



## Elders VP Victoria Sire Evaluation Group (Balmoral)

### 2001 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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The information in this booklet should not be read in isolation – 2001 drop progeny at time of their first assessment were 11 months of age and shorn with 11 months wool growth. This is the first assessment of the 2001 progeny in the Central Test Evaluation trials and results from this assessment will be reported in *Merino Superior Sires*.

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## CONDUCT OF SIRE EVALUATION SCHEMES

This evaluation is an accredited sire evaluation program run under the guidelines of the Australian Merino Sire Evaluation Association (AMSEA). The established guidelines have been followed to enable an accurate and fair comparison of the merino rams entered allowing the results to be published in the Merino Superior Sires report.

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

Prior to 1998, three previous trials in the Balmoral/Hamilton district are recorded in Merino Superior Sires as B95, HT93, HT94. In 1998 a small group of studbreeders met to form what is now known as the Elders VP Victoria Sire Evaluation Group. Sire Evaluation Trials commenced in 1998 and there are now 5 progeny drops – 1998, 1999, 2000, 2001 and 2002. 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. The 2002-03 trials are being hosted by “Gringegalgona”. All trials are run for a minimum of 2 years.

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 which determined that mature age assessments 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.

The Elders VP Victoria Sire Evaluation Trials aim to inform participants, their clients and interested woolgrowers on events surrounding the trials and in addition to these annual reports, produce periodic newsletters. As well, displays of progeny, data and their fleeces have been on show at the Australian Sheep & Wool Show (1998-2002), 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” 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 Management Committee.

### **The Management Committee:**

Robert Plush	(Chairman)	0355 750208	Email: <a href="mailto:plush1@anson.com.au">plush1@anson.com.au</a>
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David Whyte		0355 722266	
Marion Gibbins	(Manager)	0353 848201	Email: <a href="mailto:mga@netconnect.com.au">mga@netconnect.com.au</a>

### **Host Property for 2001 drop progeny**

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: Susan Jarvis*

December 2002

## 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 any positive score or negative score for one or more traits in that group. So a sheep that has negative comments for 5 traits in the combined conformation score actually contributes exactly the same to the combined score as an animal that has only one negative score. This explains why the % positive and % negative do not add up to 100%.

**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. These progeny are now reported in this document for their first assessment in 2002.

## **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.

## PARTICIPANTS IN THE 2001 TRIAL

### SIRE & OWNER DETAILS

<b>Stud Sire Identity</b>	<b>Contact Name, Address, Phone &amp; Fax No. &amp; Email</b>
<b>Bindawarra Richard 471</b>	Murray & Janet Toland, PO Box 131, Omeo 3898 Ph. 0351 591362, Fax 0351 591361 Email: <a href="mailto:bindawarra@bigpond.com">bindawarra@bigpond.com</a>
<b>Cromarty “Zenith” Green 87</b>	Huntly and Cath Gordon, “Cromarty”, Ben Lomond, NSW 2365 Ph. 0267 332103, Fax 0267 332114 Email <a href="mailto:cath@northnet.com.au">cath@northnet.com.au</a>
<b>Geelong Park 51804</b> (5046961995051804)	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>Glenpaen 161</b>	Miller Family, RMB 7333, Horsham 3401 Ph/Fax: (Bill) 0353 839229, Ph: (Rod) 0353 839227
<b>Gringegalgon N6A1184/99</b> (5030971999N61184)	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 93-1053</b> (5003831993001053)	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>Hazeldean 97-6561</b> (5003831997006561)	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>Hyfield 9.92</b>	Dakin Farms Pty Ltd, Contact Kevin Keatley, RMB 619, Kojonup WA 6395 Ph. 0898 311760, Fax 0898 311763, Email: <a href="mailto:hyfield@wn.com.au">hyfield@wn.com.au</a>
<b>Kerrsville NC0541</b>	Robert Plush, RMB 8203, Coleraine 3315 Ph/Fax 0355 750208 Email: <a href="mailto:plush1@ansonie.com.au">plush1@ansonie.com.au</a>
<b>Kurra-Wirra SR-296</b>	Robert Close, Kurra-Wirra, RMB 9331, Coleraine 3315 Ph. 0355 704238, Fax 0355 704234 Email: <a href="mailto:kurrawirra@ansonie.com.au">kurrawirra@ansonie.com.au</a>
<b>Petali 990905</b>	Martin Oppenheimer, “Petali”, Walcha NSW 2354 Ph: 0267 772124, Fax 02667 771187 Email: <a href="mailto:petali@northnet.com.au">petali@northnet.com.au</a>
<b>Rock-Bank Yellow 41</b>	John & Rhonda Crawford, “Rock-Bank”, Victoria Valley Vic 3294 Ph/Fax: 0355 749241
<b>** The Grange 780060</b>	Multiplex Constructions Pty Ltd, Contact Lukis Blake, PO Box 95, Dongara, WA 6525. Ph. 08 99271250, Fax 08 99272333
<b>The Mountain Dam NL185</b>	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 Blue 253</b> (601082199800B253)	Philip Toland, PC & G Toland, Feltrim Road, RMB 2005, Violet Town 3669 Ph. 0357 981605, Fax 0357 981404, Email: <a href="mailto:toland@hdc.com.au">toland@hdc.com.au</a>

