



Elders VP Victoria Sire Evaluation Group (Balmoral)

2001 Drop 2nd Evaluation of Progeny at 23 months

12 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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CONTENTS

The information in this booklet should not be read in isolation – 2001 drop progeny at time of their second assessment were 23 months of age and shorn with 12 months wool growth. This is the second and final assessment of the 2001 progeny in the Central Test Evaluation trials and results from this assessment will be reported in *Merino Superior Sires*.

	Page
CONDUCT OF SIRE EVALUATION SCHEMES	
Elders VP Victoria Sire Evaluation Group Management Committee Host Properties Understanding the graphs & tables of results	4
PARTICIPANTS IN 2000 TRIAL	
Sire & Owner Summary	7
MANAGEMENT REPORT	
Main events Calendar	8
PRESENTATION OF RESULTS	
2001 drop – 2nd year evaluation results:	
Summary:	
Figure 1: Summary Graph: Combined Measured Traits & Classer's Grades	9
Table B: Rampower Index Options & Classer's Grades	10
Figure 2: Summary Graph: Fleece Weight/Fibre Diameter	11
Figure 3: Summary Graph: Classer's Grades	13
Detailed Information:	
Table 1: Major Measured Traits and Classer's Grade Performance	12
Table 2: Additional Measured & Scored Trait Performance	12
Tables 3 a,b,c,d: Classer's Assessments	14
Table 4: Raw data	16
Table 5: Group average staple length and staple strength	16
Group visual classing	17
Appendix	18
Explanation of Estimated Breeding Values, Estimated Progeny Values & Indexes (Susan Jarvis)	

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, there were three previous trials in the Balmoral/Hamilton district which are recorded in Merino Superior Sires as B95, HT93, HT94. In 1998 a small group of studbreeders met to form what is now known as the Elders VP Victoria Sire Evaluation Group. The Sire Evaluation Trials commenced in 1998 and there are now 6 progeny drops – 1998, 1999, 2000, 2001 and 2002 & 2003. All trials are run for a minimum of 2 years.

- 1998 & 1999 drop – Host property ‘The Mountain Dam’, Balmoral
- 2000 & 2001 drop - Host property ‘Kerrsville’, situated between Balmoral and Coleraine
- 2002 & 2003 drop – Host property ‘Gringegalgona’ at Balmoral.
- New host property for 2004 & 2005 is ‘Arundale’ at Balmoral

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 evaluate and promote leading sires suited to fine wool production in Western Victoria.

This goal is achieved by informing participants, their clients and interested woolgrowers on events surrounding the trials and in addition to this; produce and distribute annual reports and periodic newsletters. To further promote the evaluation, displays of progeny, data and their fleeces have been on show at the Australian Sheep & Wool Show (1998-2002), 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’, ‘Kerrsville’ and ‘Gringegalgona’ 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:

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Colin & Jill Frawley		03 5578 6334	wirra@anson.com.au
Angela Byron	(Manager)	03 5588 1338	narallee@inet.net.au

Host Property for 2001 drop progeny

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.

Report writing & production: Elders VP Victoria Sire Evaluation Group
Data analysis: Susan Jarvis
December 2003

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:	<table><tr><td>GFW%</td><td>Greasy Fleece Weight (percentage)</td></tr><tr><td>CFW%</td><td>Clean Fleece Weight (percentage)</td></tr><tr><td>FD</td><td>Average Fibre diameter (micron)</td></tr><tr><td>BWT%</td><td>Body Weight (percentage)</td></tr><tr><td>CV%</td><td>Co-efficient of variation of fibre diameter</td></tr><tr><td>Yld%</td><td>Washing yield of the midside sample</td></tr></table>	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
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												
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>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.</p> <p>Face – Scored 1 to 5, '1' being muffled, '2' being less muffled.</p> <p>Shoulders/back – Scored 1-5, with '1' being worst and '5' best. Reported as percentage of progeny with scores '1' and '2'.</p> <p>Feet/legs – Scored 1 – 5, '1' being worst, '2' having slight problem.</p> <p>Neck/body development – Scored 1 – 5, '1' being worst (too heavy or too plain), '2' having slight problem.</p> <p>Mouth/Jaw – 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>Wool Colour – Scored 1 to 5, '1' being extreme colour, '3' being average/good, '5' being excellent white/bright</p> <p>Wool Character – Scored 1 to 5, where '5' is best, '1' is worst.</p> <p>Dust penetration/staple weathering - Scored 1 to 5, where '5' is best, '1' is worst.</p> <p>Pigmentation: Black Lambs: recessive coloured: largely pigmented wool or if extensively white, are pigmented around the eyes and more of less symmetrical pigmentation on the rest of the body; noted as the number of lambs recorded as such and the percentage of incidence within each sire group.</p> <p>Skin Pigmentation: significant degree of pigmented skin on <u>non</u> wool growing areas. (typically smutty nose/brown rimmed eyes), reported as percentage of progeny with skin pigmentation</p> <p>Wool Pigmentation: pigmented wool in random spots <u>or</u> isolated pigment <u>or</u> pigmented birthcoat, halo-hair, <u>or</u> pigmented leg hair <u>or</u> Black Lamb, noted at shearing and shown as a percentage of progeny with wool pigmentation.</p> <p>Fleece Rot – Scored 0 to 5, '0' is no fleece rot, '1' slight fleece rot, '5' is extreme.</p> <p>Incidence of Fleece rot 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 2nd 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%, Yld, 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.

