Elders VP Victoria Sire Evaluation Group

1999 Drop 1st Evaluation of Progeny at 10 months

10 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

Supported in sponsorship by:

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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 at the Elders VP Victoria Sire Evaluation Group.

The Elders VP Victoria Sire Evaluation Trials commenced in 1998 and now have 3 progeny drops – 1998, 1999 and 2000; the 1998 and 1999 progeny are being run on host property "The Mountain Dam", Balmoral and the 2000 progeny at Kerrsville, situated between Balmoral and Coleraine. All of these trials will run for a minimum of 2 years.

The 1998 drop wethers will continue 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.

A feature of the Elders VP Victoria Sire Evaluation Trials is the production of newsletters to inform participants, their clients and interested woolgrowers on events surrounding the trials. 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), Balmoral and Horsham Shows and Hamilton Sheepvention. Participating studs have also provided static displays for viewing during field days.
In April, 2000 a successful Open Day was held at "The Mountain Dam" 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@ansonic.com.au
Robert Close		0355 704238	Email: kurrawirra@ansonic.com.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
Peter Fitzgerald (1998)			

Host Properties

The Elders VP Sire Evaluation 1998 and 1999 Progeny Drop Trials are hosted on the property of Tom and Alison Silcock at "The Mountain Dam", Telangatuk East. Progeny are managed under strict commercial conditions.
The Mountain Dam property is situated at the southern end of the Black Range, 20kms east of Balmoral (45 minutes south of Horsham, 60 minutes north of Hamilton). The country is predominantly clay loam with an average annual rainfall of 546mm and sheep are managed on an average of 10 DSE/ha.

The 2000 drop progeny are hosted at Kerrsville, Coleraine.

Report writing & production: Elders VP Victoria Sire Evaluation Group
Data analysis, data processing and reports: Elders VP Victoria Sire Evaluation Group

December 2000

CONTENTS

The information in this booklet should not be read in isolation – 1999 drop progeny at time of assessment were 10 months of age and shorn with 10 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. A second assessment of these progeny will be undertaken in 2001.

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 – 100% equals average and, for example, 10.0 is 10% above average performance of the group.

Traits:

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:

Size – Scored 1 to 5, 1 being smallest, 5 being largest
Face – Scored 1 to 5, 1 being muffled, 3 and above being good
Shoulders – Scored 1 to 5, 1 negative problems, 2 slight problem, and above being good
Feet – Scored 1 – 5, 1 having negative problems,2 slight problem, and above being good
Mouth – Scored 1 – 5, 1 having negative problem, 2 slight problem, 3+ being good
Nourishment – Scored 1 to 5, 1 being very dry or excessively nourished, 5 being excellent
Colour – Scored 1 to 5, 1 being extreme colour, 3 being average/good, 5 being excellent white/bright
Tip Hair – Halo/tip hair assessed at 10 months.
Pigmentation: No. **Black Lambs**: number of lambs recorded as predominantly black at time of tagging;
Skin Pigmentation: progeny noted by classers as having skin pigmentation (typically smutty nose/brown rimmed eyes). Scored 1 to 5, with 1 being worst, 5 best
Wool Pigmentation: Small spot of black or coloured wool in wool growing area, noted at shearing.
Conformation: Not specifically scored in assessment, but figures taken from overall classing of structural scores and combined into an aggregate.
Fleece Rot – Scored 0 to 5, 0 is no fleece rot, 1 slight fleece rot, 5 is extreme.
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.

Index Options: Breeding Objective index options provide the relative value of sires based on a combination of the measured traits –CFW, FD, CV & BWT. 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 than 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 improved CV of fibre diameter at 1/5th the value of FD which is in line with spinning performance.

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.

Classers' Grade: Two Classers grade all assessed progeny as Tops, Flocks or Culls, based on their visual assessment of all traits. The percentage of Tops, Flocks and Culls is presented.

Group Traits: The performance for a comprehensive list of traits (in addition to objectively measured traits) are scored by the two classers as described in Visual Traits above, and are then correlated by Advanced Breeding Services into 'positive', 'average/good' or 'negative' performance. These traits are also grouped into Conformation, Wool Quality and Markings as an aggregate to provide a summary of visual assessed performance. Each trait group 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.)

Individual Traits: The percentage of progeny which score positive or negative for each trait. The table lists individual traits within their Trait Group. A positive percentage that is above the groups' average indicates good performance for that trait. A negative percentage that is below the average of all sires indicates fewer fault than average.

Progeny Group Classing: Assessment of the evenness of sire progeny groups is carried out as a separate assessment to individual classing. This assessment is seen as per Table 4 .

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 sure 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%, Body Weight, Fibre Diameter and Coefficient of Variation of Fibre Diameter.

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 – 1999 drop progeny at time of 1st assessment were 10 months of age with 10 months wool growth. These progeny will have a second and final assessment in 2001 at 22 months of age with 12 months wool growth.

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.

