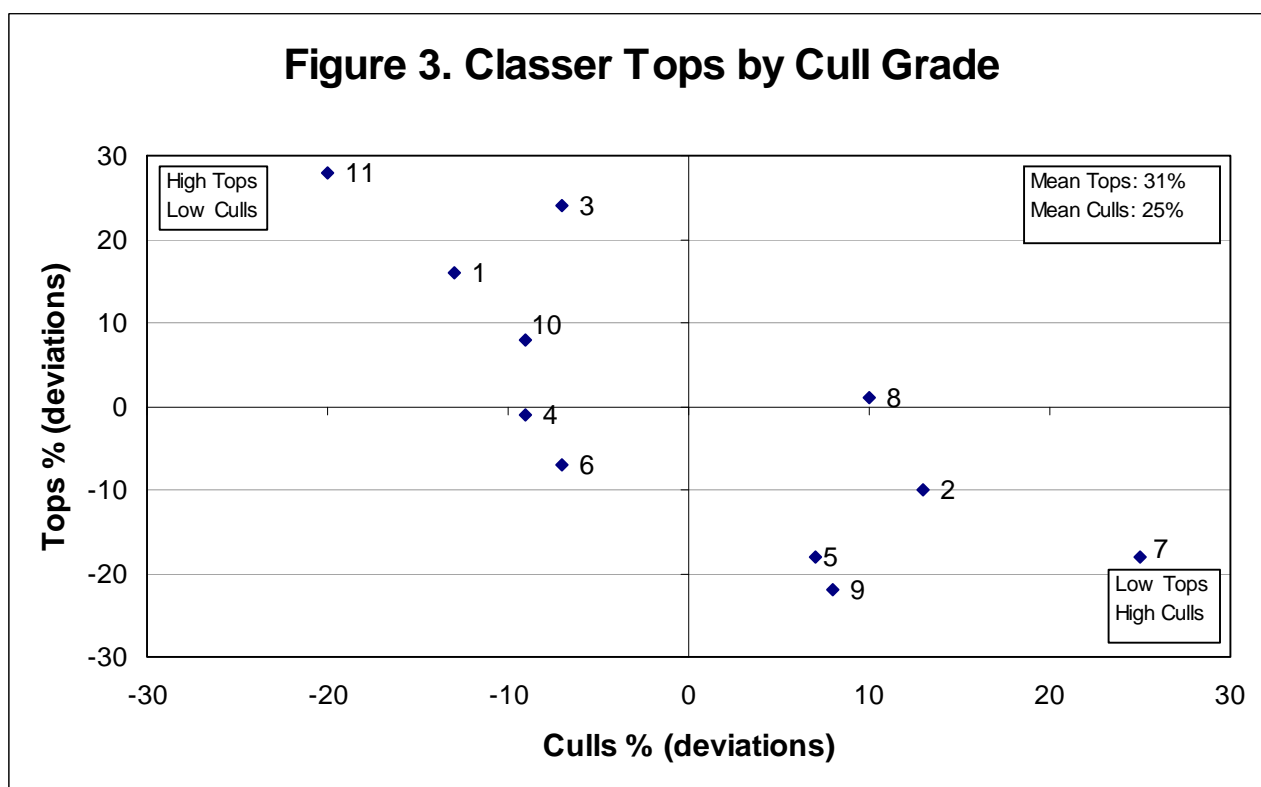
Measured trait performance and Classer's Grade – Tables 1 and 2 – pages 11 and 12

Ram code:	Allows a ram to be located on the summary graphs and some tables.
Ram name:	Identity of the breeder's flock and the ram's number or name.
No. of progeny:	The number of progeny a ram 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 rams 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 rams (in this case based on the performance of their progeny). A ram's progeny will express half of their ram's FBV. FBVs do not necessarily reflect the ram'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 ram's progeny)

Age at assessment:	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 (page 6). The percentage deviation from the average of Tops and Culls is presented in this report.