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

Stud Sire Identity	Contact Name, Address, Phone & Fax No. & Email
Bindawarra 471 “Richard” 50 3892 1998 000471	Murray & Janet Toland, PO Box 131, Omeo 3898 Ph. 03 5159 1362, Fax 03 5159 1361
Cromarty Zenith Green 87 60 1277 1997 0087	Huntly and Cath Gordon, ‘Cromarty’ Ben Lomond, NSW 2365 Ph 02 6733 2103, Fax 02 6733 2114 Email: cath@northnet.com.au
Geelong Park 51804 5046961995051804	Roxby Park Primary Producers, c/- Mackinnon Project, Werribee 3030 Ph. 03 9731 2225, Fax 03 9731 2388 Email: a.vizard@vet.unimelb.edu.au
Glenpaen 161 50 4654 1998 07E161	Miller Family , RMB 7333, Horsham 3401 Ph/Fax: (Bill) 03 5383 9229, Ph (Rod) 03 5383 9227
Gringegalgona N6A1184/99 5030971999N61184	Stephen Silcock, Gringegalgona Stud Partnership, RMB 365, Balmoral 3407 Ph. 03 5574 3202, Fax 03 5574 3239 Email: sjsilcock@bigpond.com
* Hazeldean 93-1053 5003831997006561	Jim Litchfield, Hazeldean Pty. Ltd., Cooma 2630 Ph. 02 6453 5555, Fax 02 6453 5526 Email litchfield@hazeldean.com.au
Hazeldean 97-6561 5003831997006561	Jim Litchfield, Hazeldean Pty. Ltd., Cooma 2630 Ph. 02 6453 5555, Fax 02 6453 5526 Email litchfield@hazeldean.com.au
Hyfield 9.92 50 1774 1999 990092	Dakin Farms Pty Ltd, Contact Kevin Keatley, RMB 619 Kojonup WA 6395 Ph. 08 9831 1760, Fax 08 9831 1763 hyfield@wn.com.au
Kerrsville NC0541 50 3509 2000 00541	Robert Plush, RMB 8203, Coleraine 3315 Ph/Fax 03 5575 0208 Email: plush1@ansoniacom.au
Kurra-Wirra SR-296 50 4173 1999 0SR296	Robert Close, Kurra-Wirra, RMB 9331, Coleraine 3315 Ph. 03 5570 4238, Fax 03 5570 4234 Email: kurrawirra@ansoniacom.au
Petali 990905 50 3054 1999 990905	Martin Oppenheimer , ‘Petali’ Walcha NSW 2354 Ph. 02 6777 2124, Fax 02 6677 1187 Email: petali@northnet.com.au
Rock-Bank Yellow 41 50 3699 1990 000Y41	John & Rhonda Crawford, ‘Rock-Bank’, Victoria Valley VIC 3294 Ph/fax: 03 5574 9241
* The Grange 780060 50 4670 1997 780060	Multiplex Constructions Pty Ltd, Contact Lukis Blake, PO Box 95 Dongara WA 6525 Ph. 08 9927 1250, Fax 08 9927 2333
The Mountain Dam Ni.185 50 4572 1998 0NI185	Tom Silcock, T & A Silcock, RMB 8401, Horsham 3401 Ph. 03 5388 2238, Fax 03 5388 2235 Email: silcock@netconnect.com.au
Toland Blue 253 60 1082 1998 00B253	Philip Toland, PC & G Toland, Feltrim Road, RMB 2005, Violet Town 3669 Ph. 03 5798 1605, Fax 03 5798 1404, Email: toland@origin.net.au

* 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 2001/02 year provided a kinder year with good water run off 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.