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

# MANAGEMENT REPORT – 2001 Drop Progeny

## **Ewe Base:**

Ewes for the 2001 trial were selected from “Kerrsville” mixed aged commercial, fine wool Merino breeding ewes. The average adult flock micron at “Kerrsville” in 2001 was 18.5 micron.

## **2001 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:**

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 provided green feed right through to the end of the year. The autumn of 2002 caused major management problems with severe rye grass staggers in all sheep but with young weaners being particularly affected. 2002 season has been a mixed year with long dry spells followed by late spring rains with the season finishing in a flourish but with a lack of solid base of feed for the autumn. Stock water quality will continue to be an issue with very little run-off water during the year.

## **The Evaluation & Management Program 2001 drop progeny:**

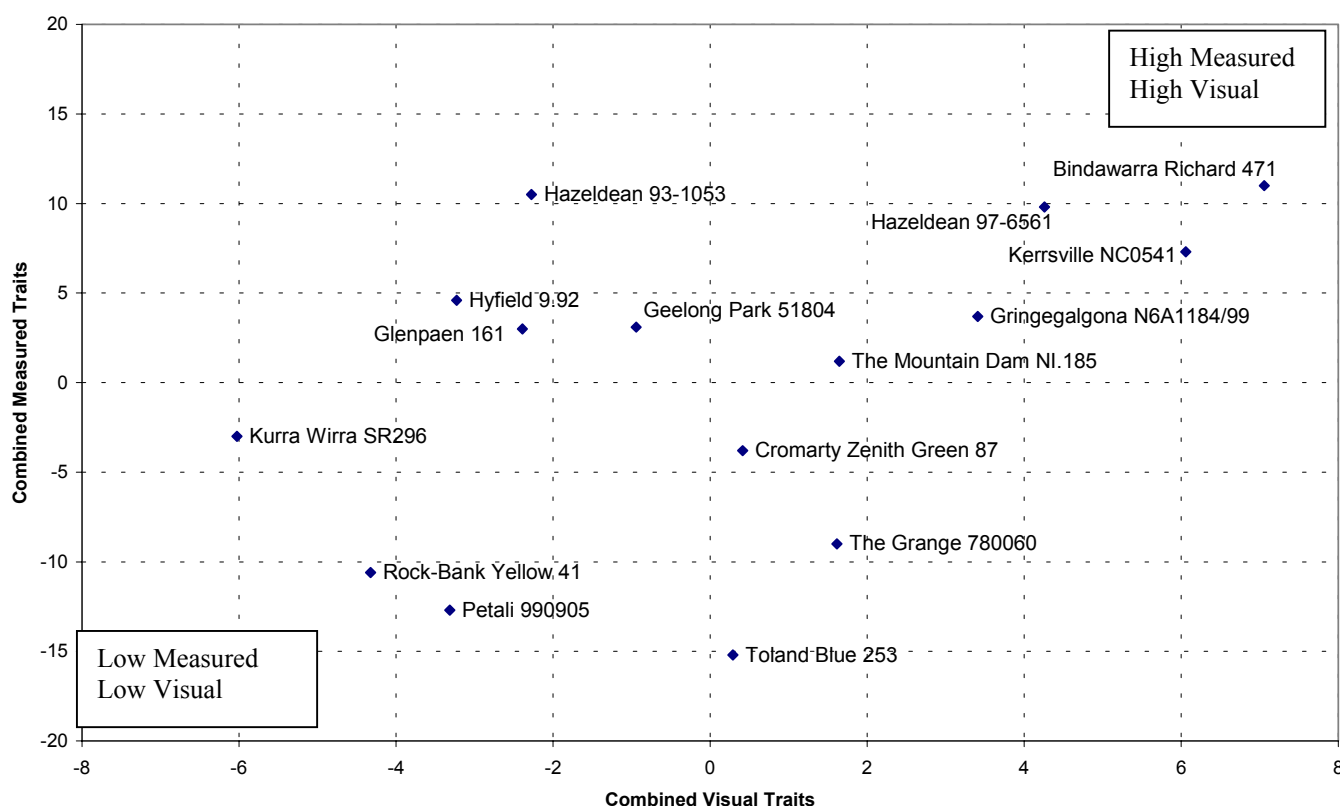
21 <sup>st</sup> March 2001	Commence AI program - Ewes sponged & teasers injected
29 <sup>th</sup> March 2001	1st injection for Teasers