Table 1 – Major measured traits and Classer's Grades

Ram code	Breeder's flock, ram number	Number of progeny	Flock Breeding Values (deviations)								Classer's Grade[1]			
			GFW %		CFW %		FD mm		WT *kg*		Tops % (dev)		Culls % (dev)	
			Y^	A	Y	A	Y	A	Y	A	Y	A	Y	A
1*	Bindawarra, 1143	57	1	6	3	8	-0.7	-0.6	0.6	1.0	1	16	-4	-13
2	Gringegalgona, 051737	58	1	5	1	6	-0.2	0.1	2.1	1.9	-11	-10	5	13
3	Kurra-Wirra, SR2438/1	24	0	0	-1	-2	0.5	0.6	0	0.5	21	24	-16	-7
4	Merinotech VIC, 051605	60	-9	-12	-13	-14	-0.8	-1.2	1.4	1.6	12	-1	-7	-9
5	One Oak No. 2, B3046	48	0	-1	1	-1	-0.2	-0.7	-1.8	-3.0	-17	-18	5	7
6	QPLU$, 047352	42	12	8	13	9	0.5	0.6	-0.7	-0.9	-17	-7	16	-7
7	QPLU$, 047367	59	7	7	9	8	0.6	0.8	0.5	0.0	-12	-18	3	25
8	Roseville Park, 4.2536	61	5	1	8	1	0.4	0.1	-1.3	-1.3	11	1	2	10
9	Tuloona, Fine Fella 2128	48	-11	-11	-15	-14	-0.6	-0.8	0	0.1	-16	-22	12	8
10	Windarra, 03/0078	55	3	4	4	6	0.6	0.8	0.8	0.9	14	8	-13	-9
11*	Yalgoo, 420	65	-7	-8	-8	-8	-0.4	-0.5	-0.4	0.3	14	28	-3	-20
	Average performance	52	3.4 kg	4.5 kg	2.2 kg	2.7 kg	16.1 μm	16.5 μm	23.8 kg	33.6 kg	42 %	31 %	16 %	25 %

*   Link ram: Ram evaluated to provide links between site evaluations and sites so that the all site results can be combined into a single report, e.g., *Merino Superior Sires.*

^   Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older).

UR   Unregistered Flock. Rams bred in an unregistered flock are identified in the table by a UR following the ram's code.

1   Classer's Grade is expressed as the percentage deviation of average Tops% and Culls%

■   Information on how to use the results in the table above can be found on page 10.

Tables 2 – Other measured traits

Ram code	Breeder's flock, ram number	Number of progeny	Flock Breeding Values (deviations)												WEC %
			FDCV %		SL mm		SS N/ktex		Curv deg/mm		Fat mm		EMD mm		
			Y^	A	Y	A	Y	A	Y	A	Y	H	Y	H	Y
1*	Bindawarra, 1143	57	-0.3	-0.7	2.0	6.3	1.4	2.3	-1.3	-2.9					9
2	Gringegalgona, 051737	58	-0.6	-0.5	-6.2	-3.8	1.1	0.5	1.6	-1.0					40
3	Kurra-Wirra, SR2438/1	24	1.6	1.4	4.8	5.7	-1.6	-1.2	0.2	0.1					-39
4	Merinotech VIC, 051605	60	-2.2	-1.7	0.5	-1.5	0.1	-0.6	7.3	8.1					-30
5	One Oak No. 2, B3046	48	1.5	2.1	-0.1	-4.0	-1.2	-3.9	-4.9	-3.7					60
6	QPLU$, 047352	42	1.0	0.6	6.8	6.8	-3.5	-1.6	-7.9	-7.4					-20
7	QPLU$, 047367	59	1.3	1.3	3.3	2.8	-1.7	-1.7	-5.0	-6.0					-26
8	Roseville Park, 4.2536	61	2.7	2.4	2.9	-0.7	-4.5	-5.0	-7.4	-4.2					31
9	Tuloona, Fine Fella 2128	48	-0.3	-0.1	-9.6	-10.9	-2.6	-3.4	13.8	15.3					54
10	Windarra, 03/0078	55	-1.0	-1.2	-1.8	0.6	6.3	7.8	1.3	0.7					-10
11*	Yalgoo, 420	65	-2.8	-2.9	-1.0	-1.1	5.6	6.7	0.9	1.5					-19
	Average performance	52	21.2	19.6	71.9	74.7	23.1	23.2	105.8	105.8					
			%		mm		N/ktex		deg/mm						%

* Link ram: Ram evaluated to provide links between site evaluations and sites so that the all evaluations can be combined into one report, e.g., *Merino Superior Sires.*

^ Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older)

■ Information on how to use the results in the table above can be found on page 10.