2002/03 was an average autumn for feed quality but during the winter months there was a distinct lack of feed. The sheep had a struggle until spring which resulted in lighter body weights.

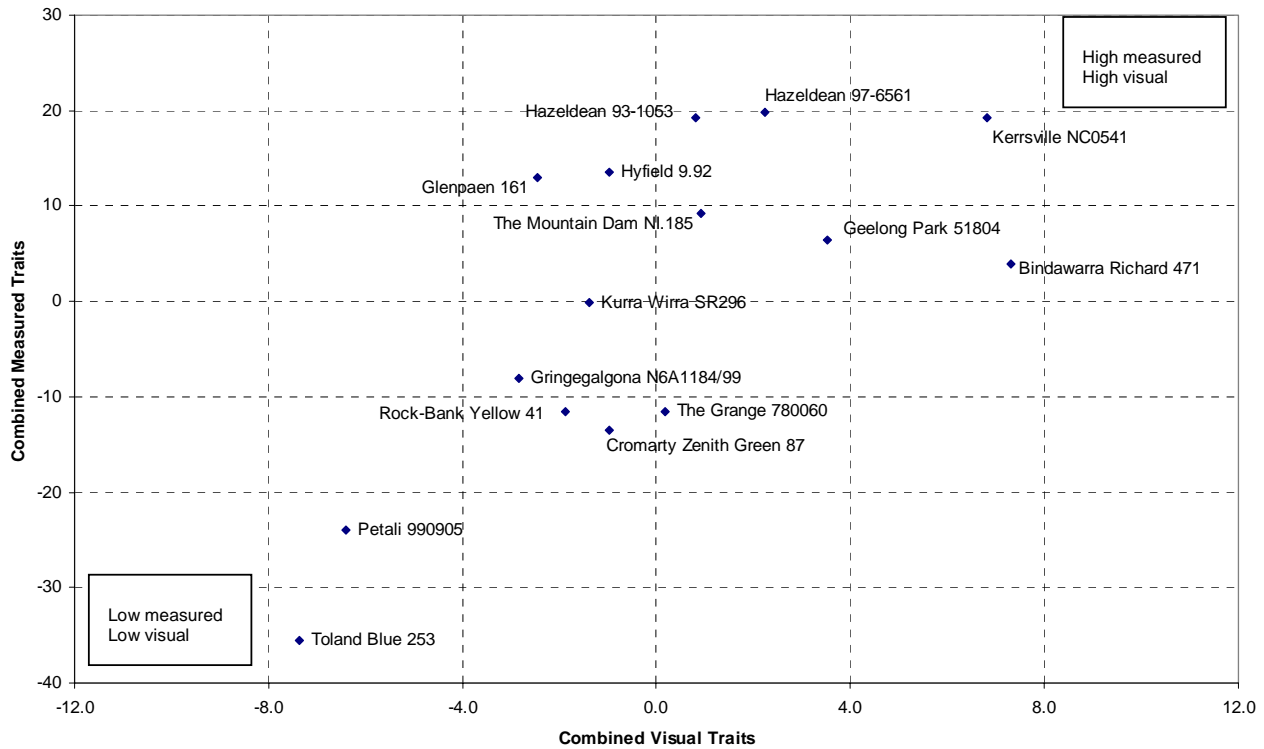
The Evaluation & Management Program 2001 drop progeny:

28 th March 2001	Commence AI program - Ewes sponged & teasers injected
5 th April 2001	1st injection for Teasers
10 th /11 th April 2001	Pull sponges & inject ewes with PMSG
12 th / 13 th April 2001	Laparoscopic insemination of 720 ewes, conducted by Brecon Breeders
13 th June 2001	Ultrasound/scan ewes by Mark Jenkinson
6 th September 2001	Ewes drafted into 30 groups (identifying singles & twins) for lambing
8 th September 2001	Ewes commence lambing
16 th September 2001	Lambing complete
23 rd September 2001	Lamb tagging, scoring and weighing
23 rd September 2001	Ewes & lambs returned to full mob
20 th October 2001	Mark & Mules lambs, vaccinated 6 in 1/selenium
20 th December 2001	Weaned Lambs, drenched, selenium bullets and jetted
April, 2002	Progeny on display at Open Day
30 th July, 2002	1 st Visual Classing of progeny (11 months)
13 th August, 2002	1 st Shearing & body weighing (11 months wool)
27 th July 2003	2 nd Visual classing of progeny (22 months wool)
8 th August 2003	2 nd Shearing & body weighing (23 months wool)

Classer for 2001 Drop Progeny

Mr Peter Cameron

Figure 1: Summary Graph – Combined Measured Traits and Classer's Grade
2001 drop – 2nd 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.

