



## Elders VP Victoria Sire Evaluation Group

**2000 Drop 1<sup>st</sup> Evaluation of Progeny at 11 months**

**11 Months Wool Growth**

Conducted by:



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

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## FOREWORD

### ***Elders VP Victoria Sire Evaluation Group***

There have been three trials conducted previously in the Balmoral (B95) and Hamilton (HT93, HT94) area. These trials were conducted by different groups and in 1998 a small group of studbreeders met with the Central Test Sire Evaluation Co-ordinator Dr. Euan Roberts to form what is now known as the Elders VP Victoria Sire Evaluation Group.

The Elders VP Victoria Sire Evaluation Trials commenced in 1998 and now have 4 progeny drops – 1998, 1999, 2000 and 2001; the 1998 and 1999 progeny were run on host property “The Mountain Dam”, Balmoral and the 2000 & 2001 drop progeny at Kerrsville, situated between Balmoral and Coleraine. All trials are run for a minimum of 2 years.

The 1998 drop wethers have continued to be assessed outside the Central Test Evaluation program as part of a PIRD (Producer Initiated Research Development) Program to determine if mature age assessments provide similar information to two year trials.

The Elders VP Victoria Sire Evaluation Trials aims to inform participants, their clients and interested woolgrowers on events surrounding the trials and in addition to these annual reports, produces periodic newsletters. In addition, displays of progeny, data and their fleeces have been on show at the Australian Sheep & Wool Show (Melbourne 1998, 1999 and Bendigo 2000 & 2001), Balmoral and Horsham Shows and Hamilton Sheepvention. Participating studs have also provided static displays for viewing during field days. In April, 2000 and again in 2001 successful Open Days were held at “The Mountain Dam” and “Kerrsville” to inspect progeny and to discuss the sire evaluation program with interested woolgrowers.

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

### ***The Committee:***

Robert Plush	(Chairman)	0355 750208	Email: plush1@ansoniacom.au
Robert Close		0355 704238	Email: kurrawirra@ansoniacom.au
Tom Silcock		0353 882238	Email: silcock@netconnect.com.au
John Crawford		0355 749224	
Sue Jarvis		0355 743298	Email: aramis@datafast.net.au
David Whyte		0355 722266	
Marion Gibbins	(Manager)	0353 848201	Email: mga@netconnect.com.au

### ***Host Properties***

The Elders VP Sire Evaluation 1998 and 1999 Progeny Drop Trials were hosted on the property of Tom and Alison Silcock at “The Mountain Dam”, Telangatuk East.

The 2000 & 2001 drop progeny are hosted at Kerrsville, Coleraine. The Kerrsville property run by Robert, Judi & Sam Plush is situated on clay loam, undulating tableland red gum country on the Coleraine-Harrow Road. The average annual rainfall at Kerrsville is 720mm. Progeny are managed under strict commercial conditions.

*Report writing & production: Elders VP Victoria Sire Evaluation Group*

*Data analysis: Sue Jarvis*

January 2002

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The information in this booklet should not be read in isolation – 2000 drop progeny at time of assessment were 11 months of age and shorn with 11 months wool growth. This is the first assessment of progeny in the Central Test Evaluation trials and results from this assessment will be reported in the *Merino Superior Sires* publication.

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## UNDERSTANDING THE RESULTS

### TABLES

Sire Identity:	Identity of breeder and the sire's number and/or name and code number located on some tables and graphs.
No. of Progeny:	Number of progeny assessed at time of event
Estimated Progeny Values:	Estimated progeny values (EPVs) express the expected performance of progeny of a sire relative to another sire in the evaluation when mated to a random allocation of ewes. EPVs are used to describe the performance of the major measured traits (see information on accuracy over page). They are expressed as deviations (dev) from the average of sires in the evaluation. Fibre Diameter, Yield and Coefficient of Variation of Fibre Diameter EPVs are presented as deviations from the average, expressed in the same units as they were measured. Greasy and Clean Fleece Weights and Body Weights are percentages – 0% equals average and, for example, 10.0 is 10% above average performance of the group.
Traits:	<p>GFW% Greasy Fleece Weight (percentage) CFW% Clean Fleece Weight (percentage) FD Average Fibre diameter (micron) BWT% Body Weight (percentage) CV% Co-efficient of variation of fibre diameter Yld% Washing yield of the midside sample</p>
Sire Averages:	Sire averages are the average performance of all the progeny assessed. No account is made for factors that can improve the accuracy, such as birth type or sex.
Visual Scores: <i>Conformation</i>	<p><b>All scored 1-5 (with the exception of fleece rot – see below), with '1' being worst and '5' being exceptionally good. Many animals were scored '3', being neither bad nor outstandingly good.</b></p> <p><b>Face</b> – Scored 1 to 5, '1' being muffled, '2' being less muffled. <b>Shoulders/back</b> – Scored 1-5, with '1' being worst and '5' best. Reported as percentage of progeny with scores '1' and '2'. <b>Feet/legs</b> – Scored 1 – 5, '1' being worst, '2' having slight problem. <b>Neck/body development</b> – Scored 1 – 5, '1' being worst (too heavy or too plain), '2' having slight problem. <b>Mouth/Jaw</b> – Scored 1-5, with '1' being worst and '5' best. Reported as percentage of progeny with scores '1' and '2'</p>
<i>Wool Quality</i>	<p><b>Wool Colour</b> – Scored 1 to 5, '1' being extreme colour, '3' being average/good, '5' being excellent white/bright <b>Wool Character</b> – Scored 1 to 5, where '5' is best, '1' is worst. <b>Dust penetration/staple weathering</b> - Scored 1 to 5, where '5' is best, '1' is worst.</p> <p><b>Pigmentation: No. Black Lambs:</b> number of lambs recorded as predominantly black or with noticeable black spot at time of tagging; noted as the number of lambs recorded as such and the percentage of incidence within each sire group. <b>Skin Pigmentation:</b> progeny noted as having skin pigmentation (typically smutty nose/brown rimmed eyes), reported as percentage of progeny with skin pigmentation <b>Wool Pigmentation:</b> Small spot of black or coloured wool in wool growing area, noted at shearing and shown as a percentage of progeny with wool pigmentation. <b>Fleece Rot</b> – Scored 0 to 5, '0' is no fleece rot, '1' slight fleece rot, '5' is extreme. <b>Incidence of Fleece rot</b> is the percentage of a sire's progeny showing some level (that is, a score of 1 to 5) of fleece rot.</p>