Scored trait performance – Tables 3a to 3e – pages 14 to 17

The following description of trait scores is a summary of the detailed word and diagrammatical description of these scores in the Visual Sheep Scores booklet (free on application to AWI 02 92995155).

A deviation from the average trait score for all progeny is reported as well as the percentage of the ram'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 <5%) to **5** (80 to 100% of staple).	
■ Staple weathering:	The deterioration due to light and water from **1** (least, <5% of staple) to **5** (most, 30 to 50%) reflect the depth and degree of deterioration.	
■ Staple structure:	The size and diameter of each staple from **1** (<5mm) to **5** (30 to 50 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 good) to **5** (very poor).	
■ Body wrinkle:	The degree of body wrinkle from **1** (no wrinkle) to **5** (extensive wrinkle).	
■ Jaw:	Under- or over-shot lower jaw (and teeth) relative to the top jaw. Three scores **1** (very well aligned), **3** (marginally under or over) and **5** (heavily under or over).	
■ Back/Shoulder:	Conformation of the back and shoulder from **1** (very good) to **5** (very poor).	
■ Fibre pigmentation:	The percentage of dark fibres on any part of the sheep from **1** (0 pigmented fibres at any site) to **5** (76 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** (76 to 100% pigmented area on one or more bare skin sites, **and/or** 76 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 kind legs from **1** (nil) to **5** (extensive).	
■ Dag	Degree of dag adhering to the breech and legs from **1** (nil) to **5** (extensive).	
■ Injury/Disease:	Non-genetic effects due to injury, misadventure or infection – Yes or No.	

Table 3a – Visual trait assessments – Wool quality

Traits are reported as a deviation (Dev) from the average (Av) trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported. For the majority of breeder's objectives a negative deviation would be considered favorable and the larger the deviation the better.

Ram code	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
1*	0.0	81	11	6	2	0	0.1	8	81	11	0	0	-0.1	26	47	21	6	0	-0.1	6	83	9	2	0
2	0.4	69	10	8	10	3	0.2	18	67	2	13	0	-0.5	44	44	12	0	0	-0.1	3	87	10	0	0
3	-0.1	91	4	0	5	0	-0.4	50	45	5	0	0	-0.3	36	45	14	5	0	-0.2	5	86	9	0	0
4	-0.1	87	7	2	4	0	0.0	17	69	14	0	0	0.3	19	33	35	13	0	0.1	2	70	26	2	0
5	0.2	81	3	8	0	8	-0.1	22	73	5	0	0	0.1	13	46	41	0	0	-0.1	0	92	8	0	0
6	0.3	61	26	8	5	0	0.3	6	71	18	5	0	-0.2	32	39	26	3	0	0.0	0	84	16	0	0
7	0.1	75	16	4	5	0	0.7	0	55	31	13	1	0.4	6	40	47	7	0	0.3	0	55	38	7	0
8	-0.2	93	3	4	0	0	-0.2	24	76	0	0	0	-0.1	27	49	20	4	0	0.1	0	71	29	0	0
9	-0.1	86	7	5	0	2	0.1	16	70	11	3	0	0.6	3	36	43	16	2	0.2	0	61	34	5	0
10	-0.1	86	10	4	0	0	-0.3	35	63	2	0	0	0.0	11	67	22	0	0	-0.2	0	96	4	0	0
11*	-0.2	94	4	2	0	0	-0.3	45	49	6	0	0	-0.3	40	40	20	0	0	0.0	4	75	19	2	0
Av	1.3	82	9	5	3	1	1.9	22	65	10	3	0	2.2	23	44	28	5	0	2.2	2	78	18	2	0

* Link ram: Ram 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.*

■ Information on how to use the results in the table above can be found on page 13.

Table 3b – Visual trait assessments – Wool quality and pigmentation

Traits are reported as a deviation (Dev) from the average (Av) trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported. For the majority of breeder's objectives a negative deviation would be considered favorable and the larger the deviation the better.

Four pigmentation traits are reported as described on page 13. 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 (Black) and Random spot (Spot).