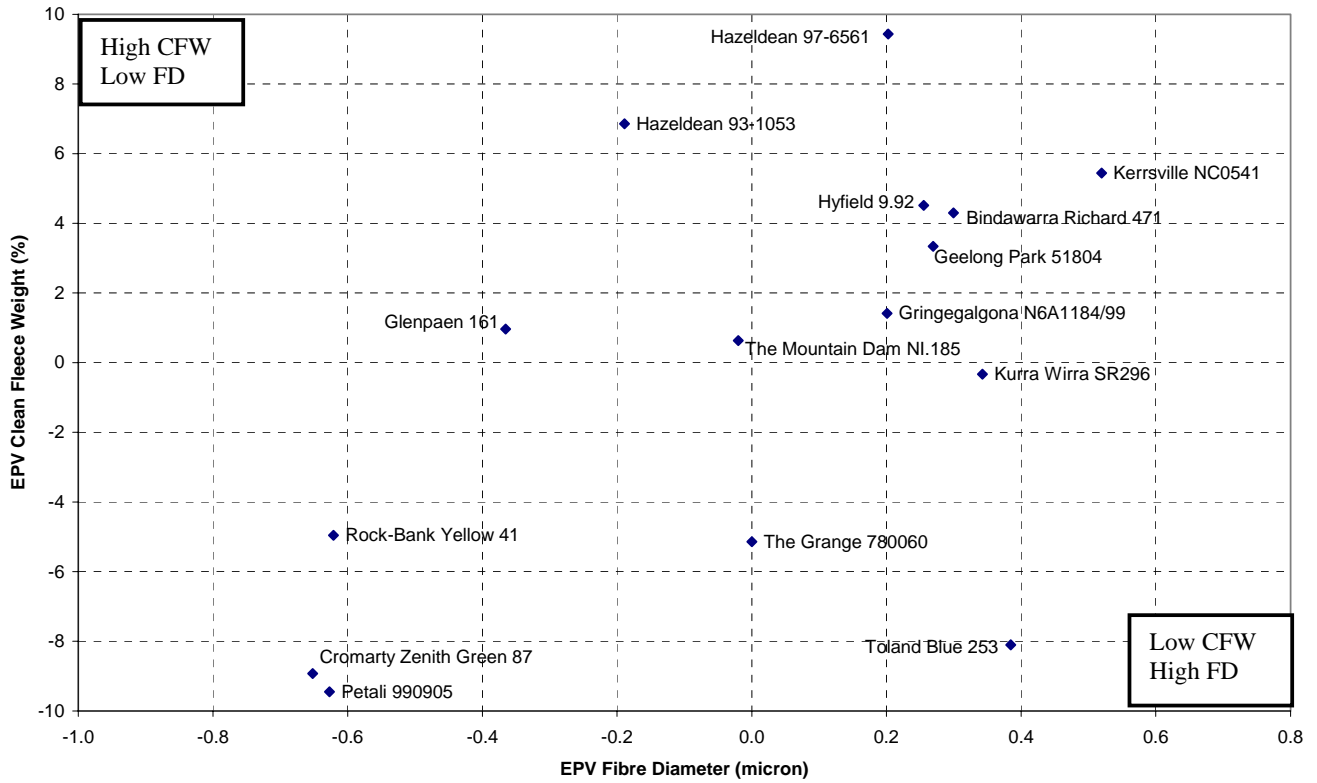
**Table B – RAMPOWER Standard Index Options and Classer’s Grade 2000 Drop -
2nd Evaluation**

Sire Identity	No of progeny	RAMPOWER Standard Index Options			Classer’s Grade % ¹		
		3%	6%	12%	Tops	Flocks	Culls
Bindawarra Richard 471	30	107	104	102	48	45	7
Cromarty Zenith Green 87	34	73	87	105	13	75	13
Geelong Park 51804	41	109	107	104	28	68	5
Glenpaen 161	29	112	113	112	26	41	33
Gringegalgonia N6A1184/99	34	92	92	94	13	66	22
Hazeldean 93-1053 *	36	123	119	108	24	62	15
Hazeldean 97-6561	25	127	120	108	36	44	20
Hyfield 9.92	28	120	114	104	19	63	19
Kerrsville NC0541	37	126	119	111	44	50	6
Kurra Wirra SR296	53	102	100	100	12	73	14
Petali 990905	36	66	76	89	9	55	36
Rock-Bank Yellow 41	26	82	88	94	9	77	14
The Grange 780060 *	36	86	89	93	17	71	11
The Mountain Dam NI.185	34	112	109	104	25	59	16
Toland Blue 253	26	64	64	71	4	60	36
Average	34	100	100	100	22	61	17

* Link Sires

¹ Classer’s Assessment is expressed as a percentage of a sire’s progeny.