1999 DROP SIRE & OWNER DETAILS

Sire Identity	*Contact Name, Address, Phone & Fax No. & Email*
Blythwood 0200	Graeme Belleville, Blythwood Pastoral Co., RMB 5440, Macarthur 3286 Ph. 0355 764235, Fax 0355 764238
Burthong R-280	Nick Stanislawski, RMB 9210, Coleraine 3315 Ph. 0355 790253
Charinga White HM 10-398 [Munchy]	Roger & Donna Polkinghorne, RMB 636, St Arnaud 3478 Ph. 0354 965223, Fax 0354 965202, Email: charinga@ruralnet.net.au
Cressbrook B3 94/125	Ross, Liz, Lach & Olivia Fulloon, Cressbrook Partnership, 593 Enmore Road, Armidale 2350 Ph. 0267 751257, Fax 0267 751341, Email: cressbrk@northnet.com.au
Cressbrook N8 96/59	Ross Fulloon, Cressbrook Partnership, 593 Enmore Road, Armidale 2350 Ph. 0267 751257, Fax 0267 751341, Email: cressbrk@northnet.com.au
Denholm Green 1244	Will Allen, Denholm Green Pastoral Co., RMB 5312, Hexham 3273 Ph. 0355 997211, Fax 0355 997273
Gringegalgona 4N2527/95	Stephen Silcock, Gringegalgona Stud Partnership, RMB 365, Balmoral 3407 Ph. 0355 743202, Fax 0355 743239
Hazeldean 95-4989	Jim Litchfield, Hazeldean Pty. Ltd., Cooma 2630 Ph. 0264 535555, Fax 0264 535526 Email: hazeldean@snowy.net.au
Kerrsville NB6040	Robert Plush, RMB 8203,Coleraine 3315 Ph/Fax 0355 750208 Email: plush1@ansonic.com.au
Merinotech Vic 93084 [LINK SIRE] *	Alistair Lade, Merinotech Vic, c/- RMB 4774, Seymour 3660 Ph. 0357 969276, Fax 0357 969311, al-lade@bigpond.com
Nerstane N950421	John McLaren, Nerstane Merino Stud, Woolbrook 2354 Ph. 0267 775881, Fax 0267 775922, Email: nerstane@northnet.com.au
The Mountain Dam ** 96/LB060	Tom Silcock, T & A Silcock, RMB 8401, Horsham 3401 Ph. 0353 882238, Fax 0353 882235 Email: silcock@netconnect.com.au
The Mountain Dam ** 96/NI011	Tom Silcock, T & A Silcock, RMB 8401, Horsham 3401 Ph. 0353 882238, Fax 0353 882235 Email: silcock@netconnect.com.au
Toland Poll Red R25 [LINK SIRE] *	Philip Toland, PC & G Toland, Feltrim, RMB 2005, Violet Town 3669 Ph. 0357 981605, Fax 0357 981404, Email: toland@hdc.com.au
Toland Poll Red R507	Philip Toland, PC & G Toland, Feltrim, RMB 2005, Violet Town 3669 Ph. 0357 981605, Fax 0357 981404, Email: toland@hdc.com.au
Wirrate White 047	Ken Heal, Classic Pastoral Co., Melrose Park, Nagambie 3608 Ph/Fax 0357 942475, Email: heal@eck.net.au

* 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.

** Abbreviated names in graphs [The Mountain Dam = TMD]

MANAGER'S REPORT – 1999 Drop Progeny

Ewe Base:

Ewes for the 1999 trial were selected from "The Mountain Dam" mixed aged commercial, fine wool Merino breeding ewes. The average adult flock micron at "The Mountain Dam" is 19.0

1999 Progeny Location:

The Mountain Dam property is owned by Tom and Alison Silcock, located 20kms east of Balmoral, on the border between the Western District and Wimmera Regions of Victoria. A successful pasture improvement program has been implemented at The Mountain Dam using controlled rotational grazing strategies along with some pasture oversowing. Average annual rainfall of 546mm on a predominantly clay loam soil type.

Seasonal Conditions:

Conditions in early 1999 commenced two false starts to the autumn seasonal break. Feed was scarce right throughout the late Autumn and early Winter period. By mid August, feed conditions were once again in good supply but throughout the region 1999 was an extremely dry year. Good stands of feed were available in November 1999 with an early close to the season of seeding and drying off in November. The 2000 year provided a kinder feed situation for the progeny and with late rains the season in November 2000 has finished with plentiful feed and major seed management conditions.