**Index Options:** Breeding Objective index options provide the relative value of sires based on a combination of the measured traits. It should be noted that these are only some of the many indexes which can be used to describe an individual breeder's objective for measured traits. If a breeder uses a sire, the relative performance of the flock must be considered to establish the change that can be expected. The RAMPOWER standard indexes – 3%, 6% and 12% – have been endorsed by Central Test Sire Evaluation as the base indexes for sites to provide combined measured trait results.

**3% Index:** Maintain fibre diameter (FD) while maximising the increase in Clean Fleece Weight (CFW), maintaining body weight (BWT) and CV of fibre diameter.

**6% Index:** A moderate level of downward pressure on FD, while maintaining a high level of increase in CFW, maintaining BWT and improving CV of FD.

**12% Index:** A high level of downward pressure on FD, while obtaining a small increase in CFW, maintaining BWT and improving CV of FD.

**Classer's Grade:** In the 2000 drop Assessment the Committee changed to one Classer to grade all assessed progeny as Tops, Flocks or Culls, based on visual assessment of all traits. The percentage of Tops, Flocks and Culls is presented. This change is in line with changes to Sire Evaluation requirements.

**Combined Traits:** The performance for a comprehensive list of traits is scored by the classer as described in Visual Traits above, and are then combined into 'positive', 'average/good' or 'negative' performance. This is intended to provide a summary of visually assessed performance. Each combined trait shows the percentage of a sire's progeny with a positive score or negative score for one or more traits in that group. (e.g. a sire that has an offspring with a negative score for both feet and shoulders would have this information collated as 2 negatives to go into the aggregate for conformation even though it may be the same sheep.)

**Conformation:** Not specifically scored in assessment, but figures taken from classing of face, shoulders/back, feet/legs, neck/body development and mouth/jaw and combined into an aggregate.

**Wool Quality:** Not specifically scored in assessment, but figures taken from classing of wool colour, wool character and dust penetration/staple weathering and combined into an aggregate.

**Progeny Group Classing:** Assessment of the evenness of sire progeny groups is carried out as a separate assessment to individual classing and is conducted in the 2<sup>nd</sup> year of assessment.

## **SUMMARY GRAPHS**

Performance distribution graphs provide a summary of performance of sires for two traits such as Fleece Weight and Fibre Diameter. Use the labels on the graph to obtain a general idea of the performance of sires in that area of the graph, e.g. High Fleece Weight/Low Fibre Diameter. (See Figure 2)

## **ACCURACY OF ESTIMATED PROGENY VALUE**

Estimated Progeny Values (EPVs) express the expected performance of progeny of a sire relative to performance of progeny of another sire in the evaluation when mated to the same standard of ewes.

EPVs are a more accurate indicator of a sire's relative genetic merit than simple sire averages as they take into account:

- how much of the superiority is actually due to the sire's genes and can be passed on to its progeny;

- the number of progeny a sire has in the analysis;
- the measurements of other related traits.
- non-genetic effects such as whether animals are born as singles or twins.

True progeny values would be achieved if the number of progeny evaluation 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 Progeny Values*.

The correlation (similarity) between the *Estimated Progeny Value* and the *True Progeny Value* increases as

- i) the number of progeny is increased, and
- ii) the heritability of the trait is greater.

If the number of progeny were infinite the correlation between the *Estimated* and *True Progeny Value* would be perfect (described as 100%). Without progeny test information the correlation between the *Estimated* and *True Progeny Value* of sires from different sources would be zero (0.0%). The correlation between *Estimated* and *True Progeny 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. Note the correlation used in this example is for a trait such as fibre diameter with a high heritability (0.5). Traits with lower heritabilities require more progeny to reach the same level of accuracy.

## **ALLOWANCE FOR TWINS/TRIPLETS**

### **Visual Assessment:**

No allowance was made in the visual assessment for multiple births.

### **Objective Analysis:**

An allowance was made by CTSE analysis program for twins and triplets when analysing measurement data for the following traits – GFW%, Yield, CFW%, BWT, FD and CV of FD.

## **LINKING CENTRAL TEST DATA USING LOCAL SITES**

Link sires provide the “link” between other local sites and are used in combined Central Test Sire Evaluation reports to report across sites and across years. These “link sires” are a vital component of the Central Test Sire Evaluation. To become a “link sire”, the ram must have participated in evaluation of their progeny across more than one site. Each year the publication *Merino Superior Sires* is produced which reports the combined analysis of rams participating across all Australian Local Sites.

The information in this booklet therefore should not be read in isolation – 2000 drop progeny at time of 1st assessment were 11 months of age with 11 months wool growth. These progeny are now reported in this document for their first assessment in 2001.

## **CHANGES TO THE CENTRAL TEST GROUP**

In 2000 the Central Test Sire Evaluation Committee run under the auspices of the Australian Association of Stud Merino Breeders voted to become an independent group and is now known as the Australian Merino Sire Evaluation Association (AMSEA). Updated CTSE accreditation requirements were adopted in April, 2000.

The Victorian Stud Merino Sheepbreeders’ Association continues to support Victorian Sire Evaluation Trials and the Elders Victoria Sire Evaluation Trial is conducted under the auspices of both the Victorian Stud Merino Sheepbreeders’ Association and the Balmoral Pastoral and Agricultural Society.