Figure 2 - Summary Graph Fleece Weight/Fibre Diameter - 2001 drop - 2nd Evaluation



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

Table 1. Major Measured Traits & Classer's Grade

Sire	No of progeny	Estimated Progeny Values (EPVs) Deviation from Average								Classer's Grade %		
		GFW %		CFW %		FD (Micron)		BWT %		Tops	Flocks	Culls
		1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd			
Bindawarra Richard 471	30	4.7	2.4	5.1	4.3	0.2	0.3	1.0	-1.3	48	45	7
Cromarty Zenith Green 87	34	-7.0	-9.7	-6.2	-8.9	-0.5	-0.7	0.8	0.4	13	75	13
Geelong Park 51804	41	1.8	2.9	1.4	3.3	0.0	0.3	-0.2	0.0	28	68	5
Glenpaen 161	29	-1.5	-1.5	0.4	1.0	-0.2	-0.4	-3.7	-2.0	26	41	33
Gringegalgonia N6A1184/99	34	2.6	2.9	1.2	1.4	-0.1	0.2	-0.4	-2.1	13	66	22
Hazeldean 93-1053	36	8.3	9.2	6.7	6.9	0.1	-0.2	2.2	0.3	24	62	15
Hazeldean 97-6561	25	7.8	10.9	7.3	9.4	0.4	0.2	-0.3	-2.3	36	44	20
Hyfield 9.92	28	2.8	4.1	3.1	4.5	0.2	0.3	2.7	3.1	19	63	19
Kerrsville NC0541	37	0.8	3.3	2.5	5.4	0.1	0.5	2.7	4.2	44	50	6
Kurra Wirra SR296	53	-1.6	-1.0	-1.0	-0.3	0.3	0.3	-1.2	0.0	12	73	14
Petali 990905	36	-6.7	-8.7	-6.8	-9.4	-0.2	-0.6	-0.4	-1.1	9	55	36
Rock-Bank Yellow 41	26	-3.5	-4.0	-4.7	-5.0	-0.5	-0.6	-5.7	-4.1	9	77	14
The Grange 780060	36	-5.3	-5.1	-4.6	-5.1	-0.2	0.0	0.8	2.2	17	71	11
The Mountain Dam NI.185	34	0.6	0.6	0.5	0.6	0.1	0.0	1.4	2.9	25	59	16
Toland Blue 253	26	-3.7	-6.2	-4.8	-8.1	0.3	0.4	0.3	-0.2	4	60	36
Average	34	2.32 kg	4.17 kg	1.74 kg	3.09 kg	15.4 µ	17.3 µ	20.2 kg	30.9 kg	22	61	17