3 <sup>rd</sup> /4 <sup>th</sup> April 2001	Pull sponges & inject ewes with PMSG
5 <sup>th</sup> / 6 <sup>th</sup> April 2001	Laparoscopic insemination of ewes, conducted by Brecon Breeders
6 <sup>th</sup> June 2001	Ultrasound/scan ewes by Mark Jenkinson
30 <sup>th</sup> August 2001	Ewes drafted into sire groups (identifying singles & twins) for lambing
1 <sup>st</sup> September 2001	Ewes commence lambing
8 <sup>th</sup> September 2001	Lambing complete, commence tagging
15 <sup>th</sup> September 2001	Complete Lamb tagging, scoring and weighing
15 <sup>th</sup> September 2001	Ewes & lambs returned to full mob
13 <sup>th</sup> October 2001	Mark & Mules lambs, vaccinated 6 in 1/selenium
13 <sup>th</sup> December 2001	Weaned Lambs, drenched, selenium bullets and jetted
April, 2002	Progeny on display at Open Day
26 & 30 <sup>th</sup> July, 2002	1 <sup>st</sup> Visual Classing of progeny (10 months)
13 <sup>th</sup> August, 2002	1 <sup>st</sup> Shearing & body weighing (11 months wool)

## **Classer for 2001 Drop Progeny**

Mr Peter Cameron

Figure 1: Summary Graph – Combined Measured Traits and Classer's Grade  
2001 drop – 1<sup>st</sup> 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.