## 2000 DROP SIRE & OWNER DETAILS

<b>Stud Sire Identity</b>	<b>Contact Name, Address, Phone &amp; Fax No. &amp; Email</b>
<b>Bindawarra 783 “Steve”</b> (5038921997000783)	Murray & Janet Toland, PO Box 131, Omeo 3898 Ph. 0351 591362, Fax 0351 591361
<b>Geelong Park 62403</b> (5046961996062403)	Roxby Park Primary Producers, c/- Mackinnon Project, Werribee 3030 Ph. 03 9731 2225, Fax 03 9731 2388 Email: <a href="mailto:a.vizard@vet.unimelb.edu.au">a.vizard@vet.unimelb.edu.au</a>
<b>Gringegalgon</b> R1B-0018/98 (5030971998R1B018)	Stephen Silcock, Gringegalgon Stud Partnership, RMB 365, Balmoral 3407 Ph. 0355 743202, Fax 0355 743239 Email: <a href="mailto:sjsilcock@bigpond.com">sjsilcock@bigpond.com</a>
<b>Hazeldean 95-3356</b> (5003831995003356)	Jim Litchfield, Hazeldean Pty. Ltd., Cooma 2630 Ph. 0264 535555, Fax 0264 535526 Email <a href="mailto:litchfield@hazeldean.com.au">litchfield@hazeldean.com.au</a>
<b>Kerrsville NB9883</b> (5035091999NB9883)	Robert Plush, RMB 8203, Coleraine 3315 Ph/Fax 0355 750208 Email: <a href="mailto:plush1@anson.com.au">plush1@anson.com.au</a>
<b>Kurra-Wirra BZ-480</b> (5041731997BZ0480)	Robert Close, Kurra-Wirra, RMB 9331, Coleraine 3315 Ph. 0355 704238, Fax 0355 704234 Email: <a href="mailto:kurrawirra@anson.com.au">kurrawirra@anson.com.au</a>
<b>Merinotech 94-425</b> [LINK SIRE] * (5046481994940425)	Hugh & Sue Jarvis, Merinotech Victoria Pty Ltd, RMB 395 Balmoral 3407 Ph. 0355 743298, Fax 0355 743299 Email: <a href="mailto:aramis@datafast.net.au">aramis@datafast.net.au</a>
<b>One Oak OO-207</b> (503855199800B207)	Graham Wells, One Oak Pty Ltd, PO Box 84, Jerilderie 2716 Ph. 0358 861269, Fax 0358 861792
<b>Streeton 960070</b> (5048241996960070)	Max Kent, RSD 2450, Camperdown 3260 Ph. 0355 970207, Fax 0355 970207 Email: <a href="mailto:maxkent@bigpond.com">maxkent@bigpond.com</a>
<b>The Mountain Dam 94/ND078</b> [LINK SIRE] * (50457219940ND078)	Tom Silcock, T & A Silcock, RMB 8401, Horsham 3401 Ph. 0353 882238, Fax 0353 882235 Email: <a href="mailto:silcock@netconnect.com.au">silcock@netconnect.com.au</a>
<b>The Mountain Dam 96/CC111</b> (50457219960CC111)	Tom Silcock, T & A Silcock, RMB 8401, Horsham 3401 Ph. 0353 882238, Fax 0353 882235 Email: <a href="mailto:silcock@netconnect.com.au">silcock@netconnect.com.au</a>
<b>Toland Poll 99-B282</b> (601082199900B282)	Philip Toland, PC & G Toland, Feltrim Road, RMB 2005, Violet Town 3669 Ph. 0357 981605, Fax 0357 981404, Email: <a href="mailto:toland@origin.net.au">toland@origin.net.au</a>

\* Link Sires — these sires provide the “link” between other Central Test Sire Evaluation Sites and Years and have participated in evaluation of their progeny across more than one site.

**Note: The Mountain Dam is shown as TMD on graphs.**

## **MANAGER'S REPORT – 2000 Drop Progeny**

### ***Ewe Base:***

Ewes for the 2000 trial were selected from “Kerrsville” mixed aged commercial, fine wool Merino breeding ewes. The average adult flock micron at “Kerrsville” in 2000 was 18.5 micron.

### ***2000 Progeny Location:***

The Kerrsville property is run by Robert, Judi and Sam Plush as is located approximately 20kms south of Balmoral, in the Western District of Victoria. Average annual rainfall of 720mm on a predominantly clay loam soil type.

### ***Seasonal Conditions:***

Conditions in early 2000 were marked with severe water supply, although feed was average for this period. By early spring feed conditions were once again in good supply. The lack of good runoff water in the spring of 2000 meant that again during the summer and autumn of 2000/2001 good quality water supply affected young stock dramatically. The 2001 year provided a kinder year with good water runoff for the first time in more than 3 years and plentiful feed. Late rains for the season in November and December 2001 have seen green feed right through to the end of the year.

