New England Merino Sire Evaluation Association

Central Test Sire Evaluation

2004 drop 1st and 2nd Evaluation

Conducted by

NEW ENGLAND MERINO SIRE EVALUATION ASSOCIATION

under the auspices of

The Australian Merino Sire Evaluation Association

with support from

and managed by

UNE Rural Properties

January 2007

Foreword

New England Merino Sire Evaluation Association - Central Test Sire Evaluation

The New England Merino Sire Evaluation is an accredited Central Test Sire Evaluation (CTSE) site. It conforms to the requirements of the Australian Merino Sire Evaluation Association (AMSEA). A sub-committee of the New England Merino Sire Evaluation Association run the New England Merino Sire Evaluation site. They are listed in the table below.

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As a result of meetings in late 1989, a group was formed to conduct Merino Sire Evaluation in the New England district of NSW. In December 1992, the New England Merino Sire Evaluation Association was formed.

The first programs of insemination were conducted at 'Mirani' near Walcha, NSW in April 1990 and 1991. In 1992 and 1993 'Gostwyck Station' made available 800 fine wool ewes for the progeny tests, followed by 'Birrahlee' in 1994 and 1995 and then 'Deeargee' in 1996. CSIRO Chiswick hosted the Sire Evaluation program form 1997 to 2003 inclusive. In 2004 the program moved to the University of New England Kirby property. The program has operated with assistance from CSIRO Livestock Industries, NSW DPI and University of New South Wales.

Each year, following the tagging of lambs at around two weeks of age, the ewes and their lambs are moved from their sire lambing plots and boxed as one group. The full drop of each sires' ewe and wether lambs are measured and visually assessed in the spring at 12 months of age in 12 months wool growth and again 12 months later. This booklet reports the results of the evaluation of the 2004 drop progeny only as there was not enough entrants to enable a 2005 drop.

The Chairperson:
Jock McLaren (02) 6777 5881

Site Committee

Name	Phone	Position on committee
Jock McLaren	02 6777 5881	Chairperson
Andrew Burgess	02 6777 2102	Vice Chairperson
Milton Curkpatrick	02 6773 2648	Site Manager
Andrew Swan	02 6773 3209	Data Analysis
Michael Lollback	02 6763 1100	Chief Classer
Olivia Fulloon	02 6775 1217	Administration/Data Management
Katrina Bloomfield	02 6777 9189	
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January 2007

2004 drop 2nd Evaluation New England Merino Sire Evaluation

The information in this site report provides a comprehensive assessment of the New England Sire Evaluation 2004 drop 1st and 2nd evaluation sire's progeny performance, both measured and visually assessed. Three graphics provide a summary of the results and five tables provide the detailed performance information for the standard sire evaluation analysis. Additional measurements have been taken to give an average production value.

This report provides the results from the 2004 drop, 1st and 2nd evaluation, progeny age in months and age of wool growth in months.

Contents

2004 drop 1st and 2nd Evaluations

New England Merino Sire Evaluation 2004 drop 1st and 2nd Evaluations:
1st Evaluation: Age - 12 months Wool growth - 12 months
2nd Evaluation: Age – 24 months Wool growth- 12 months

Sire and owner details

Sire code	Sire name Sire ID #	Contact Name, Address Phone and Fax Number
1	**Grindon 01 0067** 5044552001010078	RF & EA Ritson grindon@mns.net.au RMB 150, Boyup Brook WA 6244 Ph: (08) 9765 3053 Fax: (08) 9765 3006
2	**Havilah Nth 010078** 5039342001200G867	AJ & CJ White ajcjw@winsoft.net.au Welshville, Stoney Creek Rd, Mudgee NSW 2850 Ph: (02) 6373 5265 Fax: (02) 6373 5400
3	**Karalta Paul G867** 609117200200G867	Thomas Spielvogel tommy.8@bigpond.com 10 Creamery Rd, Meredith VIC 3332 Ph: (03) 5286 1450 Fax: (03) 5341 5551
4	**Miramoona 02-0221** 5034712002020221	Kim Barnet barnet@northnet.com.au 'Miramoona', Walcha NSW 2354 Ph: (02) 6777 2885 Fax: (02) 6777 2833
5	**Mirani 466.9** 5007321999990466	Hugh Nivison mirani@mirani.org 'Mirani', Walcha NSW 2354 Ph: (02) 6777 1360 Fax: (02) 6777 2683
6	**Misty Hills 225** 50446920011R0225	Russell & Heather Meaton mistyhills@westnet.com.au RMB 446, Kojonup WA 6395 Ph: (08) 9834 1030 Fax: (08) 99834 1030
7	**Nerstane 949** 5032982000000949	John McLaren info@nerstane.com.au 'Nerstane', Woolbrook NSW 2354 Ph: (02) 6777 5881 Fax: (02) 6777 5922
8*	**Ruby Hills RH7099** 5041201997010098	A & AH Burgess rubyhills@bigpond.com 'Ruby Hills', Walcha NSW 2354 Ph: (02) 6777 2102 Fax: (02) 6778 0009
9	**T13 02A3161** 50906520020A3161	Ian Purvis ian.purvis@csiro.au CSIRO Livestock Industries Locked Bag 1, Armidale NSW 2350 ph: (02) 6776 1373 Fax: (02) 6776 1333
10	**The Grange Superfine 100932** 6046702001100932	
11	**Toland 0201025** 5044852002021025	PC & G Toland toland@hdc.com RMB 2005, Violet Town, VIC 3669 Ph: (03) 5798 1605 Fax: (03) 5798 1404
12*	**Toland Red 154** 504485199999R125	PC & G Toland toland@hdc.com RMB 2005, Violet Town, VIC 3669 Ph: (03) 5798 1605 Fax: (03) 5798 1404
13	**Yalgoo 010377** 5015522001010377	Grant Nivison yalgoo@northnet.com.au PO Box 141, Walcha NSW 2354 Ph: (02) 6777 2525 Fax: (02) 6777 2875

***** Sires evaluated to provide links between other Central Test Sire Evaluation sites and years.

\# 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).
- 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.