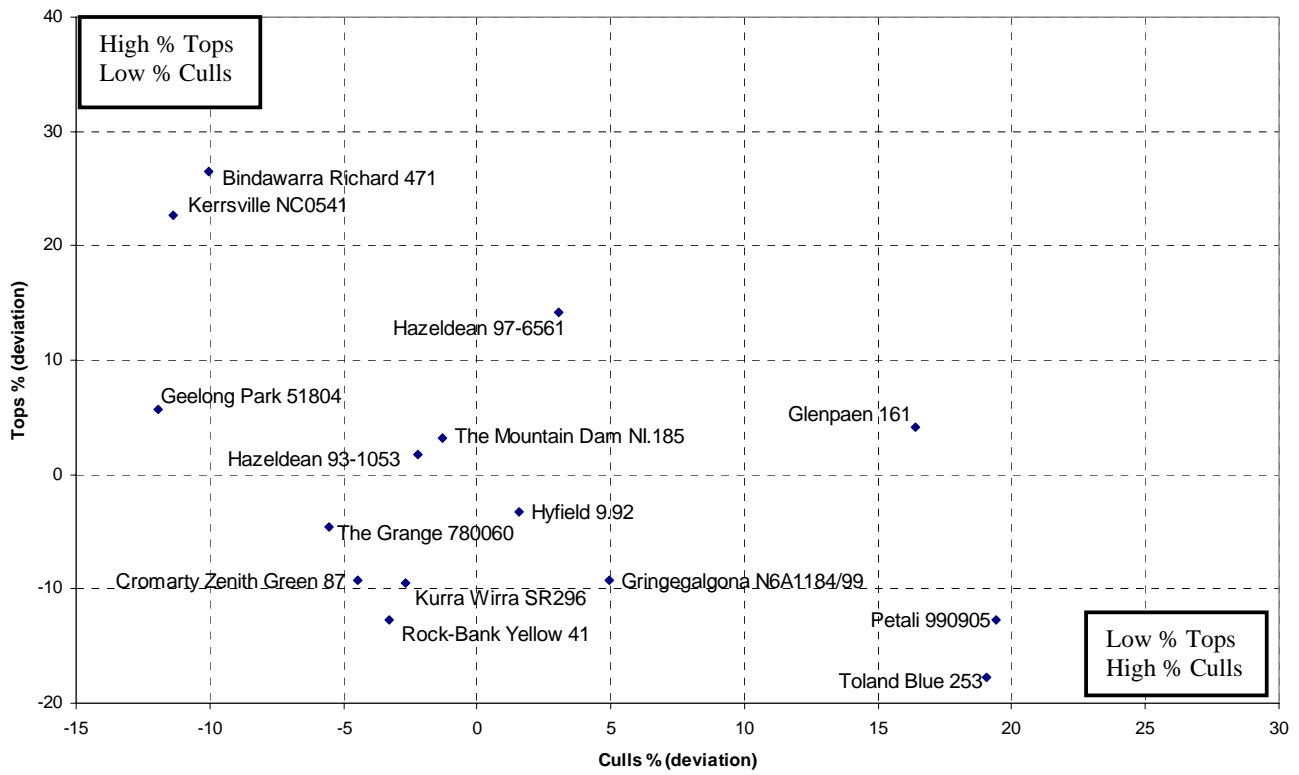
Table 2. Additional Measured & Scored Trait Information

Sire Identity	No of progeny	EPVs				Sire Group – Deviation from Average				Fleece Rot	
		Yld %		FDCV %		SD	>30 mic	SpinF	Curv	Score *	% Incidence **
		1 st	2 nd	1 st	2 nd						
Bindawarra Richard 471	30	0.2	1.1	-0.5	-0.4	0.00	-0.15	0.29	-2.35	0.14	13.8
Cromarty Zenith Green 87	34	1.2	0.8	-1.3	-1.2	-0.36	0.22	-0.86	4.84	0.09	9.4
Geelong Park 51804	41	-0.6	0.2	-0.3	-0.4	-0.01	-0.08	0.23	-5.00	0.24	24.4
Glenpaen 161	29	1.9	1.8	0.1	0.0	-0.09	0.09	-0.51	-1.10	0.15	14.8
Gringegalgonia N6A1184/99	34	-1.4	-1.1	-0.4	0.3	0.19	-0.02	0.34	-3.13	0.59	40.6
Hazeldean 93-1053	36	-1.7	-1.7	0.8	0.8	0.13	0.04	-0.07	-3.63	0.50	36.1
Hazeldean 97-6561	25	-0.7	-1.3	0.2	0.1	0.01	0.00	0.12	-4.99	0.96	52.0
Hyfield 9.92	28	0.3	0.2	0.1	0.3	0.16	-0.01	0.36	-3.81	0.48	25.9
Kerrsville NC0541	37	1.5	1.4	-0.6	-0.7	-0.02	-0.09	0.45	-1.64	0.14	13.9
Kurra Wirra SR296	53	0.4	0.4	-0.9	-0.9	-0.12	0.03	0.15	2.58	0.31	20.4
Petali 990905	36	0.2	-0.3	0.2	0.2	-0.09	0.09	-0.69	8.21	0.29	26.5
Rock-Bank Yellow 41	26	-1.4	-0.6	1.4	1.1	0.05	0.08	-0.50	1.81	0.41	36.4
The Grange 780060	36	0.9	0.1	0.6	-0.1	-0.02	0.02	-0.01	6.09	0.31	28.6
The Mountain Dam NI.185	34	-0.3	0.0	-0.1	0.5	0.13	-0.07	0.05	3.78	0.47	37.5
Toland Blue 253	26	-0.6	-1.1	0.5	0.3	0.16	-0.17	0.49	-4.57	0.12	12.0
Average	34	74.96	74.33	20.91	18.58	3.21	99.38	16.50	103.76	0.34	25.7

* 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 – 2000 drop -
2nd Evaluation



