Elders Victoria Sire Evaluation Group

2003 Drop 2nd Evaluation of Progeny at 21 Months

10 Months Wool Growth

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

Proudly supported in sponsorship by:

as **Gold Sponsor**

Silver Sponsors:

Bronze Sponsors:

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

August 2005

CONTENTS

The information in this booklet should not be read in isolation – 2003 drop progeny at the time of their assessment were 21 months of age and were shorn with 10 months wool growth. This is the second and final assessment of the 2003 progeny in the Central Test Evaluation trials and results from this assessment will be reported in *Merino Superior Sires*..

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 Victoria Sire Evaluation Group - Balmoral

The Elders 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 (1998-2003), 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", "White Oaks" and "Arundale" to inspect progeny and to discuss the sire evaluation program with interested woolgrowers.

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 stud breeders met to form what is now known as the Elders Victoria Sire Evaluation Group. The Sire Evaluation Trials commenced in 1998 and there are now 8 progeny drops – 1998, 1999, 2000, 2001, 2002, 2003, 2004 & 2005. All trials are run for a minimum of 2 years.

- 1998 & 1999 drop – Host property "The Mountain Dam", Balmoral
- 2000 & 2002 drop - Host property "Kerrsville", situated between Balmoral and Coleraine
- 2002 & 2003 drop – Host property "White Oaks", Gringegalgona Merino Stud at Balmoral.
- 2004 & 2005 drop – Host property "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.

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

The Management Committee:

Robert Plush	(Chairman)	03 5575 0208	rjplush@bigpond.com
Robert Close		03 5570 4238	kurrawirra@ansonic.com.au
Tom Silcock		03 5388 2238	silcock@netconnect.com.au
Stephen Silcock		03 5574 3202	sjsilcock@bigpond.com
Sue & Hugh Jarvis		03 5574 3298	suejarvis@bigpond.com
David Whyte		03 5572 2266	dwhyte@elders.com.au
Colin & Jill Frawley		03 5578 6334	wirra@ansonic.com.au
Tania Rentsch		03 5576 5051	simtan111@bigpond.com
(Manager, c/- D Rendell & Assoc)			

Host Property for 2003 drop progeny

The "White Oaks" property, run by Stephen and Judith Silcock, is located in the Dundas Highlands. It lies on shallow clay and sandy loams in undulating tableland red gum country midway between Cavendish and Balmoral, 48kms northwest of Hamilton. The average annual rainfall at "White Oaks" is 650 mm (26"). Progeny are managed under strict commercial conditions.

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, Coefficient of Variation of Fibre Diameter, Staple Strength and Staple Length 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.

Measured traits:

GFW%	Greasy Fleece Weight (percentage)
CFW%	Clean Fleece Weight (percentage)
FD µm	Average Fibre diameter (micron)
BWT%	Body Weight (percentage)
CV%	Co-efficient of variation of fibre diameter
Yld%	Washing yield of the midside sample
SL	Staple Length (mm)
Str	Staple Strength (N/ktex)

Sire Least Square Means: Sire least square means are the average performance of all the progeny assessed, but corrected for the number of progeny, sex and birth type.

Visual Traits:

Most traits are scored 1 to 5, with '1' being best and '5' being worst. Many animals were scored '3', being neither bad nor outstandingly good.

Conformation

Face – Scored 1 to 5. Scores of 2,3,or 4 are most acceptable; scores of 1 (bare) or 5 (muffled) are less acceptable.
Shoulders/back – Reported as percentage of the progeny with a negative expression.
Feet/legs – Scored 1 to 5. (1 being best)
Neck/body development – Scored 1 to 5. Scores of 2, 3 or 4 are most acceptable, scores of 1 or 5 are less acceptable (too heavy or too plain).
Mouth/Jaw – Reported as percentage of progeny with a negative expression.

Wool Quality

Wool Colour – Scored 1 to 5. (1 being best)
Wool Character – Scored 1 to 5 (1 being best)
Staple Weathering / D**ust penetration** - Scored 1 to 5, where '1' is best.
Fleece Rot – Scored 0 to 5, '0' is no fleece rot, '1' slight fleece rot, '5' is extreme.
Scored Visual Wool Counts – Assessed as 74's, 70's, 66's, 64's, 62's etc. A lower number means bolder crimp.

Pigmentation

A **Black Lamb** is the result of a black recessive gene being present in both the sire and the dam (both sire and dam being Bb, or heterozygous). There is a 25% chance that the progeny of the Bb x Bb mating will be a 'black lamb' (bb). That any 'black lambs' resulted from a sire confirms that the sire carries the black recessive gene. When a sire does not produce any 'black lambs' is no guarantee that it does not carry the black recessive gene, as it requires the ewes he is mated to be carriers for this 25% chance of expression to occur.