The Evaluation & Management Program 1999 drop progeny:

16th March 1999	Commence AI program - Ewes sponged & teasers injected
23rd March 1999	2nd injection for Teasers
28th/29th March 1999	Pull sponges & inject ewes with PMSG
30th March/ 1st April 1999	Laparoscopic insemination of 944 ewes, conducted by Genstock
28th May 1999	Ultrasound/scan ewes
25th August 1999	Ewes drafted into 32 groups (identifying singles & twins) for lambing
27th August 1999	Ewes commence lambing
4th September 1999	Lambing complete – commence lamb tagging, scored and weighed (rained off)
7th September 1999	Complete lamb tagging, scoring and weighing
7th September 1999	Ewes & lambs returned to full mob
7th October 1999	Mark & Mules lambs, vaccinated 6 in 1/selenium & weighed
12th December 1999	Weaned Lambs, body weighed, drenched, selenium bullets and jetted
December, 1999	Commenced supplementary feeding
May, 2000	Progeny crutched and Ivomec drench capsuled
19th June, 2000	1st Visual Classing of progeny
28thJune, 2000	1st Shearing & body weighing of progeny

Classers for 1999 Drop Progeny

Mr Michael Collins
Mr Gary Simpson

Summary Table A – **Lambing Analysis & Survival – 1999 Drop**

Assessment Numbers to June, 2000

Sire Identity	No. Ewes Scanned in Lamb	**4-7/9/99 Lambs Tagged**	Single	Twin & Trip	**7/10/99 Marking Tally**	**12/12/99 Weaning Tally**	**28/6/00 Shearing Tally**	**Attrition* Died**	**NR**	**EL.**
Blythwood 0200	35	**37**	24	13	37	37	36		1	
Burthong R-280	36	**42**	21	21	42	42	39	1	1	1
Charinga Munchy	40	**48**	20	28	46	46	44	2	2	
Cressbrook B3 4/125	41	**42**	17	25	42	41	37	1	3	1
Cressbrook N8 6/59	42	**48**	31	17	47	46	46	2		
Denholm Green GM1244	41	**46**	26	20	45	45	42	2	1	1
Gringegalgona 4N2572	48	**56**	32	24	56	56	54	1		1
Hazeldean 95-4989	46	**60**	22	38	60	60	58	1	1	
Kerrsville Harvey	40	**42**	20	22	42	42	42			
Merinotech Vic 93084	44	**44**	34	10	44	44	43			1
Nerstane N-421	38	**44**	23	21	44	44	40		3	1
The Mountain Dam 96/LB060	47	**53**	25	28	53	53	52		1	
The Mountain Dam 96/NI-011	44	**50**	28	22	50	50	50			
Toland R25	24	**25**	14	11	25	25	25			
Toland R507	33	**32**	18	14	32	31	30	1		1
Wirrate White 047	36	**39**	22	17	37	37	33	3	2	1
Total	635	**708**	377	331	702	699	671	14	15	8

Prior to lambing, ewes were drafted into their sire progeny groups and lambed down in 32 separate paddocks identifying scanned singles, twins & triplets.

- Attrition: These figures describe the number of progeny at 28/6/00 that have died since tagging, are missing from mob (NR) or were not included in the evaluation or have been eliminated (EL) – e.g. sheep sick/flystruck and lost wool. The committee eliminated (removed) all commercially unviable progeny prior to classing on humane grounds and/or due to pigmented wool. Note that all lambs tagged have been accounted for.

Riverina Wool Testers processed the mid side samples for the 1st assessment of the 1999 Sire Evaluation Trial and we are grateful to them for their contribution.

Figure 1: Summary Graph - **Combined Measured Traits and Classers' Grade 1st Assessment**

The RAMPOWER standard indexes:

3% Index: Maintain FD while maximising the increase in CFW, maintaining BWT and improved 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.)