Tables 3 – Classer’s Assessment – 2001 drop – 2nd 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	No of Progeny	Classer’s Grade %			Conformation		Quality	
		Tops	Flocks	Culls	% Pos	% Neg	% Pos	% Neg
Bindawarra Richard 471	30	48	45	7	100	10	62	7
Cromarty Zenith Green 87	34	13	75	13	97	22	97	6
Geelong Park 51804	41	28	68	5	100	5	60	33
Glenpaen 161	29	26	41	33	96	33	93	11
Gringegalgona N6A1184/99	34	13	66	22	100	25	53	25
Hazeldean 93-1053	36	24	62	15	97	15	35	35
Hazeldean 97-6561	25	36	44	20	96	24	44	32
Hyfield 9.92	28	19	63	19	96	37	48	33
Kerrsville NC0541	37	44	50	6	94	11	83	6
Kurra Wirra SR296	53	12	73	14	98	33	90	4
Petali 990905	36	9	55	36	94	39	79	18
Rock-Bank Yellow 41	26	9	77	14	95	23	77	23
The Grange 780060	36	17	71	11	100	14	71	26
The Mountain Dam NI.185	34	25	59	16	100	19	91	6
Toland Blue 253	26	4	60	36	96	32	72	16
Average	34	22	61	17	97	22	71	18

Table 3(b) Conformation Traits

Sire Identity	Face cover	Neck/body development	Feet/Legs conformation	Jaw Conformation % Neg	Back/shoulder Conformation % Neg
Bindawarra Richard 471	4.59	4.48	4.76	0.0	6.9
Cromarty Zenith Green 87	4.19	4.28	4.56	3.1	9.4
Geelong Park 51804	4.60	4.40	4.55	0.0	0.0
Glenpaen 161	4.15	4.19	4.44	3.7	14.8
Gringegalgona N6A1184/99	4.31	4.06	4.66	3.1	6.3
Hazeldean 93-1053	4.65	4.41	4.50	0.0	11.8
Hazeldean 97-6561	4.52	4.52	4.48	8.0	4.0
Hyfield 9.92	4.22	4.19	4.30	0.0	22.2
Kerrsville NC0541	4.58	4.39	4.69	0.0	0.0
Kurra Wirra SR296	4.20	4.02	4.67	0.0	6.1
Petali 990905	4.21	3.85	4.48	6.1	24.2
Rock-Bank Yellow 41	4.27	4.41	4.68	0.0	4.6
The Grange 780060	4.60	4.34	4.40	0.0	2.9
The Mountain Dam NI.185	4.47	4.31	4.66	3.1	6.3
Toland Blue 253	4.08	3.84	4.40	4.0	24.0
Average	4.38	4.24	4.56	1.9	9.0

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.

Face – Scored 1 to 5, ‘1’ being muffled, ‘2’ being less muffled.

Shoulders/back – Scored 1-5, with ‘1’ being worst and ‘5’ best. Reported as percentage of progeny with scores ‘1’ and ‘2’.

Feet/legs – Scored 1 – 5, ‘1’ being worst, ‘2’ having slight problem.

Neck/body development – Scored 1 – 5, ‘1’ being worst (too heavy or too plain), ‘2’ having slight problem.

Mouth/Jaw – Scored 1-5, with ‘1’ being worst and ‘5’ best. Reported as percentage of progeny with scores ‘1’ and ‘2’.

Table 3(c) Wool Quality Traits

Sire Identity	Fleece colour ¹	Wool character ¹	Dust penetration / staple weathering ¹	Fleece rot	
				Score ²	% Incidence
Bindawarra Richard 471	4.52	4.21	4.34	0.14	13.8
Cromarty Zenith Green 87	4.97	4.41	4.06	0.09	9.4
Geelong Park 51804	4.40	4.03	4.08	0.24	24.4
Glenpaen 161	4.81	4.30	4.19	0.15	14.8
Gringegalgona N6A1184/99	4.47	4.03	3.97	0.59	40.6
Hazeldean 93-1053	4.03	3.82	4.03	0.50	36.1
Hazeldean 97-6561	4.04	3.96	4.16	0.96	52.0
Hyfield 9.92	4.15	3.96	4.11	0.48	25.9
Kerrsville NC0541	4.81	4.33	4.22	0.14	13.9
Kurra Wirra SR296	4.86	4.53	4.37	0.31	20.4
Petali 990905	4.76	3.97	4.03	0.29	26.5
Rock-Bank Yellow 41	4.77	4.00	3.95	0.41	36.4
The Grange 780060	4.69	3.89	3.94	0.31	28.6
The Mountain Dam NI.185	4.72	4.38	4.41	0.47	37.5
Toland Blue 253	4.72	4.08	4.24	0.12	12.0
	4.59	4.14	4.15	0.34	25.7