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
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 tagging, visual classing or shearing and shown as a percentage of progeny with wool pigmentation.

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 that 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% Micron Premium (MP) – have been endorsed by Central Test Sire Evaluation as the base indexes for sites to provide combined measured trait results.

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

6% MP 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% MP 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.

Fleece Value: The combination of fibre diameter, style grade, staple length, staple strength, yield, and vegetable matter is used to value fleeces. Estimates of clean price (c/kg) were obtained using AWI's Woolcheque website (http://www.woolcheque.com.au), using style grade MF4 (best topmaker) and vegetable matter of 1.0% for all sire groups, as well as averages for sire progeny groups for fibre diameter, staple length, staple strength, yield calculated as Overall Mean + Estimated Progeny Value. The price in cents/kg clean was then multiplied by the clean fleece weight (mean calculated using EPV[1]) for each sire, to arrive at the fleece value ($/fleece). No qualifiers for colour or other wool faults were used.

Table 5 shows the average fleece value for each progeny group. Discounts for staple length and strength are included. The timescales used to estimate prices were the 01-02, 02-03 and 03-04 seasons, for the Southern region. The estimated prices and discounts from each of these seasons were then averaged.

[1] Calculated clean fleece weight = $2.9908 \times (1+(EPV_{CFW}/100))$

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 VALUES

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.

The 'true' Progeny Value of a sire would be obtained if the number of progeny evaluated for each sire was infinite. Because the number of progeny for each sire 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%). For a highly heritable trait (0.5) such as fibre diameter, 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. 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 second and final assessment in 2005.

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 and continue to be modified by AMSEA as a gradual improvement program for the most accurate data collection and analysis.

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 2003 TRIAL

SIRE & OWNER DETAILS

Stud Sire Identity	*Contact Name, Address, Phone & Fax No. & Email*
Bindawarra (Richard) 471 * 5038921997000471	Murray & Janet Toland, PO Box 131, Omeo VIC 3898 Ph. 03 5159 1362, Fax 03 5159 1361 Email: bindawarra@bigpond.com
Cromarty (Dean) BLK953 5047772000000953	Cath & Huntly Gordon, Ben Lomond NSW 2365 Ph. 02 6733 2103, Fax 02 6733 2114 Email: cath@northnet.com.au
Goodwood BW1143/01 5038922001001143	Richard Alexander, Banula P/L, Pattisons Lane, Glenthompson VIC 3293 Ph. 03 5577 8265 Email: goodmerino@datafast.net.au
Gringegalgona O4A0907/01 5030972001011139	Stephen Silcock, Gringegalgona Stud Partnership, 279 Melville Forest Vasey Rd, Vasey VIC 3407 Ph. 03 5574 3202, Fax 03 5574 3239 Email: sjsilcock@bigpond.com
Hazeldean 99-12586 5003831999012586	Jim Litchfield, Hazeldean Pty. Ltd., Cooma NSW 2630 Ph. 02 6453 5555, Fax 02 6453 5526 Email: litchfield@hazeldean.com.au
Kerrsville NC0541 * 5035092000NC0541	Robert Plush, 1885 Coleraine Edenhope Rd, Coleraine VIC 3315 Ph/Fax 03 5575 0208 Email: rjplush@bigpond.com
Kurra-Wirra SR980 50417320000SR980	Robert Close, Kurra-Wirra, RMB 9333, Coleraine VIC 3315 Ph. 03 5570 4238, Fax 03 5570 4234 Email: kurrawirra@ansonic.com.au
Merinotech 99.431 5046481999990431	Hugh & Susan Jarvis, "Aramis", 8338 Natimuk Hamilton Rd, Gatum VIC 3407 Ph. 03 5574 3298, Fax 03 5574 3299, Email: suejarvis@bigpond.com
Nerstane 990137 5032981999990137	John McLaren, Nerstane Merino Stud, Woolbrook NSW 2354 Ph 02 6777 5881, Fax 02 6777 5922 Email: john@nerstane.com.au
Ranken BK485 5091002000000485	JP & SM Ranken, RMB 1205, Morrisons VIC 3334 Ph. 03 5341 5681, Fax 03 5341 5681
Spielvogel W83/01 6091012001000083	T & M Spielvogel, 10 Creamery Road, Meredith VIC 3333 Ph. 03 5286 1450
Suttor BLK032 504126200000BLK032	Shelley Roydhouse, "Echo", Triamble via Mudgee NSW 2850 Ph. 02 6373 8597, Fax 02 6373 8597
The Mountain Dam NL112 50457219990NL112	Tom Silcock, T & A Silcock, RMB 8401, Horsham VIC 3401 Ph. 03 5388 2238, Fax 03 5388 2235 Email: silcock@netconnect.com.au
Toland Poll LB99/01 601082200101LB99	Philip Toland, PC & G Toland, Feltrim Road, RMB 2005, Violet Town VIC 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 – 2003 Drop Progeny,

"White Oaks", Gringegalgona Merino Stud

Ewe Base:

Ewes for the 2003 trial were selected from "Gringegalgona" blood mixed aged commercial, fine wool Merino breeding ewes. The average adult flock micron at "Gringegalgona" over the last 10 years is 19.2.