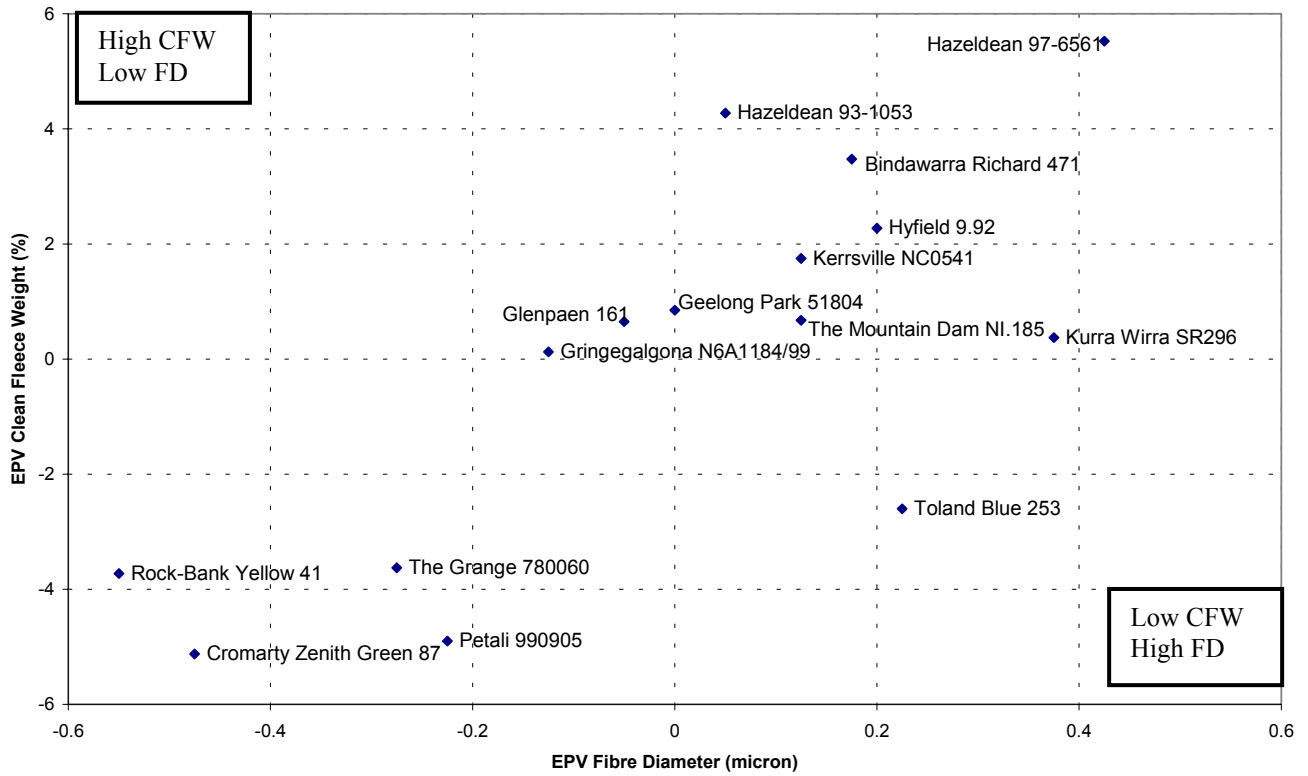
**Table B – RAMPOWER Standard Index Options and Classer’s Grade 2001 Drop -  
1<sup>st</sup> Evaluation**

		RAMPOWER			Classer’s Grade %		
		Standard Index Options					
Sire Identity	No of progeny	3% MP	6% MP	12% MP	Tops	Flocks	Culls
Bindawarra Richard 471	30	114	111	107	40	50	10
Cromarty Zenith Green 87	34	86	96	109	10	77	13
Geelong Park 51804	41	103	103	103	15	60	25
Glenpaen 161	29	103	103	103	24	34	41
Gringegalgonia N6A1184/99	34	101	104	106	26	59	15
Hazeldean 93-1053	36	115	111	102	11	61	28
Hazeldean 97-6561	25	118	110	100	28	60	12
Hyfield 9.92	28	108	105	100	7	64	29
Kerrsville NC0541	37	109	107	106	42	42	17
Kurra Wirra SR296	52	99	97	98	6	52	42
Petali 990905	36	82	87	94	9	59	31
Rock-Bank Yellow 41	26	84	89	93	4	65	31
The Grange 780060	36	88	91	94	17	69	14
The Mountain Dam NI.185	34	102	101	100	24	56	21
Toland Blue 253	26	87	85	85	23	50	27
<b>Average</b>	<b>32</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>19</b>	<b>57</b>	<b>24</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 - 2001 drop - 1<sup>st</sup> Evaluation