### ***The Evaluation & Management Program 2000 drop progeny:***

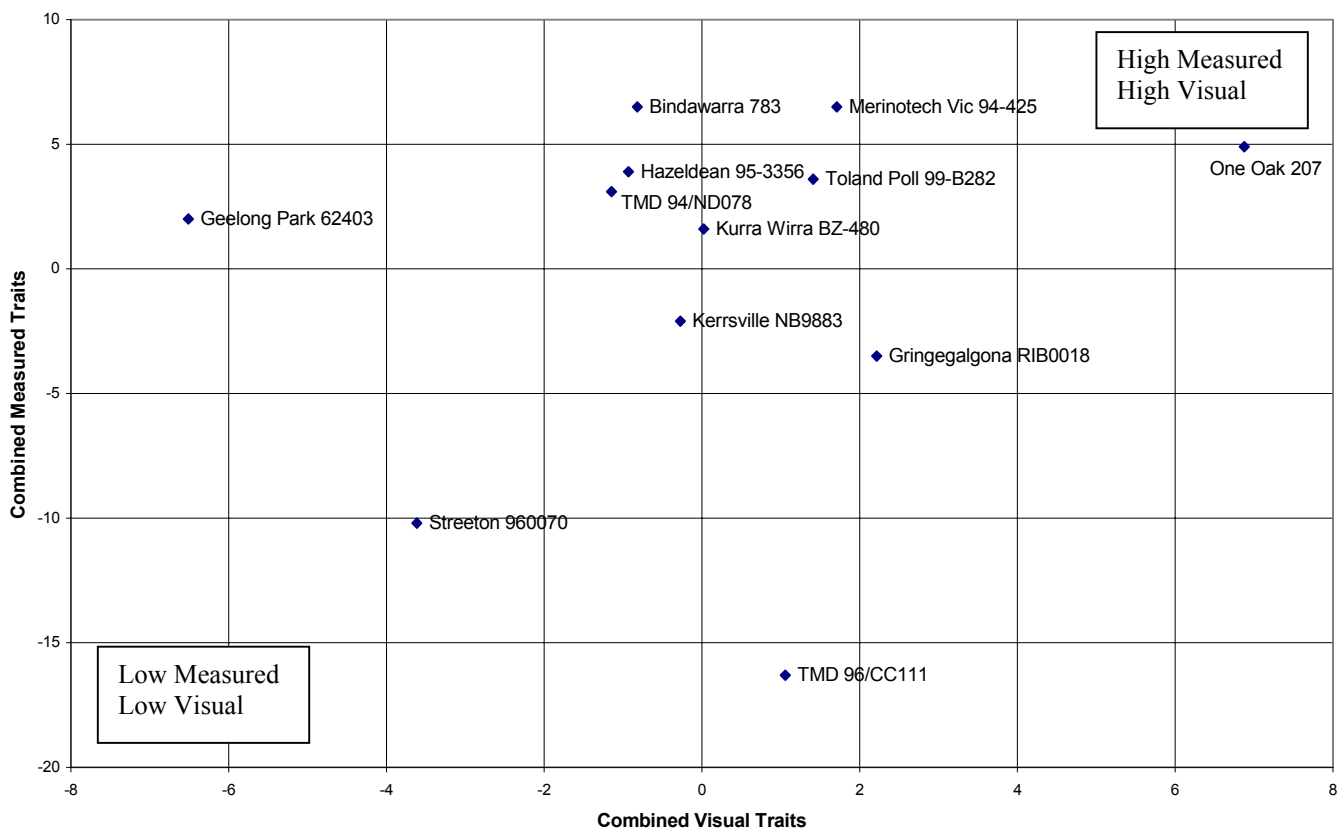
28 <sup>th</sup> March 2000	Commence AI program - Ewes sponged & teasers injected
5 <sup>th</sup> April 2000	1st injection for Teasers
10 <sup>th</sup> /11 <sup>th</sup> April 2000	Pull sponges & inject ewes with PMSG
12 <sup>th</sup> / 13 <sup>th</sup> April 2000	Laparoscopic insemination of 720 ewes, conducted by Brecon Breeders
13 <sup>th</sup> June 2000	Ultrasound/scan ewes by Mark Jenkinson
6 <sup>th</sup> September 2000	Ewes drafted into 24 groups (identifying singles & twins) for lambing
8 <sup>th</sup> September 2000	Ewes commence lambing
16 <sup>th</sup> September 2000	Lambing complete
23 <sup>rd</sup> September 2000	Lamb tagging, scoring and weighing
23 <sup>rd</sup> September 2000	Ewes & lambs returned to full mob
20 <sup>th</sup> October 2000	Mark & Mules lambs, vaccinated 6 in 1/selenium
20 <sup>th</sup> December 2000	Weaned Lambs, drenched, selenium bullets and jetted
December, 2000	Commenced supplementary feeding
April, 2001	Progeny on display at Open Day
26 <sup>th</sup> July, 2001	1 <sup>st</sup> Visual Classing of progeny
13 <sup>th</sup> August, 2001	1 <sup>st</sup> Shearing & body weighing of progeny

### ***Classer for 2000 Drop Progeny***

Mr Mike Skermer

Figure 1: Summary Graph – Combined Measured Traits and Classer's Grade  
2000 drop - 1st Evaluation

Summary Graph using 6% Breeding Objective Index Option.



The RAMPOWER standard indexes:

**3% Index:** Maintain FD while maximising the increase in CFW, maintaining BWT and CV of FD.

**6% Index:** A moderate level of downward pressure on FD, while maintaining a high level of increase in CFW, maintaining BWT and improving CV of FD.

**12% Index:** A high level of downward pressure on FD, while obtaining a small increase in CFW, maintaining BWT and improving CV of FD.

(See page 5 for more information on Breeding Objective index options.)