Managers Report – 2004 drop 2nd Evaluation

1. Location

- Kirby Research Station is owned and operated by the University of New England and is located 10 km northwest of Armidale. The property is 1134 ha in area and has an average annual rainfall of 789 mm. Soil types range from heavy basalt to trap to granite derived.

2. Selection and joining

- 820 ewes selected for joining,
- Selected visually,
- Inseminated 28 April 2004,
- 15 sires were participating in the evaluation,
- semen quality - good,
- the condition of the ewes at the time of selection and insemination – Score 3 to 4,
- Dr Mike Rivall conducted the insemination, and
- 50 ewes were allocated to each sire entered.

3. Pregnancy and lambing

- 21 July 2004 - pregnancy scanning ,
- 756 ewes were scanned and the conception rate was 76.2%,
- the potential lambing rate including multiple births was 106%,
- Ewes were managed as one contemporary group with a mixture of barley/corn supplement from April to August
- The lambs tagged within 3 days of birth (11 October 2004) and boxed into one contemporary group of ewes and lambs.

4. Weaning and seasonal conditions

- The lambs were marked on 2nd November 2004,
- e-tags/rumen boluses were applied to the lambs in 2005,
- the lambs were weaned on 31st January 2005, and
- lambs were weaned onto improved pasture and fed barley supplement from April 2005

5. Assessments

- 1st stage assessment carried out by Alan Clarke
- Group classing by Alan Clarke & Tom Henry
- 2nd stage assessment carried out by Mike Lollback

6. **Rainfall (mm)**:

The following table can be used to enter average rainfall data for the location of the site. Enter as many years as relevant and include the source of the information. As a minimum record the rainfall per month over the period of the evaluation.

			Year		
Month	**2003**	**2004**	**2005**	**2006**	**Average***
January	24	229	106	72	102
February	115	90	64	114	87
March	83	54	17	88	65
April	141	36	0	54	46
May	41	14	14	0	44
June	34	9	107	48	56
July	26	46	26	52	49
August	40	65	24	19	48
September	8	43	110	44	52
October	82	21	60	33	63
November	0	48	151	108	80
December	0	113	68	71	89
Totals	**594**	**768**	**747**	*703*	**789**

* Source Kirby rainfall records

Evaluation and Management Program

Event	Date/s	Age (months)	Wool (months)
Joining	28 April '04	36/48	9
Lambing: start - finish	September '04		
Tagging and pigment assessment	11 October '04	1	1
Weaning	31 January '05	4	4
Weaning body weight	31 January '05	4	4
Even-up shearing	20 December '04	3	3
Crutching	23 June '05, 28th June '06	9	9
Fleece sampling	9 October '05	12	12
Staple length assessment	9 October '05	12	12
Assessment shearing	10 October '05; 18 October '06	12; 24	12
Classer's Group	June '06;	20	8
Visual trait scoring	September '06	23	11
Body weigh	21 November 2006	25	1
Muscle and fat scanning	21 November 2006	25	1
Worm egg count sample collection	January 2005	4	4
Sire's Progeny Group Classing	7th March 2006	17	4
Drench	5 drenches 2005; 3 in 2006		
Supplementary feeding: start - finish	April to Aug/Sept each year		

Visual tait assessment

1st Evaluation

Alan Clarke

2nd Evaluation

Michael Lollback

Understanding the results

Summary graphs and table - page 12

Summary graph: Visual and measured performance. (Figure 1)

Each sire that has 20 (or 15 for 2nd Evaluation) or more progeny evaluated is located on the graph. The graph describes performance for combined measured traits and visual assessment. Measured traits are combined with a Merino 7% MERINOSELECT index. Visual trait performance is a combination of Classer's Grade performance (Tops and Culls) - see page 12. Sires that are above average performers for these traits are located toward the top right hand quarter.

Summary table: Indexes and Tops and Culls. (Table A)

Each sire is listed for five index performance options and Classer's Grade (Tops and Culls). The index options are based on measured traits and they vary the emphasis on fleece weight, fibre diameter, body weight, staple strength and reproduction (see 'MERINOSELECT Index Options'- page 8 for a more detailed description of indexes used).

Fleece weight by fibre diameter. (Figure 2)

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.

Classers Tops by Cull Grade. (Figure 3)

The graph describes performance for Classer's Tops Grade on the side axis and Cull Grade on the bottom axis. Sires that have above average Tops and below average Culls are in the top left hand quarter.

Tables – page 14

Sire code: Allows a sire to be located on the summary graphs and some tables.

Sire name: Identity of the breeder's flock and the sire's number or name.

No. 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 from a SGA contemporary group site analysis. FBVs describe the relative breeding value (genetic performance) of the sires. A sires progeny will express half of their Sires FBV. FBVs do not necessarily reflect the animals observed performance, which is a combination of both genetic and environmental influences. FBVs are an estimate of the genetic component of the observed 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.

Age at assessment:

Y = Yearling	- 300 to 400 days (10-13 months of age).
H = Hogget	- 400 to 540 days (13-18 months of age).
A = Adult	- 540 days or older (18 months and older).

Sire averages: 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.

Understanding the results – continued

Classer's Grade: A classer grades all progeny as either Tops, Flocks or Culls. The percentage deviation from the average of Tops and Culls is presented.