**Tables 1 & 2 – Measured and scored assessments - 2001 drop – 1<sup>st</sup> Evaluation**

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

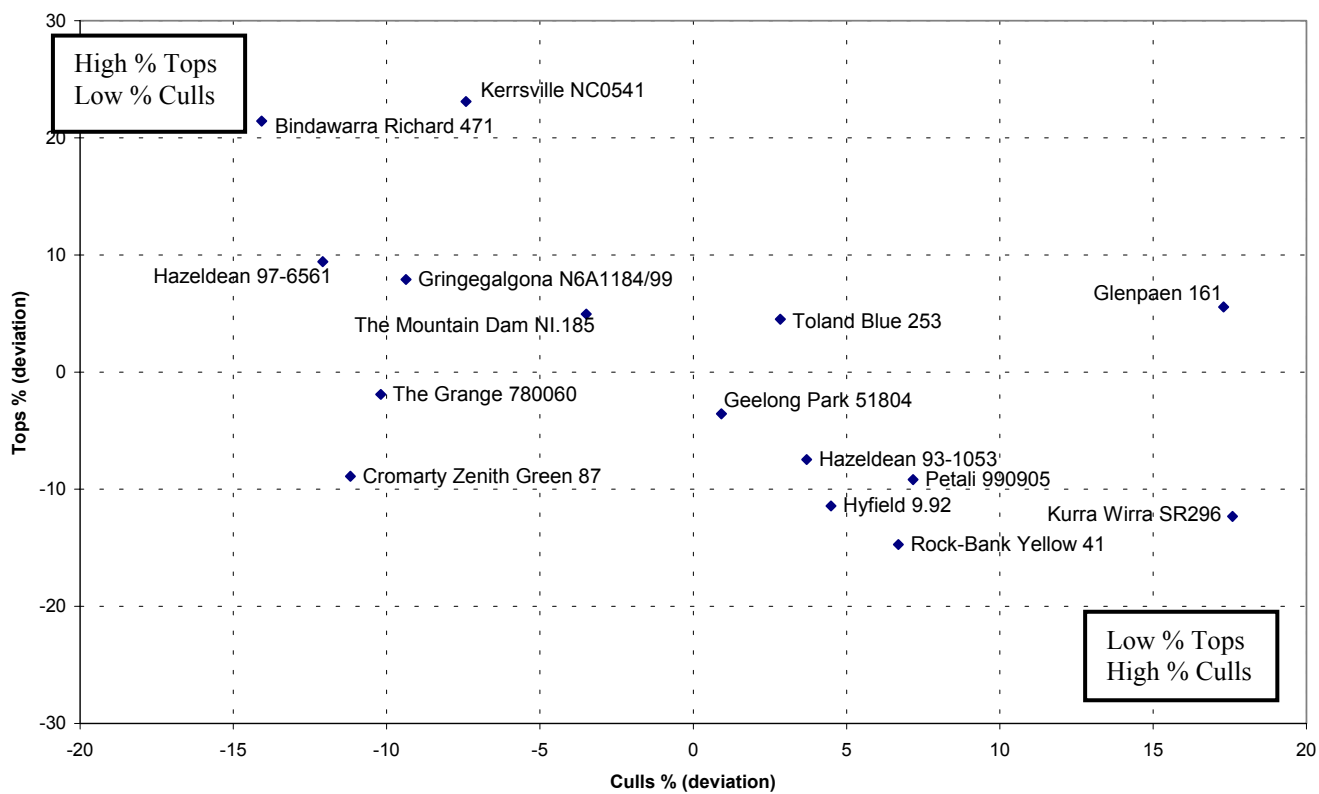
		Estimated Progeny Values				Classer's Grade		
		GFW	CFW	FD um	BWT	Tops	Flocks	Culls
Sire Identity	No of progeny	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>	1 <sup>st</sup>			
Bindawarra Richard 471	30	3.3	3.5	0.2	1.1	40	50	10
Cromarty Zenith Green 87	34	-5.6	-5.1	-0.5	1.6	10	77	13
Geelong Park 51804	41	1.2	0.9	0.0	-0.1	15	60	25
Glenpaen 161	29	-0.6	0.7	-0.1	-3.9	24	34	41
Gringegalgonia N6A1184/99	34	1.1	0.1	-0.1	0.8	26	59	15
Hazeldean 93-1053	36	5.4	4.3	0.1	1.7	11	61	28
Hazeldean 97-6561	25	5.8	5.5	0.4	-0.4	28	60	12
Hyfield 9.92	28	2.1	2.3	0.2	1.9	7	64	29
Kerrsville NC0541	37	0.6	1.8	0.1	2.1	42	42	17
Kurra Wirra SR296	52	-0.1	0.4	0.4	-1.6	6	52	42
Petali 990905	36	-4.9	-4.9	-0.2	0.1	9	59	31
Rock-Bank Yellow 41	26	-2.9	-3.7	-0.6	-5.1	4	65	31
The Grange 780060	36	-4.1	-3.6	-0.3	0.8	17	69	14
The Mountain Dam NI.185	34	0.7	0.7	0.1	0.6	24	56	21
Toland Blue 253	26	-1.9	-2.6	0.2	0.4	23	50	27
Average	32	2.32 kg	1.74 kg	15.4 μ	20.2 kg	19	57	24