Ram code	Wool Quality												Pigmentation													Black	Spot
	Staple Weathering						Staple Structure						Fibre pigmentation						Non-fibre pigmentation							
	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
1*	0.0	5	89	6	0	0	-0.2	57	34	9	0	0	0.0	100	0	0	0	0	-0.3	32	58	10	0	0	0	0
2	-0.1	2	95	3	0	0	-0.1	54	28	15	3	0	0.0	98	2	0	0	0	0.1	7	66	24	3	0	0	0
3	-0.1	5	95	0	0	0	0.1	55	18	18	9	0	0.0	100	0	0	0	0	-0.5	46	46	4	4	0	0	8
4	0.0	2	91	7	0	0	0.1	39	41	19	1	0	0.0	97	3	0	0	0	0	25	42	30	3	0	0	2
5	0.0	0	97	3	0	0	0.0	35	54	11	0	0	0.0	95	5	0	0	0	0.2	8	64	21	7	0	0	0
6	0.0	0	92	8	0	0	0.1	45	34	13	8	0	0.0	100	0	0	0	0	0.1	7	64	29	0	0	0	0
7	0.2	0	75	24	1	0	0.3	24	58	9	9	0	0.0	96	2	0	2	0	-0.2	19	65	16	0	0	0	2
8	0.1	0	87	13	0	0	-0.3	62	33	5	0	0	0.0	98	0	2	0	0	-0.2	25	61	14	0	0	0	0
9	0.1	0	86	11	3	0	0.5	11	59	20	10	0	0.0	100	0	0	0	0	-0.3	25	67	8	0	0	0	0
10	0.0	2	94	4	0	0	-0.1	45	45	10	0	0	0.0	96	2	2	0	0	0.7	4	25	58	11	2	0	2
11*	0.0	3	89	8	0	0	-0.3	55	42	3	0	0	0.1	95	1	2	0	2	0.4	11	45	29	7	8	0	3
Av	2.1	2	90	8	0	0	1.8	44	41	12	3	0	1.0	98.0	2	0	0	0	2.1	19	55	22	3	1	0	0

* Link ram: Ram 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*.

■ Information on how to use the results in the table above can be found on page 13.

Table 3c – Visual trait assessments – Conformation

Traits are reported as a deviation (Dev) from the average (Av) trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported. For the majority of breeder's objectives a negative deviation would be considered favorable 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.

| | Conformation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ram | Jaw | | | | | | Legs and Feet | | | | | | Shoulder and Back | | | | | | Face Cover | | | | | | Body Wrinkle | | | | | |
Code	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
1*	0.0	100	0	0	0	0	-0.2	5	70	21	4	0	0.0	6	77	15	2	0	-0.4	0	32	62	6	0	-0.2	43	55	0	2	0
2	0.0	95	5	0	0	0	0.2	0	56	28	10	6	0.4	0	64	21	15	0	-0.1	0	15	69	13	3	0.1	28	54	15	3	0
3	0.0	100	0	0	0	0	-0.5	13	73	14	0	0	-0.2	14	77	9	0	0	0.0	0	14	64	18	4	0.2	18	68	9	5	0
4	0.0	100	0	0	0	0	-0.3	6	76	15	3	0	-0.2	20	69	9	2	0	-0.5	0	41	56	3	0	-0.2	48	43	9	0	0
5	0.0	97	3	0	0	0	0.1	0	59	27	11	3	0.0	14	62	22	2	0	0.3	0	6	51	35	8	0.1	22	65	13	0	0
6	0.0	97	3	0	0	0	0.1	0	55	37	5	3	0.1	3	76	21	0	0	0.0	0	8	71	21	0	0.1	29	58	13	0	0
7	0.0	98	2	0	0	0	0.3	0	47	33	18	2	0.0	5	80	15	0	0	0.6	0	4	40	36	20	0.0	38	51	9	2	0
8	0.1	84	16	0	0	0	0.3	0	53	24	13	10	0.1	4	76	13	4	3	0.0	0	22	53	18	7	-0.1	31	67	2	0	0
9	0.0	95	5	0	0	0	0.3	2	48	30	11	9	0.0	7	77	14	2	0	0.1	0	18	43	32	7	0.1	20	73	7	0	0
10	0.0	98	2	0	0	0	-0.1	4	53	39	4	0	-0.1	6	84	10	0	0	0.3	0	2	57	35	6	0.1	24	67	9	0	0
11*	0.0	100	0	0	0	0	-0.1	8	58	25	9	0	-0.2	26	62	9	3	0	-0.4	0	34	62	4	0	-0.3	53	45	2	0	0
Av	1.0	97	3	0	0	0	2.5	3	59	27	8	3	2.1	10	73	14	3	0	3.1	0	18	57	20	5	1.8	32	59	8	1	0

* Link ram: Ram 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*.