Scored Traits: The average score for each trait and percentage of progeny given each score.

Wool colour: Greasy wool colour scored from 1 (whitest) to 5 (yellow).

Wool character: Crimp definition scored from 1 (very well defined) to 5 (undefined).

Staple weathering: The deterioration of the staple due to dust, light and/or water (not including fleece rot). Scores from 1 (least) to 5 (most) reflect the depth and degree of deterioration across the fleece. A 1 score is equivalent to a coated fleece in a shed environment and a 5 score is full length and high degree of weathering.

Fleece rot: The severity of fleece rot in a progeny group, based on a 0 to 5 score. A score of zero is given to progeny with no fleece rot, while scores of 1 and 2 are given to bands of minor fleece rot (bacterial staining but no crusting), with 3, 4 and 5 being given to bands of crusty fleece rot. For more information on scoring sheep for fleece rot, see NSW DPI, Agfact A3.3.41.

Face cover: Wool cover on the face scored from 1 (bare head) to 5 (fully covered face).

Feet/Legs: Conformation of feet and legs scored from 1 (sound) to 5 (most deformed).

Body/Neck wrinkle: The degree of wrinkling on the neck and body scored from 1 (no wrinkle) to 5 (very heavy wrinkle).

Jaw: Under- or over-shot jaw. The percentage of progeny with a significant negative expression is reported as Neg(ative).

Back/Shoulder: Conformation of the back and shoulder. The percentage of progeny with a significant negative expression is reported as Neg(ative).

Pigmentation: The percentage of progeny in each of the following categories of pigmentation is reported as Neg(ative) if recorded as a 5 score:

Black Lamb: recessive coloured sheep (largely pigmented wool or if extensively white, is pigmented around the eyes with more or less symmetrical pigmentation on the rest of the body). If the Black Lamb form of pigmentation is identified it is recorded as a score 5. Other expressions are recorded as score 1.

Pigmented wool: pigmentation as random spots or isolated pigmented fibre or pigmented birth-coat halo-hair or pigmented leg hair or Black Lamb. If the quantity of 'pigmented wool' is at a level that would result in a breeding ewe being culled in a high standard commercial Merino flock it is recorded as score 5. Other levels of pigmented wool are recorded as score 1.

Pigmented skin: a significant degree of pigmented skin on the sheep's non-wool producing areas not including those defined by pigmented wool. If the degree of 'pigmented skin' is at a level that would result in a breeding ewe being culled in a high standard commercial Merino flock it is recorded as a score 5. Other levels of pigmented skin are recorded as score 1.

Sire progeny group classing: An assessment of evenness of sire progeny groups carried out at 17 months of age with 4 months wool growth. Classers assess the progeny for evenness to type based on visually assessed traits that are significantly above or below industry standards – 1 (very even) and 5 (very uneven). 4 traits are assessed with a score given out of 10, Constitution, Conformation, Wool Quality and Wool Quantity.

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.

The following MERINOSELECT standard indexes – Fine 10% +SS; Merino 14% +SS and Dual Purpose 7% - are AMSEA base reporting indexes for sites to provide combined measured trait performance. Sites may report additional MERINOSELECT index as they wish. This report has added the following indexes Fine 10% + SS + WEC and Fine 20% + SS.

Index *production system* and Breeding Objectives

***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.
***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.
***Dual Purpose* 7%** (DP7%)	*Medium wool Merino self-replacing with 25% lamb production system* with moderate emphasis on fleece weight and fibre diameter (7% micron premium) plus high emphasis on live weight and reproduction and maintain performance on other traits.
Fine 10% + SS + WEC	*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 worm egg count and maintain performance on other traits.
Fine 20% + SS	*Fine wool Merino self-replacing production system* with moderate emphasis on fleece weight and strong emphasis on fibre diameter (20% Micron Premium) plus moderate emphasis on staple strength and maintain performance on other traits.

Index percentage contribution to economic gain

The percentage contribution to economic gain to a commercial merino flock that joins rams selected using an index shown below.

***Fine* 10% +SS**	
Clean fleece weight:	42%
Fibre diameter:	39%
Body weight:	0%
Staple strength	19%
Worm egg count	0%
Number lambs weaned	0%

***Merino* 14% +SS**	
Clean fleece weight:	8%
Fibre diameter:	58%
Body weight:	3%
Staple strength	31%
Worm egg count	0%
Number lambs weaned	0%

***Dual Purpose* 7%**	
Clean fleece weight:	26%
Fibre diameter:	24%
Body weight:	30%
Staple strength	6%
Worm egg count	0%
Number lambs weaned	14%

Fine 20% + SS	
Clean fleece weight:	3.2%
Fibre diameter:	53%
Body weight:	0%
Staple strength	46%
Worm egg count	0%
Number lambs weaned	0%

***Fine* 10% +SS + WEC**	
Clean fleece weight:	32%
Fibre diameter:	28%
Body weight:	0%
Staple strength	17%
Worm egg count	21%
Number lambs weaned	0%

Wool Quality and Fleece Value

Wool Quality performance is described by Style Grade, Staple Length, Colour, Strength and Quality Number in Table 6. All fleeces were assessed at shearing for Length, Style and Colour as described by the AWEX type system (Style with additional grades as described following the table).