Graph of Visual and Measured Performance

Summary Graph using 6% Breeding Objective Index Option

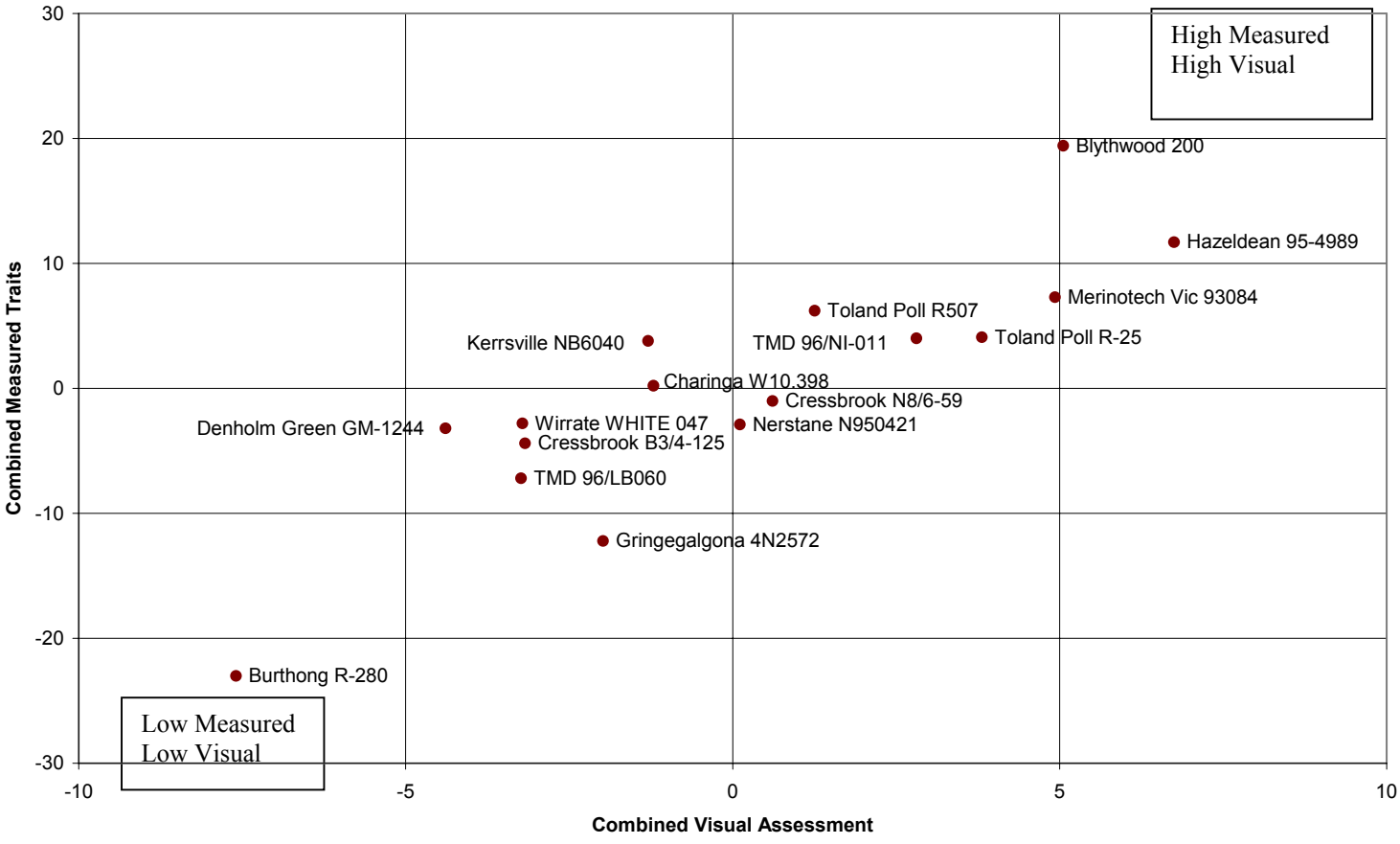


Table B – **RAMPOWER Standard Index Options and Classers' Grade 1999 Drop - 1stEvaluation**

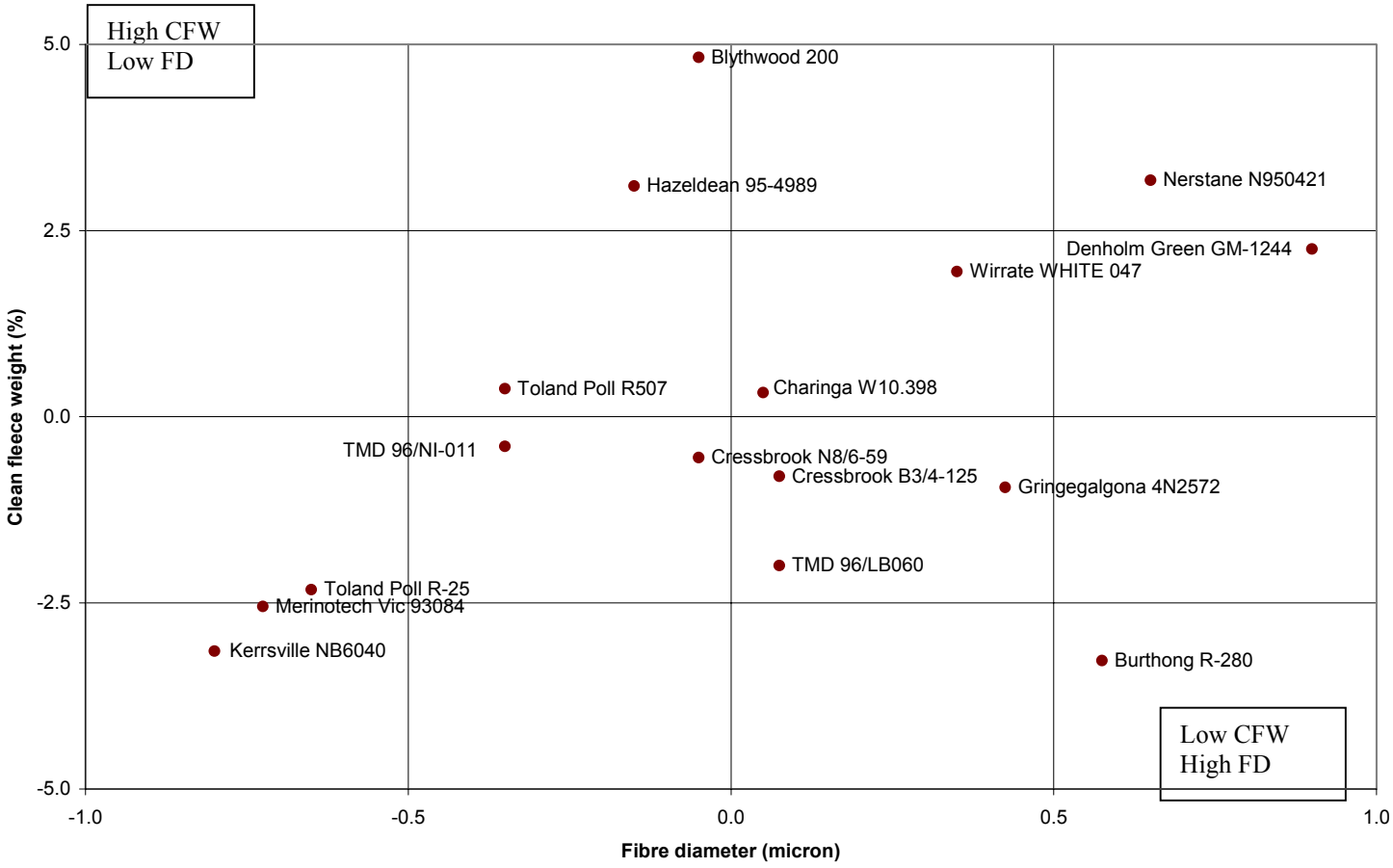
RAMPOWER Standard Index Options and Classers' Grade – 1999 drop – 1st Evaluation