■ Information on how to use the results in the table above can be found on page 13.

Traits are reported as a deviation (Dev) from the average (Av) trait score for all progeny. The percentage of a ram's progeny assessed for each score is also reported. For the majority of breeder's objectives a negative deviation would be considered favorable and the larger the deviation the better.

Ram Code	Breech Visual Traits																							
	Breech Cover						Crutch Cover						Breech Wrinkle						Dag					
	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5	Dev	1	2	3	4	5
1*	-0.2	0	4	18	58	20							0.1	2	12	84	0	2						
3	0.0	0	0	8	67	25							0.0	2	23	68	5	2						
2	0.1	0	0	16	38	46							-0.1	0	29	71	0	0						
4	-0.1	0	4	18	53	25							0.0	0	20	80	0	0						
5	0.4	0	0	2	39	59							0.0	0	20	76	4	0						
6	0.1	0	5	8	45	42							-0.1	0	32	66	2	0						
7	0.1	0	4	5	50	41							0.0	0	21	78	1	0						
8	-0.1	0	3	16	55	26							0.1	0	17	78	5	0						
9	0.2	0	3	10	33	54							0.1	0	10	85	5	0						
10	-0.3	0	2	21	64	13							0.0	1	17	80	2	0						
11*	-0.4	0	8	19	58	15							-0.1	3	24	73	0	0						
Av	4.1	0	3	13	51	33							2.8	2	20	76	2	0						

* Link ram: Ram 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.*

■ Information on how to use the results in the table above can be found on page 13.

Table 4 – Ram averages for measured traits

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

Ram code	Ram name	Number of progeny	GFW %		CFW %		FD mm		WT kg		FDCV %		Curv deg/mm		SL mm		SS N/ktex	
			Y^	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y	A
1*	Bindawarra, 1143	57	-0.1	0.2	0.0	0.2	-0.4	-0.4	0.3	-0.1	-0.1	-0.6	-1.1	-1.4	0.7	4.8	1.5	1.7
2	Gringegalgona, 051737	58	0.0	0.3	0.0	0.2	-0.2	0.3	0.8	1.0	-0.5	-0.5	1.1	-1.0	-4.8	-2.9	0.9	-0.9
3	Kurra-Wirra, SR2438/1	24	0.1	0.0	0.0	-0.1	0.2	0.4	-0.2	0.2	0.7	1.1	1.8	0.8	3.6	4.3	-0.9	0.0
4	Merinotech VIC, 051605	60	-0.1	-0.3	-0.2	-0.3	-0.3	-0.6	0.7	0.9	-1.3	-0.9	3.9	4.2	0.4	-1.0	-0.5	-1.5
5	One Oak No. 2, B3046	48	0.0	-0.1	0.0	0.0	0.0	-0.5	-0.9	-1.1	0.8	1.3	-2.6	-3.0	0.3	-2.6	1.1	-2.9
6	QPLU$, 047352	42	0.3	0.2	0.2	0.1	0.3	0.3	-0.3	-0.4	0.5	0.1	-4.6	-4.1	4.4	3.5	-3.9	0.4
7	QPLU$, 047367	59	0.2	0.2	0.2	0.1	0.2	0.6	0.4	-0.3	0.7	0.8	-2.9	-3.7	2.4	0.8	-1.3	-0.1
8	Roseville Park, 4.2536	61	0.0	0.0	0.1	0.0	0.3	0.1	-0.5	-0.1	1.9	1.5	-5.4	-2.5	2.6	-1.0	-1.9	-3.1
9	Tuloona, Fine Fella 2128	48	-0.3	-0.3	-0.3	-0.3	-0.1	-0.5	-0.5	-0.3	-0.3	-0.2	9.4	9.3	-6.4	-6.3	-2.1	-4.0
10	Windarra, 03/0078	55	-0.1	0.1	0.1	0.2	0.3	0.4	0.3	0.0	-0.7	-0.8	0.8	0.8	-2.1	1.1	4.2	5.8
11*	Yalgoo, 420	65	-0.2	-0.2	-0.2	-0.1	-0.2	-0.3	-0.2	0.2	-1.8	-1.9	-0.4	0.7	-1.1	-0.7	2.9	4.6
	Average performance	52	3.4	4.5	2.2	2.7	16.1	16.5	23.8	33.6	21.2	19.6	105.8	105.8	71.9	74.7	23.1	23.2
			Kg		kg		mm		kg		%		deg/mm		mm		N/ktex	

*   Link ram: Ram 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.*

^   Y = Yearling (300 to 400 days); H = Hogget (400 to 540 days); A = Adult (540 days and older).