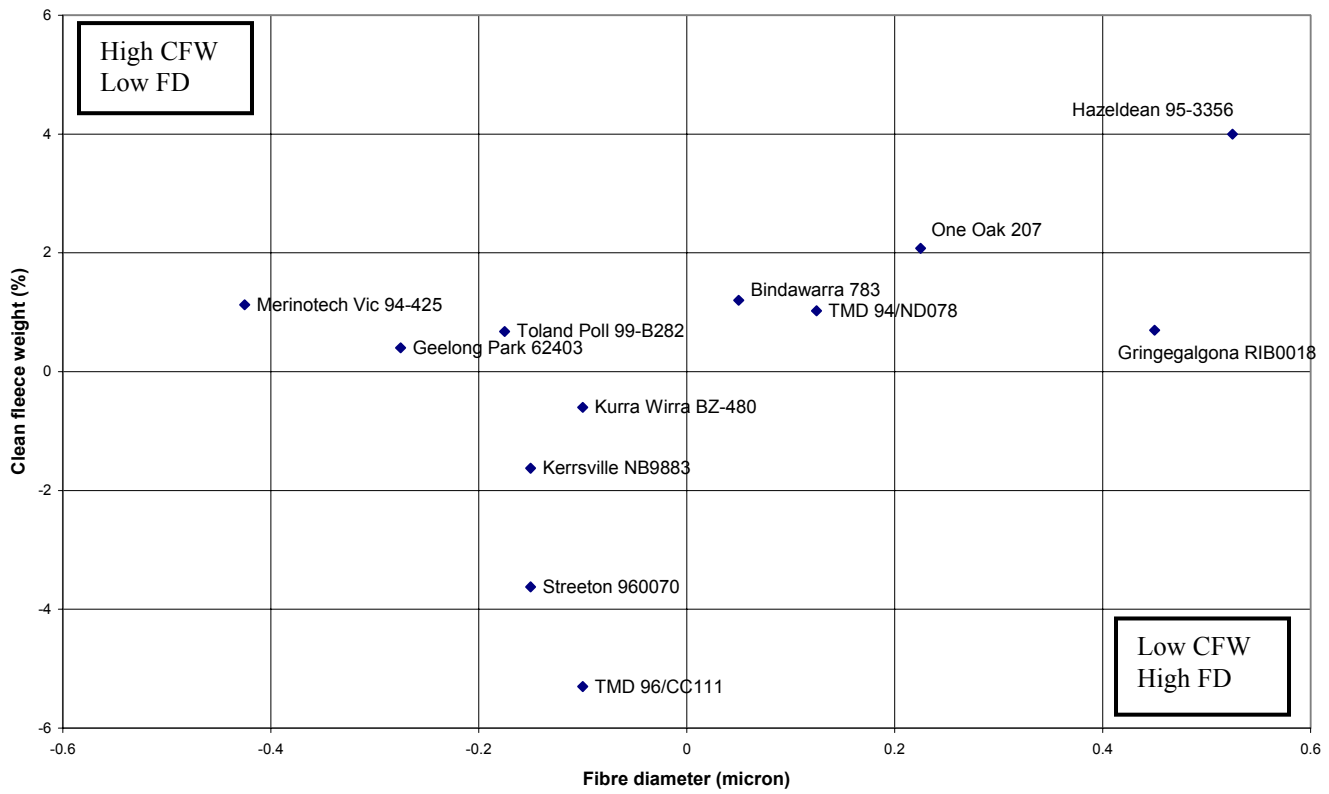
**Table B – RAMPOWER Standard Index Options and Classer’s Grade 2000 Drop - 1st Evaluation**

Sire Identity	No of progeny	RAMPOWER Standard Index Options			Classer’s Grade % <sup>1</sup>		
		3% MP	6% MP	12% MP	Tops	Flocks	Culls
Bindawarra 783	39	107	107	106	33	56	10
Geelong Park 62403	37	102	102	99	5	84	11
Gringegalgon R1B0018	34	101	97	95	41	56	3
Hazeldean 95-3356	40	111	104	98	30	63	8
Kerrsville NB9883	31	95	98	101	29	68	3
Kurra-Wirra BZ-480	34	100	102	102	33	61	6
Merinotech 94-425 *	44	105	107	105	36	64	0
One Oak 207	26	108	105	102	62	38	0
Streeton 960070	33	86	90	96	18	73	9
The Mountain Dam 94/ND078 *	42	104	103	103	24	74	2
The Mountain Dam 96/CC111	37	78	84	94	35	62	3
Toland Poll 99-B282	39	104	104	101	39	55	5
<b>Average</b>	<b>36</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>32</b>	<b>63</b>	<b>5</b>

\* Link Sires

<sup>1</sup> Classer’s Assessment is expressed as a percentage of a sire’s progeny.

Figure 2 - Summary Graph Fleece Weight/Fibre Diameter - 2000 drop - 1st Evaluation



**Tables 1 & 2 – Measured and scored assessments - 2000 drop – 1st Evaluation**

**Table 1. Major Measured Traits & Classer's Grade**

		Estimated Progeny Values				Classer's Grade %		
		GFW%	CFW%	FD um	BWT%	Tops	Flocks	Culls
Sire Identity	No of progeny	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>			
Bindawarra 783	39	-0.5	1.2	0.1	0.5	33	56	10
Geelong Park 62403	37	1.5	0.4	-0.3	1.6	5	84	11
Gringegalgon R1B0018	34	0.4	0.7	0.5	0.7	41	56	3
Hazeldean 95-3356	40	3.5	4.0	0.5	-3.5	30	63	8
Kerrsville NB9883	31	-1.5	-1.6	-0.2	1.4	29	68	3
Kurra-Wirra BZ-480	34	-0.4	-0.6	-0.1	4.1	33	61	6
Merinotech 94-425	44	1.2	1.1	-0.4	-2.9	36	64	0
One Oak 207	26	1.6	2.1	0.2	1.7	62	38	0
Streeton 960070	33	-3.2	-3.6	-0.2	-2.1	18	73	9
The Mountain Dam 94/ND078	42	0.6	1.0	0.1	0.4	24	74	2
The Mountain Dam 96/CC111	37	-3.7	-5.3	-0.1	-3.1	35	62	3
Toland Poll 99-B282	39	0.4	0.7	-0.2	1.1	39	55	5
<b>Average</b>	<b>36</b>	<b>3.2 kg</b>	<b>2.4 kg</b>	<b>17.7 u</b>	<b>31.1 kg</b>	<b>32</b>	<b>63</b>	<b>5</b>