			RAMPOWER Standard Index Options			Classers' Grade % [1]		
Sire Graph Code	Sire Identity	No of progeny	3% MP	6% MP	12% MP	Tops	Flocks	Culls
1	Blythwood 200	36	121	119	115	35	53	13
2	Burthong R-280	39	79	77	81	8	44	49
3	Charinga W10.398	44	102	100	99	14	64	23
4	Cressbrook B3/4-125	37	98	96	95	4	73	23
5	Cressbrook N8/6-59	46	97	99	101	18	64	18
6	Denholm Green GM-1244	42	105	97	92	6	63	31
7	Gringegalgona 4N2572	54	93	88	86	14	59	27
8	Hazeldean 95-4989	58	113	112	107	38	55	7
9	Kerrsville NB6040	42	95	104	110	18	55	27
10	Merinotech Vic 93084 *	43	98	107	116	26	69	5
11	Nerstane N950421	40	105	97	90	18	63	20
12	The Mountain Dam 96/LB060	52	92	93	94	9	63	28
13	The Mountain Dam 96/NI-011	50	101	104	106	26	59	15
14	Toland Poll R-25 *	25	97	104	109	32	52	16
15	Toland Poll R507	30	104	106	106	18	68	15
16	Wirrate WHITE 047	33	102	97	93	12	57	31
	Average	**42**	**100**	**100**	**100**	18	60	21

***** Link Sires

[1] Classers' Assessments are expressed as a percentage of a sire's progeny.

Figure 2 - **Summary Graph Fleece Weight/Fibre Diameter - 1999 drop 1st Evaluation**