2003 Progeny Location:

The "White Oaks" property, run by Stephen and Judith Silcock is located in the Dundas Highlands. It lies on shallow clay and sandy loams in undulating tableland red gum country midway between Cavendish and Balmoral, 48kms north west of Hamilton. The average annual rainfall at "White Oaks" is 650 mm (26"). Progeny are managed under strict commercial conditions.

Stock Management/Seasonal Conditions

The spring of 2003 saw a return to a normal season with above average rainfall of 690 mm recorded for the year. The 2003 drop lambs were born commencing 2nd September and were mulesed, marked and vaccinated early October. In late November they were weaned and received their second vaccination, first summer drench and were 'Clicked'. They were away to a good start after being imprint fed while on the ewes and continued with a small ration of grain being progressively increased to match their needs. The lambs were stocked at 18 lambs per hectare and fed 2kg of oats and approx. 3kg of silage per head per week. These lambs were crutched mid February and received their second summer drench at this time. Lambs were then supplementary fed through until the middle of May. Rainfall for April was 9mm, May 63mm and June 155mm. This was the wettest June on record for us for more than 50 years. Shearing of the 2003 drop progeny took place on 20th July after inclement weather caused delays. Due to several attempts to shear these sheep, body weights were down when taken on 11th August. Sheep were drenched on 3rd September and then performed through spring. The season was very wet through winter with very little pasture growth - a total of 494mm rain to 28th September, 2004.

The Sire Evaluation Open Day was well attended on March 22nd 2005 with the 2003 drop presented for their final public display. 2005 will be a year etched well into the memory of many people. The longest, driest autumn for many years; we finally received a break to the dry on the 9th of June and since then have received 119mm, year to date have received 223mm. We are only able to ease up on feeding towards the end of July 2005.
Stephen Silcock

The Evaluation & Management Program 2003 drop progeny:

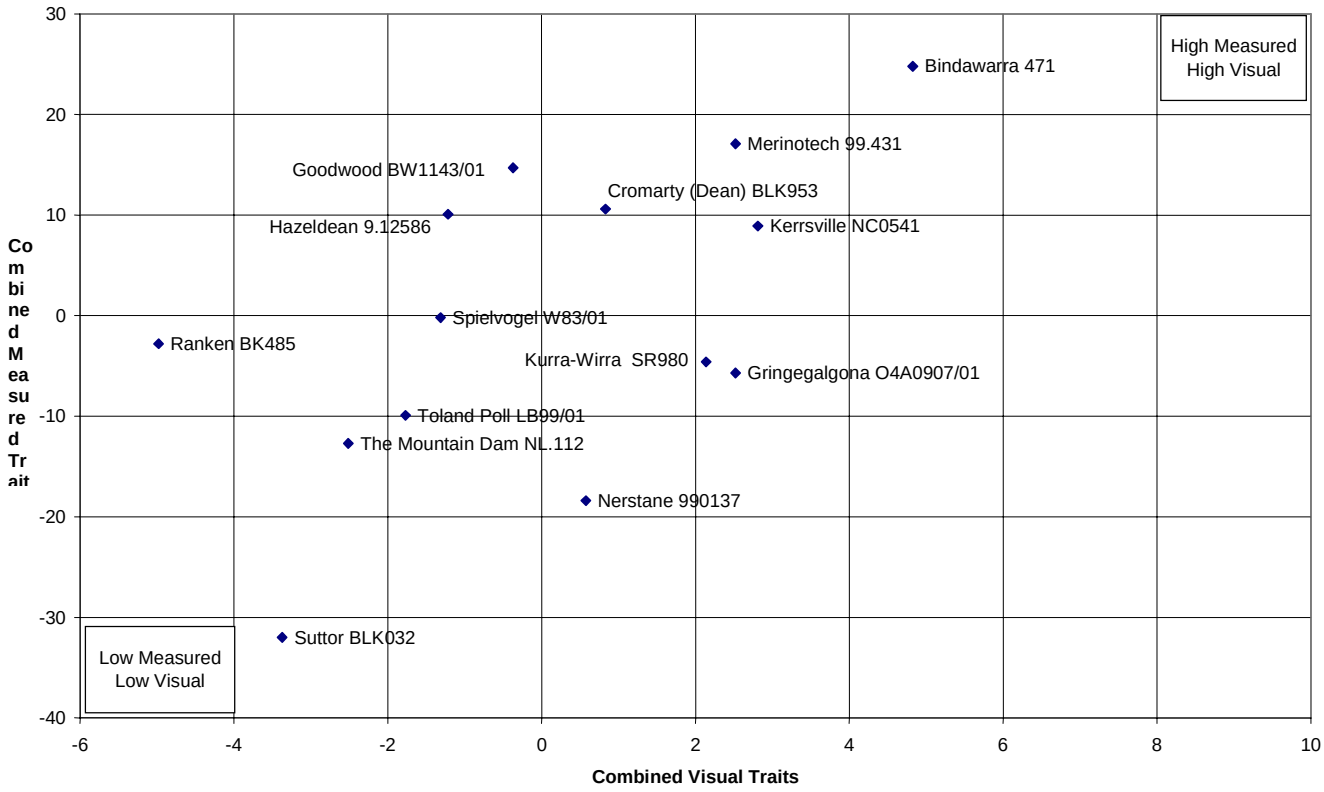
14th March 2003	Commenced AI program - Ewes sponged & teasers injected.
28th March 2003	Laparoscopic insemination of 860 ewes, conducted by Genstock
Mid May 2003	Ultrasound/scan ewes by Mark Jenkinson
Early July 2003	Ewes drafted into groups of singles & twins
Mid July 2003	Ewes drafted into 28 groups for lambing
24th August 2003	Ewes commenced lambing
15th September 2003	Lambs tagged & scored
Early October 2003	Marked & mulesed lambs, vaccinated
Late November 2003	Weaned lambs, 2nd vaccination, 1st summer drench and 'Clicked'
17th December 2003	Lambs body weighed (weaning weight)
December 2003	Supplementary feeding (imprint feeding while on ewes)
Mid February 2004	Lambs crutched, received 2nd summer drench
26th March 2004	Progeny on display at Open Day
23rd June 2004	Drench
25th June 2004	1st visual classing of progeny
20th July 2004	1st shearing (11months wool)
28th July 2004	Body weighing (yearling weight)
3rd September 2004	Drenched
Mid December 2004	Dip jetted for fly protection
Mid February 2005	Crutched
22nd March 2005	Progeny on display at Open Day
16th May 2005	2nd visual classing
23rd May 2005	2nd shearing (10 months wool, 21 months of age)
3rd June 2005	Body weighing