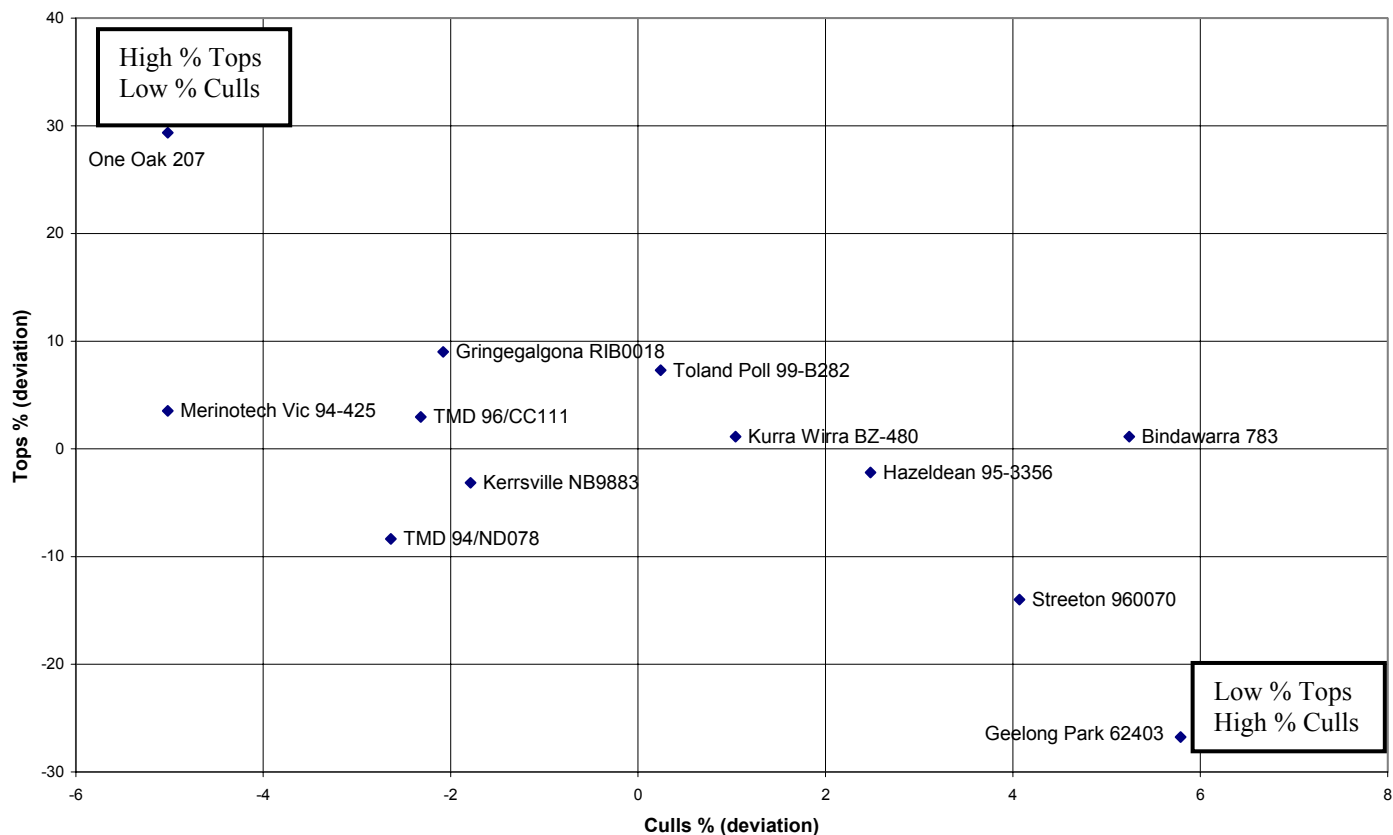
**Table 2. Additional Measured & Scored Trait Information**

Sire Identity	No of progeny	EPVs		Sire Group – Deviation from Average					Fleece Rot	
		Yld % 1 <sup>st</sup>	FDCV % 1 <sup>st</sup>	StpL	SD	Comfort Factor	SpinF	Curv	Score *	% Incidence
Bindawarra 783	39	2.0	-0.4	-0.5	-0.1	0.0	0.0	-6.5	0.03	2.6
Geelong Park 62403	37	-1.4	1.0	5.5	0.2	0.0	0.0	-1.2	0.03	2.7
Gringegalgon R1B0018	34	0.5	-0.5	-2.2	0.0	-0.1	0.4	3.1	0.09	5.9
Hazeldean 95-3356	40	0.2	-0.1	-0.6	0.1	-0.2	0.5	-4.3	0.33	20.5
Kerrsville NB9883	31	-0.1	-0.1	-1.4	0.0	0.2	-0.2	-3.0	0.00	0.0
Kurra-Wirra BZ-480	34	-0.2	-0.2	-2.8	0.0	0.1	-0.1	0.3	0.12	8.8
Merinotech 94-425	44	-0.2	1.1	0.5	0.1	0.0	-0.3	-2.7	0.05	4.7
One Oak 207	26	0.5	-0.3	-1.6	0.0	0.0	0.2	1.5	0.04	3.9
Streeton 960070	33	-0.3	-0.2	2.7	-0.1	0.1	-0.3	2.2	0.09	9.1
The Mountain Dam 94/ND078	42	0.7	-0.4	2.3	-0.1	0.0	0.0	5.4	0.21	16.7
The Mountain Dam 96/CC111	37	-2.2	-0.9	-4.3	-0.3	0.2	-0.4	2.7	0.05	2.7
Toland Poll 99-B282	39	0.4	0.9	2.5	0.2	-0.2	0.1	2.4	0.05	5.3
<b>Average</b>	<b>36</b>	<b>74.8</b>	<b>21.3</b>	<b>90.0</b>	<b>3.8</b>	<b>99.2</b>	<b>17.3</b>	<b>103.2</b>	<b>0.09</b>	<b>6.9</b>

\* Fleece rot - Average score of a sire's progeny, where '0' is best and '5' is worst. Fleece Rot scores from visual classing and shearing:

EPVs = Estimated Progeny Values

**Figure 3 - Summary Graph Classer's Grades – 2000 drop - 1st Evaluation**



**Tables 3 – Classer’s Assessment – 2000 drop – 1st Evaluation**

**Table 3(a) Combined Traits**

Sire Identity	Number of Progeny	Classer’s Grade %			Conformation			Quality		
		Tops	Flocks	Culls	% Pos	% Avg	% Neg	% Pos	% Avg	% Neg
Bindawarra 783	39	33	56	10	3	79	18	46	26	28
Geelong Park 62403	37	5	84	11	0	65	35	16	38	46
Gringegalgonia R1B0018	34	41	56	3	12	59	29	47	21	32
Hazeldean 95-3356	40	30	63	8	0	55	45	33	35	33
Kerrsville NB9883	31	29	68	3	0	74	26	39	19	42
Kurra-Wirra BZ-480	34	33	61	6	3	48	48	42	12	45
Merinotech 94-425	44	36	64	0	2	44	53	63	23	14
One Oak 207	26	62	38	0	8	73	19	69	23	8
Streeton 960070	33	18	73	9	0	73	27	36	27	36
The Mountain Dam 94/ND078	42	24	74	2	0	74	26	36	31	33
The Mountain Dam 96/CC111	37	35	62	3	3	78	19	59	35	5
Toland Poll 99-B282	39	39	55	5	3	62	35	51	24	24
<b>Average</b>	<b>36</b>	<b>32</b>	<b>63</b>	<b>5</b>	<b>3</b>	<b>65</b>	<b>32</b>	<b>45</b>	<b>26</b>	<b>29</b>

Table 3(a) shows the group traits above as an aggregate of Tables 3(b), (c) and (d).

**Table 3(b) Conformation Traits**

Sire Identity	Face cover <sup>1</sup>	Neck/body development <sup>1</sup>	Feet/Legs conformation <sup>1</sup>	Jaw/Mouth conformation % Neg	Back/shoulder conformation % Neg
Bindawarra 783	2.97	3.00	2.90	0.0	2.6
Geelong Park 62403	2.86	3.00	2.73	5.4	2.7
Gringegalgonia R1B0018	2.97	3.00	2.79	0.0	2.9
Hazeldean 95-3356	2.90	3.00	2.65	0.0	10.0
Kerrsville NB9883	3.00	3.00	2.77	0.0	6.5
Kurra-Wirra BZ-480	2.88	3.00	2.58	0.0	0.0
Merinotech 94-425	2.70	2.98	2.60	0.0	9.3
One Oak 207	2.92	2.96	2.96	0.0	3.9
Streeton 960070	2.82	3.00	2.85	0.0	3.0
The Mountain Dam 94/ND078	2.90	2.95	2.83	0.0	4.8
The Mountain Dam 96/CC111	3.00	2.97	2.95	2.7	8.1
Toland Poll 99-B282	2.86	3.00	2.68	0.0	2.7
<b>Average</b>	<b>2.90</b>	<b>2.99</b>	<b>2.77</b>	<b>0.7</b>	<b>4.7</b>

<sup>1</sup> Average score of a sire’s progeny, where ‘5’ is best and ‘1’ is worst

**Table 3(c) Wool Quality Traits**

Sire Identity	Fleece colour <sup>1</sup>	Wool character <sup>1</sup>	Dust penetration /staple weathering <sup>1</sup>	Fleece rot	
				Score <sup>2</sup>	% Incidence
Bindawarra 783	3.05	3.15	3.18	0.03	2.6
Geelong Park 62403	2.84	2.73	2.86	0.03	2.7
Gringegalgonia R1B0018	3.09	3.18	3.29	0.09	5.9
Hazeldean 95-3356	2.80	3.18	3.15	0.33	20.5
Kerrsville NB9883	2.81	3.19	3.26	0.00	0.0
Kurra-Wirra BZ-480	2.88	3.09	3.21	0.12	8.8
Merinotech 94-425	3.02	3.51	3.37	0.05	4.7
One Oak 207	2.96	3.73	3.50	0.04	3.9
Streeton 960070	2.91	3.12	3.12	0.09	9.1
The Mountain Dam 94/ND078	2.83	3.19	3.02	0.21	16.7
The Mountain Dam 96/CC111	3.05	3.49	3.35	0.05	2.7
Toland Poll 99-B282	2.95	3.41	3.16	0.05	5.3
<b>Average</b>	<b>2.93</b>	<b>3.25</b>	<b>3.21</b>	<b>0.09</b>	<b>6.9</b>

<sup>1</sup> Average score of a sire's progeny, where '5' is best and '1' is worst

<sup>2</sup> Fleece rot - Average score of a sire's progeny, where '0' is best and '5' is worst

**Table 3(d) Pigment**

Sire Identity	Pigmented skin % Incidence <sup>1</sup>	Pigmented wool % Incidence <sup>2</sup>	Black lamb / black spot % incidence <sup>2</sup>
Bindawarra 783	2.6	0.0	0.0
Geelong Park 62403	8.1	0.0	0.0
Gringegalgonia R1B0018	29.4	0.0	0.0
Hazeldean 95-3356	7.5	2.5	0.0
Kerrsville NB9883	16.1	3.2	0.0
Kurra-Wirra BZ-480	0.0	0.0	0.0
Merinotech 94-425	9.1	0.0	0.0
One Oak 207	15.4	0.0	0.0
Streeton 960070	45.5	0.0	0.0
The Mountain Dam 94/ND078	2.4	2.4	0.0
The Mountain Dam 96/CC111	10.8	0.0	0.0
Toland Poll 99-B282	28.2	2.6	2.6
<b>Average</b>	<b>14.6</b>	<b>0.9</b>	<b>0.2</b>

<sup>1</sup> Recorded at tagging or classing by committee/classer

<sup>2</sup> Recorded at tagging, classing or shearing by committee/classer

Note: Black spot lambs and 1<sup>st</sup> assessment progeny with pigmented wool were removed from trial at first assessment

## Explanation of Estimated Breeding Values, Estimated Progeny Values and Indexes

### **What are Estimated Breeding Values (EBVs) and Estimated Progeny Values (EPVs) ?**

An Estimated Breeding Value (EBV) is an estimate of the genetic worth, or merit, of an animal for a particular trait. It can be thought of as a picture of an animal's genes for that trait.