Tables 1 & 2 – **Measured and scored assessments - 1999 drop – 1st Evaluation**

Table 1. Major measured traits & Classers' grade

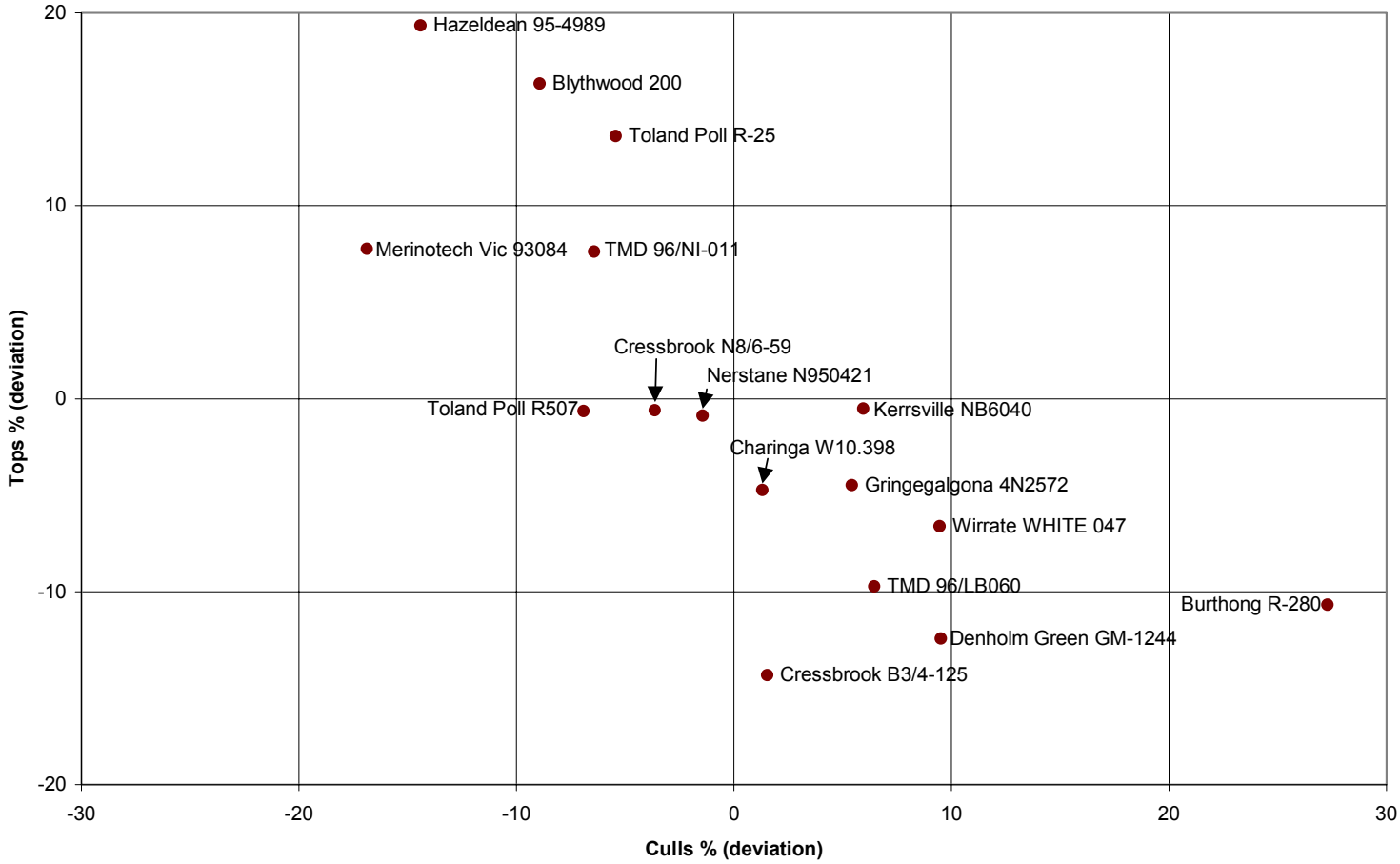
Sire Graph Code	Sire Identity	Number of progeny	Estimated Progeny Values				Classers' grade %		
			GFW%	CFW%	FD um	BWT%	Tops	Flocks	Culls
			1st	1st	1st	1st			
1	Blythwood 200	36	4.3	4.8	-0.1	0.8	35	53	13
2	Burthong R-280	39	-0.6	-3.3	0.6	-2.9	8	44	49
3	Charinga W10.398	44	-1.4	0.3	0.1	-2.4	14	64	23
4	Cressbrook B3/4-125	37	-3.6	-0.8	0.1	-2.8	4	73	23
5	Cressbrook N8/6-59	46	0.0	-0.6	-0.1	-1.8	18	64	18
6	Denholm Green GM-1244	42	2.0	2.3	0.9	4.1	6	63	31
7	Gringegalgona 4N2572	54	-2.5	-1.0	0.4	-3.2	14	59	27
8	Hazeldean 95-4989	58	4.2	3.1	-0.2	2.1	38	55	7
9	Kerrsville NB6040	42	-2.3	-3.2	-0.8	4.7	18	55	27
10	Merinotech Vic 93084	43	-2.8	-2.6	-0.7	1.6	26	69	5
11	Nerstane N950421	40	3.6	3.2	0.7	-3.2	18	63	20
12	The Mountain Dam 96/LB060	52	-0.4	-2.0	0.1	5.9	9	63	28
13	The Mountain Dam 96/NI-011	50	-0.6	-0.4	-0.4	-0.9	26	59	15
14	Toland Poll R-25	25	-3.1	-2.3	-0.7	1.4	32	52	16
15	Toland Poll R507	30	0.7	0.4	-0.4	1.1	18	68	15
16	Wirrate WHITE 047	33	2.7	2.0	0.4	-4.5	12	57	31
	Average	**42**	**2.551 kg**	**1.819 kg**	**16.3 mic.**	**27.96 kg**	18	60	21