Table 6 – Fleece value

An AWEX-ID was allocated to each fleece at shearing time. This information along with fleece weight, fibre diameter, yield, staple length and staple strength has been used to calculate an average value per fleece and then averaged per ram group. Three year average wool prices for the Northern Wool Selling Region were used to calculate the fleece values.

Ram code	Breeder's flock, ram number	Price cents/kg (clean)	Wool value ($/head)
1	Bindawarra, 01.1143	1370	$36.78
2	Gringegalgona, 051737	1266	$33.66
3	Kurra-Wirra, SR2438/1	1247	$31.85
4	Merinotech VIC, 051605	1463	$35.12
5	One Oak No. 2, B3046	1314	$33.70
6	QPLU$, 047352	1247	$33.59
7	QPLU$, 047367	1222	$32.78
8	Roseville Park, 4.2536	1256	$32.57
9	Tuloona, Fine Fella 2128	1303	$31.20
10	Windarra, 03/0078	1262	$33.52
11	Yalgoo, 420	1352	$33.51

* Link ram: Ram evaluated by the site to provide links between years and sites so that the all site results can be combined into a single report – *Merino Superior Sires*.

Index Options – page 8

Breeding Objective index options provide the relative value of rams 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 ram 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 ram 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 Fine 10% +SS; Merino 14% +SS; and Dual Purpose 7%. 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 14% contribution by NLW in the Dual Purpose 7% index is not effectively applied by the index calculation.

This report has added an additional index – the AMSEA Fine 20% +SS.
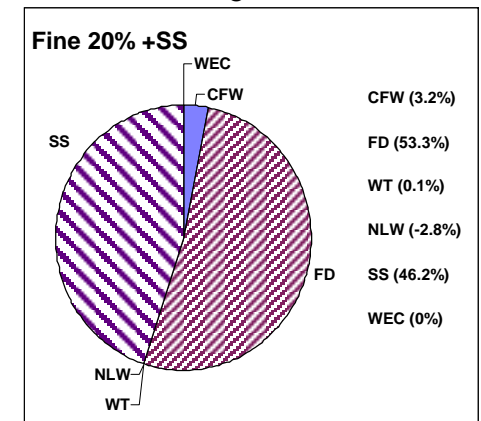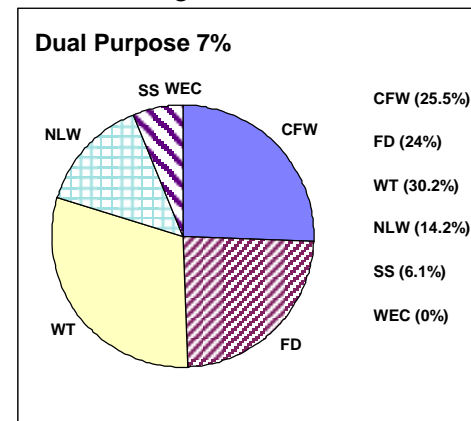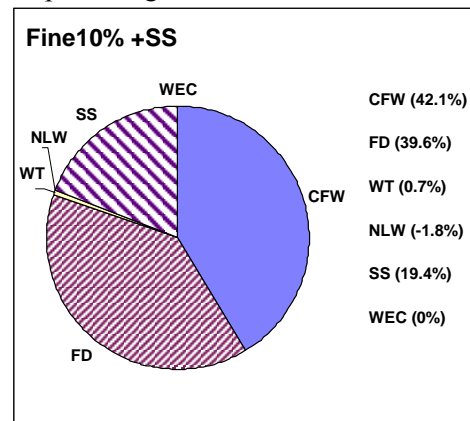
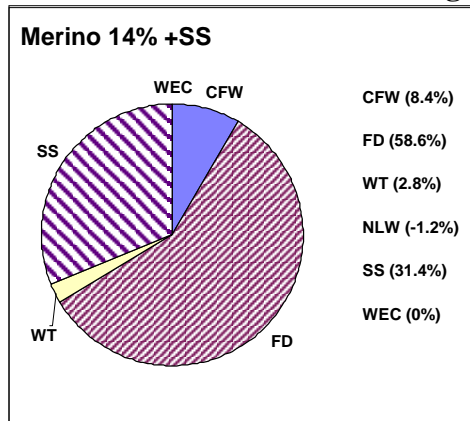## Index *production system* and breeding objectives