Estimated Progeny Values (EPVs) express the expected performance of progeny of a sire, relative to that of other sires in the evaluation. EPVs are simply EBVs divided by two.

EPVs can be calculated for many of the measured traits, eg:

GFW	%	Greasy Fleece Weight (percentage)
CFW	%	Clean Fleece Weight (percentage)
BWT	%	Body Weight (percentage)
FD	µm	Fibre Diameter (micron)
CV	%	Coefficient of Variation of fibre diameter (percentage)

The Greasy Fleece Weight, Clean Fleece Weight and Body Weight EPVs are expressed as a percentage deviation from the average. However, EPVs for these traits could also be expressed in the units of the traits, eg, kgs of wool or kgs of liveweight. Fibre diameter EPVs are expressed in microns as a deviation from the average. Coefficient of Variation of Fibre Diameter EPVs are expressed in percentage units as a deviation.

EPVs are a more accurate indicator of a sire's relative genetic merit than simple sire averages as they take into account:

- the heritability of the trait, ie, how much of the superiority is actually due to the sire's genes and can be passed on to its progeny;
- the number of progeny a sire has in the analysis;
- the measurements of other traits. Where two traits are affected by the same genes (ie, the traits are genetically correlated) the progeny records for both traits give us additional information to make the EPVs for both traits more accurate.
- Non-genetic, or environmental effects. These are factors that influence performance but are not passed on to the progeny. A simple example is that twins tend to be smaller (on average) and cut less wool than single-born lambs: This is not because they have poorer genes for body weight or fleece weight, but because they have had to share their dam's uterus (maternal nutrition) and milk supply (pre-weaning nutrition) with another lamb. Their environment has not (on average) been as good as that experienced by single lambs - this is a non-genetic influence that we need to account for in getting an accurate picture of the value of the genes.

### **Accuracy**

The accuracy of the assessment of the genetic merit of an individual sire by progeny testing is a function of both the heritability of the trait and the number of the sire's progeny assessed.

No of progeny	Heritability					
	0.1	0.2	0.3	0.4	0.5	0.6
5	0.34	0.46	0.54	0.60	0.65	0.68
10	0.45	0.59	0.67	0.73	0.77	0.80
20	0.58	0.72	0.79	0.83	0.86	0.88
30	0.66	0.78	0.84	0.88	0.90	0.92
40	0.71	0.82	0.87	0.90	0.92	0.94
50	0.75	0.85	0.90	0.92	0.94	0.95
100	0.85	0.92	0.94	0.96	0.97	0.97

It should be noted that well designed and run progeny trials should have adequate progeny per sire.

### Examples of using EPVs

	EPV CFW %	EPV FD
Ram 1	+8	-1.2
Ram 2	+1	+0.8

Ram 1 has an EPV for Clean Fleece Weight of +8%. That is, the progeny of Ram 1 are expected to be 7% superior (8.0 - 1.0) for Clean Fleece Weight than the progeny of Ram 2 with an EPV of 1%.

Similarly, Ram 1 has an EPV for Fibre Diameter of -1.2 $\mu$ . Ram 2 has an EPV for Fibre Diameter of +0.8 $\mu$ . The progeny of Ram 1 are expected to be 2 $\mu$  finer (-1.2 - 0.8) than the progeny of Ram 2.

### Sire Averages

Sire Averages are the average performance of all the progeny of a sire. No account is taken of the heritability of the characters. Sire averages are much less reliable predictors of sire performance than are EPVs.

### Breeding Objectives and Index Values

The breeding objective is what you want your breeding program to achieve.

Indexes are just a way of determining which animals most closely match your breeding objective. Three different breeding objectives are:

Breeding Objective or Aim	Index	Micron Premium
Near maximum increase in fleece weight, maintaining fibre diameter	3% MP	3%
Reduce fibre diameter and increase fleece weight	6% MP	6%
Greater reduction in diameter and maintain fleece weight	12% MP	12%

The 3% micron premium index ranks animals with high fleece weights more highly. It is valuable for those breeders who wish to maintain their fibre diameter and place maximum emphasis on increasing the fleece weight of their flock. The 12% micron premium index is useful for breeders who wish to place maximum emphasis on decreasing their flock fibre diameter, without losing fleece weight. A middle view is to use the 6% micron premium index which simultaneously increases fleece weight and decreases fibre diameter.

### Explanation of Micron Premium

Micron premiums are derived from market values and are set by the market. The micron premium tells you how much the price of wool increases if the fibre diameter decreases by one micron.

For example, what is an 8% micron premium? If 20 $\mu$  wool is worth \$5.00/Kg clean and 19 $\mu$  wool is worth \$5.40/kg (a difference of \$0.40) then the micron premium is 40 divided by 500 x 100 = 8%

### Calculation of Index

To calculate an index, the Estimated Breeding Value for each trait is multiplied by its Economic Value (EV). These products are then summed and then added to 100. This can be described mathematically as:

$$\text{Index} = 100 + (\text{EBV}_{\text{trait 1}} \times \text{EV}_{\text{trait 1}}) + (\text{EBV}_{\text{trait 2}} \times \text{EV}_{\text{trait 2}}) + \dots + (\text{EBV}_{\text{trait n}} \times \text{EV}_{\text{trait n}})$$

where there are n traits to be included in the index.

EBV means Estimated Breeding Value

EV means Economic Value.

For further help or explanation please contact:

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