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

² 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 ¹	Pigmented wool Incidence ²	'Black lamb' incidence ²
Bindawarra Richard 471	14.6	4.9	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
Gringegalgona N6A1184/99	9.1	2.3	0.0
Hazeldean 93-1053	44.2	2.3	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
	22.1	1.8	0.0

¹ Recorded at tagging or classing by committee/classer

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

Note: 'Black lambs' and 1st assessment progeny with pigmented wool were removed from trial at first assessment

All pigmentation records are cumulative over both years of assessment, even if animals have been culled after first assessment because of pigmentation

Table 4 Raw Data – 2001 drop – 2nd 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	4.31	3.26	17.62	30.19	75.58	18.20
Cromarty Zenith Green 87	39	34	3.71	2.79	16.55	30.93	75.26	17.26
Geelong Park 51804	47	41	4.29	3.20	17.57	30.79	74.48	18.19
Glenpaen 161	46	29	4.07	3.11	16.73	29.78	76.45	18.62
Gringegalgona N6A1184/99	44	34	4.31	3.15	17.51	29.39	73.00	19.35
Hazeldean 93-1053	43	36	4.60	3.32	17.06	31.06	72.41	19.56
Hazeldean 97-6561	33	25	4.74	3.45	17.42	29.86	72.72	18.49
Hyfield 9.92	35	28	4.41	3.28	17.57	32.87	74.59	19.13
Kerrsville NC0541	47	37	4.36	3.30	17.85	33.19	75.85	17.82
Kurra Wirra SR296	59	53	4.09	3.06	17.57	30.69	74.77	17.62
Petali 990905	49	36	3.71	2.74	16.51	29.76	74.01	18.93
Rock-Bank Yellow 41	38	26	3.97	2.93	16.61	29.08	73.54	19.69
The Grange 780060	49	36	3.90	2.90	17.27	31.65	74.45	18.43
The Mountain Dam NI.185	42	34	4.18	3.10	17.21	32.56	74.28	19.42
Toland Blue 253	41	26	3.84	2.80	17.74	30.73	72.93	18.97
Total or Average	653	505	4.17	3.09	17.27	30.90	74.33	18.58

Table 5 – Group Average Staple Length and Staple Strength Raw Data – 2001 drop – 2nd Evaluation

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

Sire	Length - mm	Strength - N/Kt
Bindawarra Richard 471	108	49.61
Cromarty Zenith Green 87	88	36.57
Geelong Park 51804	103	32.86
Glenpaen 161	99	37.97
Gringegalgona N6A1184/99	99	37.46
Hazeldean 93-1053	104	30.29
Hazeldean 97-6561	105	40.12
Hyfield 9.92	94	30.56
Kerrsville NC0541	104	38.55
Kurra Wirra SR296	94	37.38
Petali 990905	92	29.03
Rock-Bank Yellow 41	84	31.09
The Grange 780060	97	35.06
The Mountain Dam NI.185	96	37.14
Toland Blue 253	95	33.93

GROUP VISUAL CLASSING

Each sire group is visually assessed for group evenness of characteristics as noted below at the second classing assessment. Evenness scoring based on 5 being more even as a group, 1 being the least even as a group.

Group Traits to be evaluated, recorded and publicly presented:

Sire	Colour Code	Evenness	Conformation	Wool Quality
Bindawarra Richard 471	Light Blue	4	4	5
Cromarty Zenith Green 87	Dark Green	3	3	4
Geelong Park 51804	Black	4	4	3
Glenpaen 161	Pink	2	2	2
Gringegalgona N6A1184/99	White	3	3	3
Hazeldean 93-1053	Orange	4	4	2
Hazeldean 97-6561	Red	3	4	2
Hyfield 9.92	Purple	2	2	3
Kerrsville NC0541	Blue	4	4	4
Kurra Wirra SR296	Plum	3	3	4
Petali 990905	Light Green	2	2	2
Rock-Bank Yellow 41	Yellow	3	2	3
The Grange 780060	Grey	2	3	3
The Mountain Dam NI.185	Olive Green	4	3	3
Toland Blue 253	Gold	3	3	3

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 μ . Ram 2 has an EPV for Fibre Diameter of +0.8 μ . The progeny of Ram 1 are expected to be 2 μ 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 μ wool is worth \$5.00/Kg clean and 19 μ 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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