Style Grade is assigned using a numbering system from 1 to 9

Grade	Style	Description
1	SPN+	Long, soft, bright, well-nourished wool with minimum dust penetration and well defined, even crimp.
2	SPN	Good length, soft, bright well nourished wool, very slight tip and well-defined even crimp.
3	SPN-	Good length, soft, bright, well-nourished wool, some dust penetration, well-defined crimp, with some variation allowed throughout the fleece.
4	BTM+	Good length and colour, some dryness allowed, some dust penetration, good crimping with some variation of crimping and length allowed through the fleece.
5	BTM	Good length and colour, some dryness allowed, some dust penetration, some variation in character and length throughout the fleece.
6	GTM+	Good length and medium colour, dry wools with dust penetration, variation in crimping and length throughout the fleece.
7	GTM	Good to medium length, medium colour, drier wools, variations throughout the fleece for crimping length and or tensile strength.
8	ATM+	Good to medium length, medium to heavy colour, poor crimp definition and variation in length.
9	ATM	Short, harsh, medium to heavy colour, dry wool, with dust penetration and wasty tip, ill-defined crimp and lacking in tensile strength.

Staple Length is assessed at shearing as A (=1), B (=2), or C (=3) length (but is not reported). A lower number means longer staples. The actual staple length is calculated in millimetres in the lab (AFT) from the midside sample.

Colour is assessed at shearing as nil (=1), H1 (=2), or H2 (=3). A lower number means whiter wool.

Staple Strength is assessed at shearing as sound (=1), W1 (=2), or W2 (=3) strength (but is not reported). A lower number means sounder wool. The actual staple strength is calculated in Newtons per kilotex in the lab (AFT) from the midside sample.

Quality Number is assessed at shearing as 74s, 70s, 66s etc. A lower number means bolder crimp.

Fleece Value ($/fleece) – The combination of style grade, staple length, colour and strength is used to value each fleece, according to its fibre diameter. Estimates of clean price (c/kg) was obtained using AWI's Pricemaker web site (http://www.woolcheque.com.au), using sire progeny group averages for fibre diameter, staple strength, staple length, and yield. Vegetable matter of 0.4% and colour of "H0 None" were used for all sire groups. The prices were estimated for each style grade observed in a progeny group, and then combined into a weighted average. This weighted average was then multiplied by the average clean fleece weight of the progeny group to arrive at the $/fleece (fleece value). Table 6 shows the average fleece values for each progeny group and the premiums / discounts for wool quality traits. The timescale used to estimate price was "Latest 3 full seasons (average)", for the Northern Region.

Accuracy of Flock Breeding Values

Flock Breeding Values (FBV) 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 was infinite. Because the number of progeny in the evaluation is not infinite, performance shown in this report is described as *Estimated* Breeding Values.

Without progeny test information the correlation between the *Estimated* and *True* Breeding Value of sires from different sources would be zero (0.0%). The correlation between *Estimated* 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 CTSE sites located across Australia to allow all sires entered in these sites to have their performance reported relative to each other in *Merino Superior Sires*. *Merino Superior Sires* reports sires from across all effectively linked CTSE sites and across all years at these sites. Link sires are therefore a vital component of the Central Test Sire Evaluation. To be used as link sire a ram must have at least 25 progeny assessed at 1st Evaluation 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 rams available across many flocks in Australia and New Zealand.

Calculation of combined measured trait and combined visual trait performance

Combined measured trait performance is calculated as (MERINOSELECT 7% MP Index - 100).
Combined visual trait performance is calculated as (Classer's Grade Tops% - Culls%)/5, expressed as a deviation from (average Tops% - average Culls%)/5.

Example

Sire's performance	7% MP Index value = 119.7
	Tops% = 25.5 (average Tops% = 25.1)
	Culls% = 17.6 (average Culls% = 16.4)

Combined Measured = 119.7 - 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

Summary Graph – Figure 1 - **Combined measured traits and visual trait performance**