AMSEA **Fine 10%** +SS (F10% +SS)	*Fine wool Merino self-replacing production system* with moderate emphasis on fleece weight and fibre diameter (10% Micron Premium) plus moderate emphasis on staple strength and maintain performance on other traits.
AMSEA **Merino 14%** +SS (M14% +SS)	*Medium wool Merino self-replacing production system* with high emphasis on fibre diameter and low emphasis on fleece weight (14% Micron Premium) plus moderate emphasis on live weight and staple strength with maintain performance on other traits.
AMSEA **Dual Purpose 7%** (DP7%)	*Medium wool Merino self-replacing production system (in conjunction with 25% of ewes in terminal lamb production)* with moderate emphasis on fleece weight and fibre diameter (7% Micron Premium) plus high emphasis on live weight and maintain performance on other traits.
AMSEA **Fine 20%** +SS (F20% +SS)	*Fine wool Merino self-replacing production system* with high emphasis on fibre diameter (20% Micron Premium) and staple strength. There is adequate emphasis on other traits to maintain performance except a moderate reduction in reproduction (number lambs weaned - NLW).

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

Merino 14% +SS

CFW (8.4%)
FD (58.6%)
WT (2.8%)
NLW (-1.2%)
SS (31.4%)
WEC (0%)

Fine10% +SS

CFW (42.1%)
FD (39.6%)
WT (0.7%)
NLW (-1.8%)
SS (19.4%)
WEC (0%)

Dual Purpose 7%

CFW (25.5%)
FD (24%)
WT (30.2%)
NLW (14.2%)
SS (6.1%)
WEC (0%)

Fine 20% +SS

CFW (3.2%)
FD (53.3%)
WT (0.1%)
NLW (-2.8%)
SS (46.2%)
WEC (0%)

Accuracy of Flock Breeding Values

Flock Breeding Values (FBVs) are reported by Sheep Genetics Australia (SGA). FBVs express the expected performance of progeny of a ram relative to another ram in the evaluation when mated to the same standard of ewes. FBVs improve the accuracy of ram results because they account for the association between traits, adjustment for birth effects and the number of progeny a ram has in the analysis.

True Breeding Values would be achieved if the number of progeny evaluated for each ram 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 rams 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 ram's progeny.

Link rams

Link rams provide the 'genetic link' between CTSE sites located across Australia to allow all rams entered in these site evaluations to have their performance reported relative to each other in *Merino Superior Sires*. *Merino Superior Sires* reports rams from across all effectively linked CTSE sites and across all evaluations at these sites. Link rams are therefore a vital component of the Central Test Sire Evaluation.

To be used as a link a ram 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 rams which can provide a wider perspective of the elite rams available across many flocks in Australia and New Zealand.

Combined measured trait and combined visual trait performance

Combined measured trait performance is calculated as (AMSEA Merino 7% index – 100). The AMSEA Merino 7% index places equal and high emphasis on both fleece weight and fibre diameter, moderate emphasis on body weight and adequate emphasis on other measured traits to allow them to be maintained. Due to the general nature of this index it is useful to be used to report the graphical summary of all traits. Breeders with significantly different objectives should take this into account when considering this graphical summary.

Combined visual trait performance is calculated as:
(Classer's Grade Tops% – Culls%)/5, expressed as a deviation from (average Tops% – average Culls%)/5.

Example

Ram's performance:
- AMSEA Merino 7% index value $= 119.7$
- Tops% $= 25.5$ (average Tops% $= 25.1$)
- Culls% $= 17.6$ (average Culls% $= 16.4$)

- Combined Measured $= 119.7.0 - 100 = 19.7$
- Combined Visual $= ((25.5 - 17.6)/5) - ((25.1 - 16.4)/5)$
  $= 7.9/5 - 8.7/5 = 1.58 - 1.74$
  $= -0.16$

2007 Drop 2nd Assessment

23 months age, 11 months wool growth

Balmoral Breeders