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

Sire Identity	No of progeny	EPVs		Sire Group – Deviation from Average					Fleece Rot	
		Yld % 1st	FDCV % 1 <sup>st</sup>	StpL	SD	Comfort Factor	SpinF	Curv	Score *	% Incidence
Bindawarra Richard 471	30	0.2	-0.4	9.5	-0.1	0.0	0.0	-5.7	0.23	16.7
Cromarty Zenith Green 87	34	1.3	-1.2	1.7	-0.4	0.1	-0.7	6.0	0.12	11.8
Geelong Park 51804	41	-0.6	-0.2	3.8	0.0	0.0	0.0	-0.1	0.24	22.0
Glenpaen 161	29	2.0	0.1	-3.2	0.0	0.1	-0.1	-1.9	0.17	13.8
Gringegalgonia N6A1184/99	34	-1.4	-0.5	-1.0	-0.2	0.1	-0.3	0.4	0.53	44.1
Hazeldean 93-1053	36	-1.7	0.7	6.6	0.2	-0.1	0.3	-3.4	0.39	30.6
Hazeldean 97-6561	25	-0.7	0.3	5.0	0.2	-0.1	0.5	-6.4	0.48	32.0
Hyfield 9.92	28	0.3	0.1	0.1	0.1	0.0	0.3	-2.3	0.36	25.0
Kerrsville NC0541	37	1.5	-0.5	1.4	-0.1	0.0	0.0	-1.1	0.32	24.3
Kurra Wirra SR296	52	0.4	-0.8	-4.3	-0.1	0.0	0.2	0.2	0.15	9.6
Petali 990905	36	0.2	0.1	-6.8	0.0	0.0	-0.2	3.7	0.31	22.2
Rock-Bank Yellow 41	26	-1.4	1.4	-6.8	0.2	0.1	-0.3	3.6	0.19	15.4
The Grange 780060	36	0.9	0.8	-1.6	0.2	0.0	0.0	6.3	0.14	11.1
The Mountain Dam NI.185	34	-0.3	-0.3	-1.0	0.0	0.0	0.1	0.9	0.38	32.4
Toland Blue 253	26	-0.7	0.5	-3.0	0.2	-0.1	0.5	-3.6	0.08	7.7
	32	74.96	20.91	75.3	3.2	99.6	15.0	123.8	0.27	21.0

\* 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. \*\* Incidence shows any degree of fleece rot.  
EPVs = Estimated Progeny Values

Figure 3 - Summary Graph Classer's Grades – 2001 drop -  
1<sup>st</sup> Evaluation