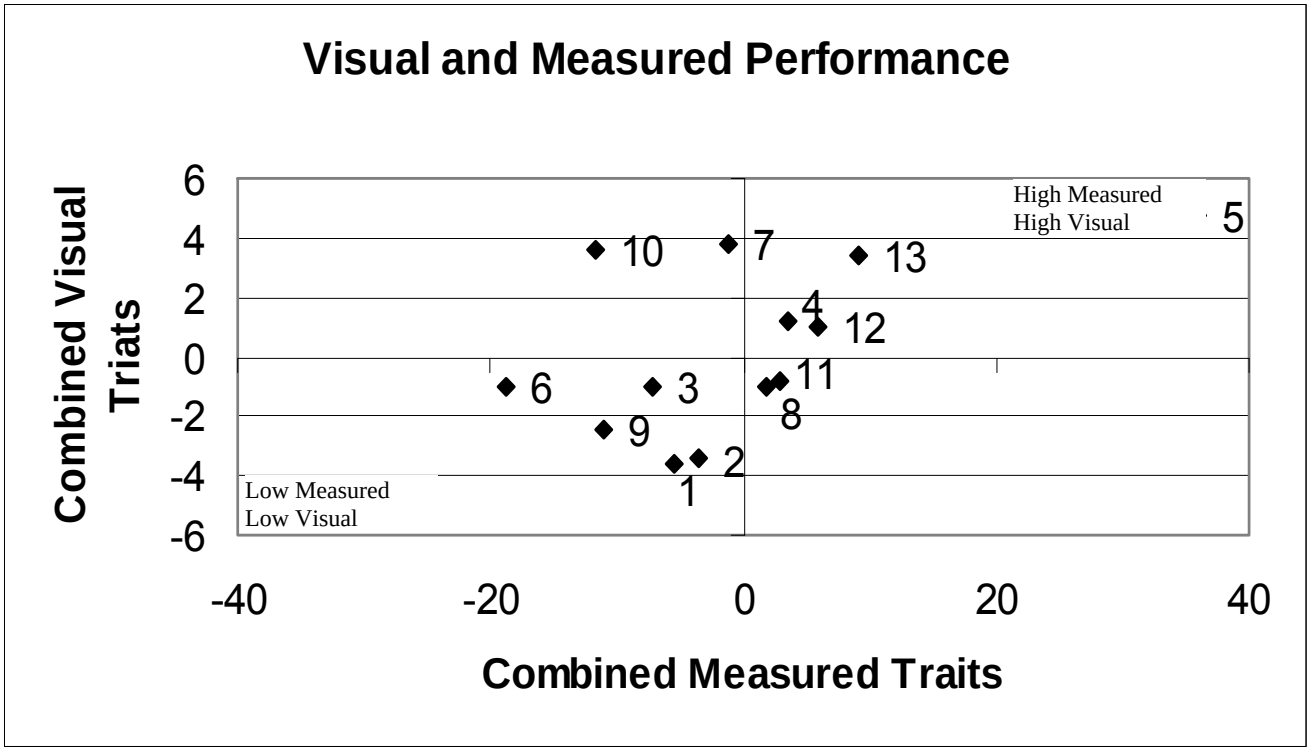


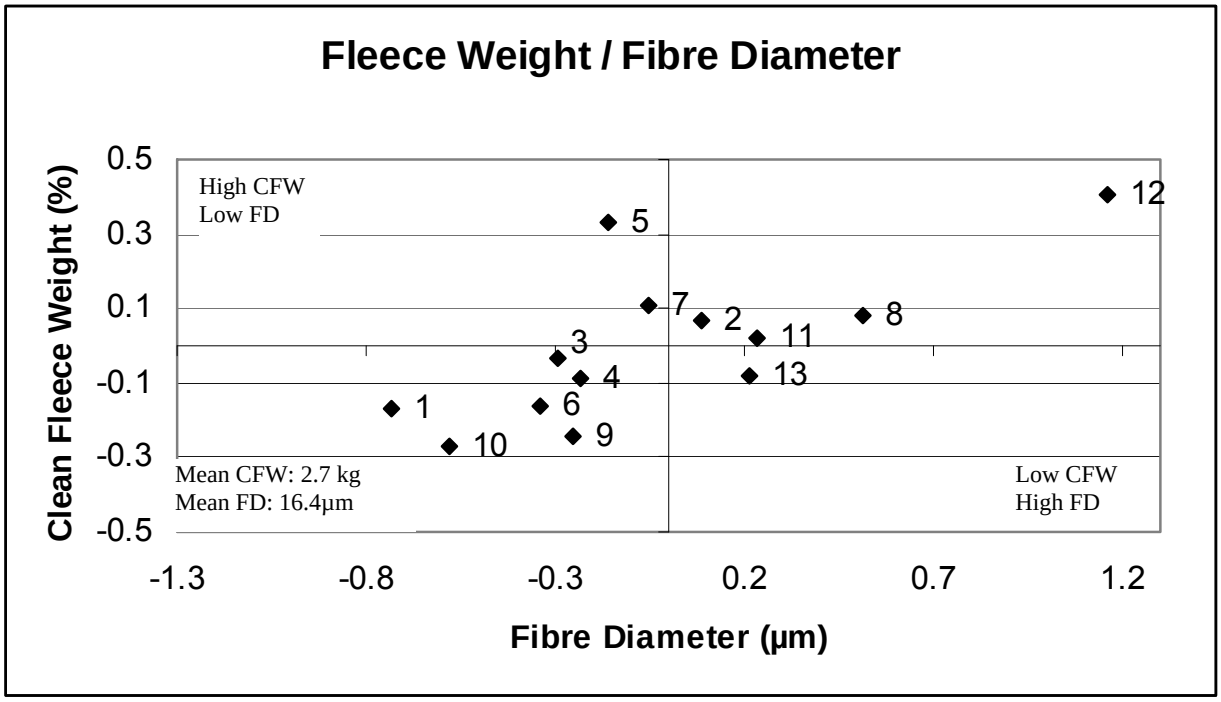
Table A – **MERINOSELECT indexes and Classer's Grade**

Sire Code	Sire name						Classer's Grade			
		F10% +SS	*M*14% +SS	DP7%	F20% +SS	F10% + SS + WEC	Tops % (dev)		Culls % (dev)	
		A	A	A	A	A	Y	A	Y	A
1	Grindon, W67	98.0	98.5	94.6	104.9	82.6	-19	-15	12	3
2	Havilah North, 010078	100.2	96.8	96.4	96.1	90.0	-17	-12	9	5
3	Karalta, G867	103.3	102.3	92.8	104.5	108.1	-10	-7	8	-2
4	Miramoona, 221	94.7	95.2	103.6	95.8	88.3	22	11	-2	5
5	Mirani, 466.9	129.9	116.8	135.9	108.8	136.2	7	22	-6	-2
6	Misty Hills, R225	93.2	96.7	81.3	104.6	92.0	-9	0	10	5
7	Nerstane, N949	110.5	104.7	98.8	105.9	119.5	13	14	-1	-5
8	Ruby Hills, RH7099	96.3	98.5	101.9	95.3	91.3	2	-7	-6	-2
9	T13, 02A3161	94.9	101	88.9	106.0	105.6	-15	-12	-4	0
10	The Grange Superfine, 100932	86.4	91	88.4	96.1	92.1	7	13	-3	-5
11	Toland, Orange 1025	96.7	99.1	102.8	96.9	95.5	7	-5	-5	-1
12	Toland, Red 154	103.7	98.2	106	87.3	108.5	18	3	-4	-2
13	Yalgoo, 010377	101.2	107.9	109.1	107.1	101.1	10	12	-9	-5
Average performance							33 %	30 %	9 %	5 %