Table 2: Additional measured & scored trait performance

Sire Graph Code	Sire Identity	No of progeny	EPVs		Sire Group Deviation from Average					Fleece Rot *	
			Yld % 1st	FDCV % 1st	SL DEV	SD DEV	%>30 DEV	SPIN DEV	CURV DEV	SCORE (0-5)	INCID %
1	Blythwood 200	36	0.7	-0.3	4.4	-0.1	-0.1	-0.2	-2.0	0.7	42
2	Burthong R-280	39	-3.2	-0.8	-9.3	-0.1	0.0	0.4	9.5	0.8	41
3	Charinga W10.398	44	1.8	0.4	3.4	0.1	0.0	0.1	-4.8	0.3	18
4	Cressbrook B3/4-125	37	3.2	0.7	-6.3	0.2	0.0	0.2	4.6	0.1	8
5	Cressbrook N8/6-59	46	-0.5	-0.3	1.3	-0.1	-0.1	-0.2	5.0	0.4	22
6	Denholm Green GM-1244	42	0.3	-1.1	-4.3	0.0	0.1	0.7	6.7	0.8	48
7	Gringegalgona 4N2572	54	2.1	0.6	3.5	0.2	0.2	0.5	-2.5	0.3	19
8	Hazeldean 95-4989	58	-1.5	0.4	1.4	0.1	0.0	-0.1	-4.3	0.5	37
9	Kerrsville NB6040	42	-0.9	0.2	-9.1	-0.1	-0.2	-0.7	0.2	0.8	40
10	Merinotech Vic 93084	43	0.6	-0.7	4.7	-0.3	-0.2	-0.9	-1.4	0.5	27
11	Nerstane N950421	40	-0.8	0.1	2.7	0.1	0.1	0.6	-3.4	0.4	23
12	The Mountain Dam 96/LB060	52	-1.9	-0.2	-1.3	0.0	0.0	0.2	5.5	0.4	34
13	The Mountain Dam 96/NI-011	50	0.2	0.1	3.2	-0.1	-0.1	-0.4	1.4	0.4	32
14	Toland Poll R-25	25	1.1	0.3	0.2	-0.1	-0.1	-0.6	-9.4	0.2	20
15	Toland Poll R507	30	-0.3	0.4	4.1	0.0	-0.1	-0.3	-0.2	0.4	26
16	Wirrate WHITE 047	33	-0.8	0.3	-2.3	0.1	0.1	0.3	-10.1	1.2	62
	Average	**42**	**71.33**	**21.06 %**	68.8	3.4	0.7	15.9	122.1	0.5	31

* Fleece Rot scores from visual classing/shearing
Estimated Progeny Values (EPVs)

Figure 3 - **Summary Graph Classers' Grades – 1999 drop**
1st Evaluation



Tables 3 – **Classers' Assessments – 1999 drop – 1st Evaluation**

Table 3 (a) Group Traits

Sire Code	Sire Identity	No. of Progeny	Classers' Grade %			Conformation			Quality			Pigment	
			Tops	Flocks	Culls	Pos	Good	Neg	Pos	Good	Neg	Pos	Neg
1	Blythwood 200	36	35	53	13	50	17	33	60	14	26	99	1
2	Burthong R-280	39	8	44	49	26	26	49	32	21	47	99	1
3	Charinga W10.398	44	14	64	23	35	36	28	40	20	40	92	8
4	Cressbrook B3/4-125	37	4	73	23	20	42	38	45	23	32	97	3
5	Cressbrook N8/6-59	46	18	64	18	31	41	28	56	14	30	90	10
6	Denholm Green GM-1244	42	6	63	31	45	24	31	29	23	49	87	13
7	Gringegalgona 4N2572	54	14	59	27	23	52	25	33	10	56	81	19
8	Hazeldean 95-4989	58	38	55	7	28	50	22	70	13	17	96	4
9	Kerrsville NB6040	42	18	55	27	27	33	39	56	15	29	100	0
10	Merinotech Vic 93084	43	26	69	5	33	35	32	70	3	26	92	8
11	Nerstane N950421	40	18	63	20	31	29	40	40	31	29	99	1
12	The Mountain Dam 96/LB060	52	9	63	28	38	40	22	35	30	36	92	8
13	The Mountain Dam 96/NI-011	50	26	59	15	27	21	52	68	14	18	82	18
14	Toland Poll R-25	25	32	52	16	26	28	46	80	6	14	90	10
15	Toland Poll R507	30	18	68	15	42	42	16	60	24	16	90	10
16	Wirrate WHITE 047	33	12	57	31	31	29	40	49	18	34	99	1
	Average	**42**	18	60	21	32	35	33	51	17	32	92	8

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

Table 3(b) Conformation and Type % 1st Assessment

Sire Graph Code	Body Size			Body Length			Face cover		Mouth		Shoulder		Feet/ Hocks		Development			Coverage		
	Pos	Avg	Neg	Pos	Avg	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Under	Avg	Over	Pos	Good	Neg
1	43	50	7	1	97	1	93	7	97	3	83	17	97	3	1	99	0	13	79	8
2	14	60	26	0	100	0	99	1	97	3	83	17	88	12	12	87	1	3	64	33
3	32	59	9	1	99	0	89	11	100	0	98	2	90	10	2	98	0	2	74	24
4	9	73	18	0	99	1	97	3	99	1	97	3	78	22	11	88	1	1	50	49
5	28	61	11	0	97	3	100	0	96	4	97	3	94	6	2	98	0	1	73	26
6	39	57	4	1	99	0	96	4	99	1	82	18	93	7	5	94	1	1	83	15
7	20	69	10	0	100	0	99	1	96	4	94	6	93	7	3	97	0	5	77	19
8	25	68	8	1	99	0	95	5	100	0	96	4	93	7	2	98	0	4	75	22
9	17	61	23	0	100	0	88	12	100	0	96	4	94	6	10	90	0	10	74	17
10	30	59	11	0	100	0	91	9	100	0	88	13	97	3	1	99	0	2	83	15
11	19	64	18	0	98	3	89	11	94	6	98	3	95	5	13	88	0	5	89	6
12	36	51	13	0	100	0	94	6	99	1	98	2	95	5	0	100	0	7	74	19
13	22	62	16	0	100	0	81	19	97	3	84	16	92	8	4	96	0	9	76	15
14	22	66	12	0	100	0	84	16	100	0	94	6	80	20	0	100	0	10	76	14
15	40	56	3	0	100	0	95	5	98	2	97	3	94	6	0	100	0	5	71	24
16	21	50	29	0	100	0	99	1	100	0	93	7	97	3	9	91	0	3	76	21
Avg	26	61	13	0	99	1	93	7	98	2	92	8	92	8	4	95	0	5	75	20