**Tables 3 – Classer’s Assessment – 2001 drop – 1<sup>st</sup> Evaluation**

**Table 3(a) Combined Traits**

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

Sire Identity	Number of Progeny	Classer’s Grade			Conformation		Quality	
		Tops	Flocks	Culls	% Pos	% Neg	% Pos	% Neg
Bindawarra Richard 471	30	40	50	10	100	0	83	3
Cromarty Zenith Green 87	34	10	77	13	90	6	81	3
Geelong Park 51804	41	15	60	25	100	3	53	8
Glenpaen 161	29	24	34	41	100	17	62	14
Gringegalgonia N6A1184/99	34	26	59	15	100	3	59	3
Hazeldean 93-1053	36	11	61	28	94	0	25	17
Hazeldean 97-6561	25	28	60	12	96	0	28	4
Hyfield 9.92	28	7	64	29	93	7	32	18
Kerrsville NC0541	37	42	42	17	100	3	72	3
Kurra Wirra SR296	52	6	52	42	92	15	69	6
Petali 990905	36	9	59	31	97	6	59	9
Rock-Bank Yellow 41	26	4	65	31	96	15	42	15
The Grange 780060	36	17	69	14	100	0	61	11
The Mountain Dam NI.185	34	24	56	21	97	6	74	9
Toland Blue 253	26	23	50	27	96	12	73	4
Average	32	19	57	24	97	6	59	8

**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 conformation % Neg	Back/shoulder Conformation % Neg
Bindawarra Richard 471	4.80	4.57	4.77	0.0	0.0
Cromarty Zenith Green 87	4.23	4.42	4.55	0.0	0.0
Geelong Park 51804	4.58	4.40	4.80	0.0	0.0
Glenpaen 161	3.79	3.93	4.59	0.0	3.5
Gringegalgonia N6A1184/99	4.26	4.44	4.76	2.9	0.0
Hazeldean 93-1053	4.31	4.14	4.47	0.0	0.0
Hazeldean 97-6561	4.40	4.52	4.56	0.0	0.0
Hyfield 9.92	4.07	4.25	4.54	0.0	0.0
Kerrsville NC0541	4.56	4.58	4.69	0.0	0.0
Kurra Wirra SR296	3.71	4.06	4.52	0.0	2.1
Petali 990905	4.25	4.22	4.69	0.0	0.0
Rock-Bank Yellow 41	3.96	4.15	4.35	0.0	3.9
The Grange 780060	4.61	4.53	4.53	0.0	0.0
The Mountain Dam NI.185	4.47	4.56	4.79	2.9	0.0
Toland Blue 253	3.96	4.08	4.46	0.0	0.0
Average	4.27	4.32	4.61	0.4	0.6

<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 Richard 471	4.73	4.17	4.23	0.23	16.7
Cromarty Zenith Green 87	4.77	4.00	3.94	0.12	11.8
Geelong Park 51804	4.38	3.83	3.53	0.24	22.0
Glenpaen 161	4.45	3.97	3.66	0.17	13.8
Gringegalgonia N6A1184/99	4.50	3.97	3.97	0.53	44.1
Hazeldean 93-1053	3.94	3.53	3.39	0.39	30.6
Hazeldean 97-6561	4.12	3.80	3.60	0.48	32.0
Hyfield 9.92	4.04	3.82	3.39	0.36	25.0
Kerrsville NC0541	4.61	4.08	3.94	0.32	24.3
Kurra Wirra SR296	4.54	4.06	3.77	0.15	9.6
Petali 990905	4.53	3.69	3.65	0.31	22.2
Rock-Bank Yellow 41	4.27	3.19	3.62	0.19	15.4
The Grange 780060	4.58	3.33	3.61	0.14	11.1
The Mountain Dam NI.185	4.62	4.00	4.06	0.38	32.4
Toland Blue 253	4.65	3.85	3.88	0.08	7.7
Average	4.46	3.83	3.75	0.27	21.0