* Link Sires: Sires 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

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

Figures 2 and 3 – **Summary Graphs – FW by FD and Tops by Culls**



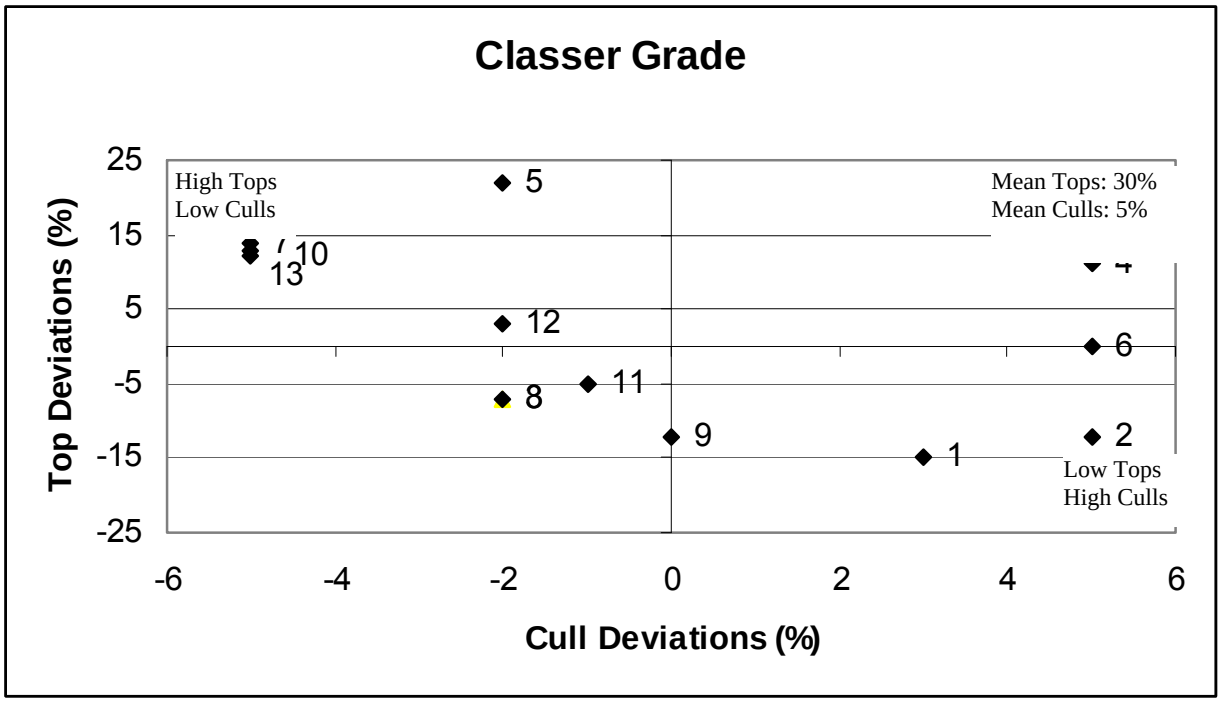


Table 1 – **Major measured traits and Classer's Grades**

Sire Code	Sire name	Number of progeny	Flock Breeding Values (deviations)								Classer's Grade [1]			
			Y^GFW %	AGFW %	YCFW %	ACFW %	YFD µm	AFD µm	YWT kg	AWT kg	Tops % (dev)		Culls % (dev)	
											Y^	A	Y	A
1	Grindon, W67	46	-9.1	-4.1	-13.5	-8.8	-1.1	-1.6	0.6	0.7	-19	-15	12	3
2	Havilah North, 010078	47	-0.4	2.6	3.2	4.8	0.3	0.2	-2.9	-2.5	-17	-12	9	5
3	Karalta, G867	38	2.7	-0.1	4.3	-1.9	-0.2	-0.5	-4.4	-5.0	-10	-7	8	-2
4	Miramoona, 221	44	-2.0	-3.1	-4.3	-4.9	-0.0	-0.4	3.9	4.7	22	11	-2	5
5	Mirani, 466.9	40	24.1	16.8	23.0	17.9	-0.4	-0.3	3.3	-0.1	7	22	-6	-2
6	Misty Hills, R225	47	-15.6	-8.5	-15.2	-8.5	-0.5	-0.7	-4.0	-1.2	-9	0	10	5
7	Nerstane, N949	62	2.5	3.6	5.0	6.9	0.0	0.1	-5.4	-3.1	13	14	-1	-5
8*	Ruby Hills, RH7099	46	1.7	0.5	4.8	2.6	1.0	1.1	1.4	1.4	2	-7	-6	-2
9	T13, 02A3161	52	-6.8	-11.1	-7.4	-11.7	-0.1	-0.5	-0.9	-1.8	-15	-12	-4	0
10	The Grange Superfine, 100932	42	-15.4	-13.5	-17.8	-13.6	-1.3	-1.3	1.7	1.2	7	13	-3	-5
11	Toland, Orange 1025	33	0.9	2.8	-1.0	0.6	-0.1	0.5	1.9	3.6	7	-5	-5	-1
12*	Toland, Red 154	51	15.0	21.3	17.2	23.1	1.1	2.5	-3.2	-3.4	18	3	-4	-2
13	Yalgoo, 010377	45	2.4	-5.8	2.8	-4.9	1.1	0.4	5.4	4.4	10	12	-9	-5
Average performance			1.97 kg	3.4 kg	1.6 kg	2.7 kg	14.8 µm	16.4 µm	26.2 kg	37.2 kg	33 %	30 %	9 %	5 %

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^ 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%

Note: Information on how to use the results in the table above can be found on page 6.