Table 3(c) Wool Quality 1st Assessment

Sire Graph Code	Nourishment			Colour			Style			Evenness			Handle		Topline		Staple Structure		Tip Hair		Staple Length		
	Pos	Av	Neg	Pos	Avg	Neg	Pos	Avg	Neg	Pos	Avg	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Avg	Neg
1	24	64	13	4	90	6	32	64	4	0	100	0	89	11	100	0	99	1	100	0	0	96	4
2	8	73	19	4	79	17	9	83	8	0	100	0	73	27	100	0	100	0	100	0	0	69	31
3	15	69	16	13	83	5	24	59	17	0	100	0	81	19	95	5	100	0	100	0	1	95	3
4	11	70	19	19	81	0	28	70	1	0	99	1	85	15	100	0	100	0	100	0	0	76	24
5	13	68	19	14	78	8	28	63	9	0	98	2	91	9	99	1	100	0	100	0	1	96	3
6	8	70	21	8	82	10	8	87	5	1	98	1	75	25	99	1	96	4	100	0	0	81	19
7	6	59	34	10	88	2	19	69	13	1	99	0	69	31	94	6	100	0	100	0	0	98	2
8	32	64	4	15	83	2	35	61	4	0	98	2	92	8	100	0	100	0	100	0	3	94	4
9	21	67	12	7	86	7	31	63	6	1	99	0	87	13	98	2	100	0	100	0	0	77	23
10	24	65	11	14	82	5	23	68	9	0	99	1	99	1	97	3	99	1	100	0	1	99	0
11	19	75	6	8	89	4	13	79	9	0	99	1	80	20	99	1	100	0	100	0	1	95	4
12	13	69	18	9	83	9	12	81	8	0	99	1	84	16	97	3	100	0	100	0	1	88	11
13	26	65	9	19	81	0	31	64	5	1	99	0	93	7	97	3	100	0	100	0	1	98	1
14	34	56	10	32	66	2	40	60	0	2	98	0	100	0	98	2	100	0	100	0	0	94	6
15	19	73	8	16	81	3	29	65	6	0	98	2	90	10	100	0	100	0	100	0	0	98	2
16	21	74	6	7	78	15	34	62	4	1	99	0	85	15	97	3	99	1	100	0	0	93	7
Avg	18	67	15	12	82	6	24	69	7	0	99	1	85	15	98	2	100	0	100	0	1	91	9

Table 3(d) Pigment

Sire Graph Code	Sire Identity	1st Assessment		Tagging
		Skin Pigment % Neg *	% sheep with Pigmented Wool *	No. Black Spot/Pigment Lambs **
1	Blythwood 200	1	0	
2	Burthong R-280	1	0	
3	Charinga W10.398	3	5	
4	Cressbrook B3/4-125	3	0	
5	Cressbrook N8/6-59	8	2	
6	Denholm Green GM-1244	13	0	
7	Gringegalgona 4N2572	17	2	1
8	Hazeldean 95-4989	2	2	
9	Kerrsville NB6040	0	0	
10	Merinotech Vic 93084	8	0	
11	Nerstane N950421	1	0	
12	The Mountain Dam 96/LB060	6	2	
13	The Mountain Dam 96/NI-011	16	2	
14	Toland Poll R-25	10	0	
15	Toland Poll R507	3	6	2
16	Wirrate WHITE 047	1	0	
	Average	6%	1%	3 lambs

* Noted by classers/committee during 1st classing assessment (%)

** Noted by committee at tagging (actual number)

Note: Black spot lambs and 1st 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)
BW	%	Body Weight (percentage)
FD	μm	Fibre Diameter (micron)
CV FD	%	Coefficient of Variation (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 as a percentage 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.

	Heritability					
No of progeny	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 -1.2μ. Ram 2 has an EPV for Fibre Diameter of -0.8μ. The progeny of Ram 1 are expected to be 2μ 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	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

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 20μ wool is worth $5.00/Kg clean, then 19μ wool is worth 8% more, or 1.08 x $5.00 = $5.40/kg.

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:

$$\text{Index} = 100 + (EBV_{\text{trait } 1} \times EV_{\text{trait } 1}) + (EBV_{\text{trait } 2} \times EV_{\text{trait } 2}) + \ldots (EBV_{\text{trait } n} \times EV_{\text{trait } n})$$

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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