<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 Richard 471	14.6	2.4	0.0
Cromarty Zenith Green 87	2.6	0.0	0.0
Geelong Park 51804	42.6	4.3	0.0
Glenpaen 161	4.4	0.0	0.0
Gringegalgonia N6A1184/99	9.1	2.3	0.0
Hazeldean 93-1053	44.2	0.0	0.0
Hazeldean 97-6561	72.7	0.0	0.0
Hyfield 9.92	20.0	0.0	0.0
Kerrsville NC0541	17.0	0.0	0.0
Kurra Wirra SR296	13.6	3.4	0.0
Petali 990905	6.1	0.0	0.0
Rock-Bank Yellow 41	52.6	2.6	0.0
The Grange 780060	22.5	2.0	0.0
The Mountain Dam NI.185	16.7	2.4	0.0
Toland Blue 253	9.8	2.4	0.0
Average	22.1	1.5	0.0

<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

**Table 4 – Raw Data – 2001 drop – 1<sup>st</sup> Evaluation**

Sire	Count of Tags	Animals with measured data	Average of GFW	Average of CFW	Average of FD	Average of BWT	Average of YLD	Average of CV
Bindawarra Richard 471	41	30	2.53	1.89	15.51	20.62	75.17	20.19
Cromarty Zenith Green 87	39	34	2.08	1.59	14.83	20.22	76.31	19.25
Geelong Park 51804	47	41	2.37	1.76	15.37	19.95	74.32	20.70
Glenpaen 161	46	29	2.28	1.75	15.22	18.62	77.18	21.04
Gringegalgonia N6A1184/99	44	34	2.40	1.76	15.21	20.46	73.33	20.16
Hazeldean 93-1053	43	36	2.62	1.91	15.52	21.32	73.07	21.95
Hazeldean 97-6561	33	25	2.67	1.98	15.83	21.00	74.11	21.27
Hyfield 9.92	35	28	2.47	1.86	15.63	21.29	75.26	21.06
Kerrsville NC0541	47	37	2.36	1.81	15.51	20.89	76.61	20.31
Kurra Wirra SR296	59	52	2.26	1.70	15.69	19.51	75.33	19.72
Petali 990905	49	36	2.07	1.56	15.17	19.92	75.15	21.24
Rock-Bank Yellow 41	38	26	2.17	1.61	14.75	17.92	73.27	23.37
The Grange 780060	49	36	2.11	1.60	15.20	20.33	75.93	22.32
The Mountain Dam NI.185	42	34	2.35	1.76	15.51	20.37	74.59	20.53
Toland Blue 253	41	26	2.19	1.62	15.69	20.40	74.15	22.01
<b>Grand Total</b>	<b>653</b>	<b>504</b>	<b>2.32</b>	<b>1.74</b>	<b>15.38</b>	<b>20.19</b>	<b>74.96</b>	<b>20.91</b>

**Table 5 – Group Average Staple Strength Raw Data - 2001 drop – 1<sup>st</sup> Evaluation**

Random samples from each sire group were taken from mid-side samples and tested for staple strength and are reported below.

Sire	Strength N/Kt	Place of Break	% of Break
Bindawarra Richard 471	37.3	Mid	54
Cromarty Zenith Green 87	45.8	Mid	56.5
Geelong Park 51804	31.5	Mid	48
Glenpaen 161	39.5	Mid	59.5
Gringegalgonia N6A1184/99	41.5	Mid	51.3
Hazeldean 93-1053	37.0	Mid	50
Hazeldean 97-6561	37.4	Mid	50
Hyfield 9.92	43.5	Mid	55.5
Kerrsville NC0541	44.7	Mid	57
Kurra-Wirra SR-296	44.1	Mid	50.5
Petali 990905	37.4	Mid	53
Rock-Bank Yellow 41	39.6	Mid	57.5
The Grange 780060	25.3	Mid	51.5
The Mountain Dam 98/NI.185	36.5	Mid	51.5
Toland Blue 253	41.4	Mid	60.5

# 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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