Tables 2 – **Other measured traits**

Sire Code	Sire name	Number of progeny	Y^FDCV %	AFDCV %	YSL %	ASL %	YSS µm	ASS µm	H^FAT mm	HEMD mm
1	Grindon, W67	46	1.0	1.3	-2.6	-4.3	-2.8	-9.4	0.8	1.6
2	Havilah North, 010078	47	0.3	0.6	-1.1	-3.5	-0.9	1.0	-1.1	-1.4
3	Karalta, G867	38	2.1	1.5	0.1	0.5	1.1	-5.1	0.5	0.6
4	Miramoona, 221	44	-1.0	-1.3	-0.5	0.7	-3.7	-5.8	-0.4	-0.6
5	Mirani, 466.9	40	1.5	1.5	7.3	5.3	-5.0	-7.1	-0.1	-1.2
6	Misty Hills, R225	47	0.9	-0.2	-8.5	-6.2	2.2	1.6	-0.8	0.0
7	Nerstane, N949	62	0.3	-0.9	-2.4	-2.6	0.2	8.5	-0.4	-1.5
8*	Ruby Hills, RH7099	46	-1.4	-1.2	5.0	2.8	2.8	5.6	0.5	1.5
9	T13, 02A3161	52	-0.6	-0.6	-5.6	-6.0	2.8	0.6	-0.2	0.1
10	The Grange Superfine, 100932	42	0.3	0.8	-2.7	-3.6	-4.3	-8.6	0.1	0.4
11	Toland, Orange 1025	33	-0.4	-0.3	0.7	4.1	-0.5	3.0	0.7	1.3
12*	Toland, Red 154	51	0.3	0.4	9.3	15.7	2.7	7.2	0.3	0.8
13	Yalgoo, 010377	45	-2.4	-1.4	0.8	-1.3	5.9	7.9	1.2	0.7
Average performance			18.9 %	17.5 %	62.5 mm	84.7 mm	27.7 N/Ktex	49.6 N/ktex	0.0 mm	20.1 mm

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Note: Information on how to use the results in the table above can be found on page 6.

Table 3a – **Visual trait assessments – Wool Quality**

Wool Quality trait scores are reported as the sire's average (Av) score and the percentage of a sire's progeny for each score.

Wool Quality																				
Sire Code	Colour					Wool Character					Staple Weathering				Fleece Rot					
	Av	1	2	3	4	Av	1	2	3	4	Av	1	2	3	Av	0	1	2	3	4
1	1.7	38	57	5	0	1.9	31	52	17	0	2	2	93	5	0.7	68	0	25	5	2
2	1.5	64	30	5	2	2.4	11	43	39	7	2	2	93	5	0.5	73	9	16	2	0
3	1.3	66	34	0	0	1.9	26	66	6	3	2	3	91	6	0.4	78	3	19	0	0
4	1.5	62	29	10	0	1.7	48	38	14	0	1.9	12	88	0	0.3	81	2	16	0	0
5	1.4	76	8	14	3	1.8	38	43	19	0	2.1	3	86	11	0.6	73	0	25	3	0
6	1.4	68	28	5	0	1.9	35	40	25	0	2	3	95	3	0.1	93	0	7	0	0
7	1.3	73	25	2	0	1.4	65	31	4	0	1.9	15	85	0	0.3	86	4	9	0	2
8*	1.6	55	30	13	3	1.9	38	40	23	0	2	5	85	10	0.8	63	5	22	10	0
9	1.3	70	26	4	0	2	26	46	26	2	2	2	98	0	0.6	69	4	23	4	0
10	1.8	42	39	18	0	2	30	48	12	9	2	0	100	0	0.2	89	3	9	0	0
11	1.8	39	43	14	4	2.4	18	43	25	14	2	7	86	7	0.6	67	3	30	0	0
12*	1.4	72	23	0	5	2.1	37	16	47	0	2.1	0	91	9	0.3	85	0	13	2	0
13	1.4	63	33	5	0	1.8	40	40	19	2	2	5	93	2	0.3	81	7	12	0	0
Av		58	32	8	2	1.9	35	42	21	3	2	4.6	90	5	0.5	77	4	18	2	0.3

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Note: Information on how to use the results in the table above can be found on page 7.

Table 3b – **Visual trait assessments– Conformation and Pigmentation**

Conformation trait scores are reported as the sire's average (Av) score and the percentage of a sire's progeny for each score. Jaw, back/shoulders and pigmented traits are reported as the percentage of progeny with a negative (Neg) expression of the trait.

Sire Code	Conformation																	Pigmentation		
	Face Cover						Neck / Body Development					Feet / Legs						Black Lamb	Wool	Skin
	Av	**1**	**2**	**3**	**4**	**5**	**Av**	**1**	**2**	**3**	**4**	**Av**	**1**	**2**	**3**	**4**	**5**	**Neg**	**Neg**	**Neg**
1	2.4	5	61	27	7	0	2.4	0	69	26	5	1.7	43	43	14	0	0	0	0	4
2	2.2	11	57	30	2	0	2.5	2	55	39	5	2	30	55	9	5	2	0	0	1
3	2.4	9	43	46	3	0	2.7	3	29	63	6	1.8	40	43	14	3	0	0	0	0
4	2	10	79	12	0	0	2.3	5	74	12	10	1.3	71	26	2	0	0	0	0	0
5	2	15	67	18	0	0	2.1	5	81	14	0	1.6	62	24	8	5	0	0	0	0
6	2.4	2	62	26	10	0	2.5	5	50	33	13	1.6	55	35	8	3	0	0	0	0
7	2.1	12	61	27	0	0	2.4	4	60	31	4	1.8	52	23	19	6	0	0	0	0
8*	2.2	10	64	23	0	3	2.3	5	65	25	5	1.3	70	28	3	0	0	0	0	0
9	2.4	4	57	33	7	0	2.6	2	43	50	4	1.5	59	33	7	2	0	0	0	2
10	2.2	12	59	29	0	0	2.4	6	58	30	6	1.7	45	39	12	3	0	0	0	1
11	2.4	3	59	31	7	0	2.2	4	68	29	0	1.7	46	39	14	0	0	0	0	1
12*	2.3	4	60	36	0	0	2.2	2	77	19	2	1.4	63	35	2	0	0	0	0	0
13	2.2	12	61	22	5	0	2.2	7	65	26	2	1.3	77	19	5	0	0	0	0	0
Av	2.4	8.7	60.7	27.3	3.2	0.2	2.4	3.8	59.9	31.9	4.7	1.6	55.5	33.4	9	1.8	0.3	0	0	0.7

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

Note: Information on how to use the results in the table above can be found on page 7.

Table 4 – **Sire averages for measured traits**

Sire code	Sire name	Number of progeny	Sire Averages (deviations)													
			GFW %		CFW %		FD μm		WT kg		FDCV %		SL mm		SS N/ktex	
			Y	A	Y	A	Y	A	Y	A	Y	A	Y	A	Y	A
1	Grindon, W67	46	-0.11	-0.08	-0.13	-0.17	-0.53	-0.74	0.25	0.15	0.72	0.83	-1.25	-3.01	-1.50	-6.45
2	Havilah North, 010078	47	-0.01	0.05	0.03	0.07	0.12	0.08	-1.08	-1.22	0.15	0.36	-0.55	-2.34	-0.57	0.92
3	Karalta, G867	38	0.01	-0.02	0.04	-0.03	-0.07	-0.30	-1.83	-2.64	1.47	0.62	0.29	-0.01	1.45	-3.46
4	Miramoona, 221	44	-0.01	-0.04	-0.03	-0.09	-0.02	-0.23	1.42	2.30	-0.49	-0.72	-0.56	0.10	-2.48	-4.00
5	Mirani, 466.9	40	0.27	0.36	0.20	0.33	-0.20	-0.16	1.37	0.22	0.92	0.67	4.40	2.92	-2.42	-4.68
6	Misty Hills, R225	47	-0.18	-0.21	-0.14	-0.16	-0.22	-0.34	-1.47	-0.91	0.58	-0.05	-4.82	-3.28	1.49	1.19
7	Nerstane, N949	62	0.03	0.04	0.05	0.11	0.02	-0.05	-1.87	-1.32	0.19	-0.65	-1.49	-1.15	-0.38	5.78
8	Ruby Hills, RH7099	46	0.02	0.01	0.06	0.08	0.55	0.51	0.43	0.45	-0.94	-0.66	3.08	1.96	1.40	3.89
9	T13, 02A3161	52	-0.07	-0.27	-0.07	-0.24	-0.04	-0.25	-0.34	-1.03	-0.38	-0.41	-3.09	-3.21	1.63	0.52
10	The Grange Superfine, 100932	42	-0.19	-0.29	-0.18	-0.27	-0.73	-0.58	0.62	0.50	0.23	0.69	-1.31	-2.64	-2.82	-6.18
11	Toland, Orange 1025	33	0.03	0.09	0.00	0.02	-0.06	0.24	0.65	1.64	-0.39	-0.06	-0.79	3.06	-0.18	2.42
12	Toland, Red 154	51	0.16	0.41	0.16	0.41	0.50	1.16	-1.27	-2.00	-0.08	0.18	4.89	9.51	1.40	5.10
13 *	Yalgoo, 010377	45	0.04	-0.15	0.03	-0.08	0.59	0.22	1.91	2.07	-1.63	-0.77	0.50	-0.30	3.32	5.60
Average performance			1.97 kg	3.42 kg	1.59 kg	2.72 kg	14.75 μm	16.37 μm	26.17 kg	37.18 kg	18.95 %	17.48 %	62.47 mm	84.69 mm	27.72 N/ktex	49.56 N/ktex

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Note: Information on how to use the results in the table above can be found on the bottom of page 6.

Table 5 – **Sire's Progeny Group Evenness**

Sire Code	Sire name	Positive Comment	Negative Comment	Score	Rank
1	Grindon, 010067	Even for Type	Wool quality and quantity, pigment	25	13
2	Havilah North, 010078	Feet, Topline	Variability in Type Structural Faults - Jaws	29	5
3	Karalta Paul, G867	Coverage	Short staple length; Small frame size; Tighter types	22	14
4	Miramoona, 02-0221	Consistent / uniform conformation - Body type	Short Staple Length; Creamy Wool;; Structural Faults - Jaw and body size	28.5	7
5	Mirani, 466.9	Soft wool; Frame and Type	Nil	34	2
6	Misty Hills, 225	Wool Quality; Style and Softness	Structural Faults - Hocks, Some small frame	29	5
7	Nerstane, 949	Wool Quality and Quantity; Uniform frame size	Nil	35	1
8*	Ruby Hills, RH7099	Wool Quantity – good staple length	Structural faults - Hocks and Shoulders	27.5	8
9	T13, 02A3161	Frame – Even type	Wool type variable; Conformation and pigment	26	11
11	The Grange Superfine, 100932	Wool quality and quantity	Conformation – pasterns; Frame size – variable	27	9
12	Toland, 02-1025	Good Staple length; Soft Wool; Frame Size	Wool Quality	33	4
13*	Toland Red, 154	Good Staple Length; Uniform; Frame size – even	Nil	34	2
14	Yalgoo, 010377	Good Staple Length; Structural - Feet and Legs	Wool Quality Frame size - variable	26.5	10
Average performance				28.3	

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New England Merino Sire Evaluation
2007 Report