Classer for 2003 Drop Progeny: Mr Malcolm Nicholls, Elders Ltd

Figure 1: Summary Graph – **Combined Measured Traits and Classer's Grade 2003 drop – 2nd Evaluation**

Summary graph using the 6% Breeding Objective Index Option has been used to combine Measured Traits and Classer's Tops & Culls has been used to combine Visual Traits.

.



Combined Visual is calculated as (Tops % - Culls%)/5, expressed as a deviation from (Average Tops%-Average Culls%)/5.

Combined Measured is calculated as (6% MP Index - 100)

Example: Goodwood BW1143/01

Tops% = 23.91
Culls% = 10.87
6% MP Index = 114.7
Average Tops% = 24.32
Average Culls% = 9.42

Combined Visual = ((23.91-10.87)/5) - ((24.32-9.42)/5) = 13.04/5-14.90/5 = 2.61-2.98= -0.37

Combined Measured = 114.7 - 100 = 14.7

The RAMPOWER standard indexes:

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

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

Table A – **RAMPOWER Standard Index Options and Classer's Grade**
2003 Drop - 2nd Evaluation

		RAMPOWER Standard Index Options			Classer's Grade %		
Sire Identity	**No of progeny**	**3% MP**	**6% MP**	**12% MP**	**Tops %**	**Flocks %**	**Culls %**
Bindawarra 471 *	42	130	125	117	46	46	7
Cromarty (Dean) BLK953	43	107	111	113	26	67	7
Goodwood BW1143/01	47	112	115	117	24	65	11
Gringegalgona O4A0907/01	40	97	94	88	33	63	5
Hazeldean 9.12586	35	112	110	103	18	74	9
Kerrsville NC0541 *	39	116	109	103	32	66	3
Kurra-Wirra SR980	43	90	95	102	30	65	5
Merinotech 99.431	40	124	117	104	33	63	5
Nerstane 990137	45	83	82	86	27	64	9
Ranken BK485	40	90	97	104	10	70	20
Spielvogel W83/01	51	88	100	107	23	63	15
Suttor BLK032	53	72	68	75	10	78	12
The Mountain Dam NL.112	44	85	87	93	16	70	14
Toland Poll LB99/01	34	94	90	89	15	76	9
Average	43	100	100	100	24	66	9

* **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.

Figure 2 - **Summary Graph Fleece Weight/Fibre Diameter**
2003 drop - 2nd Evaluation

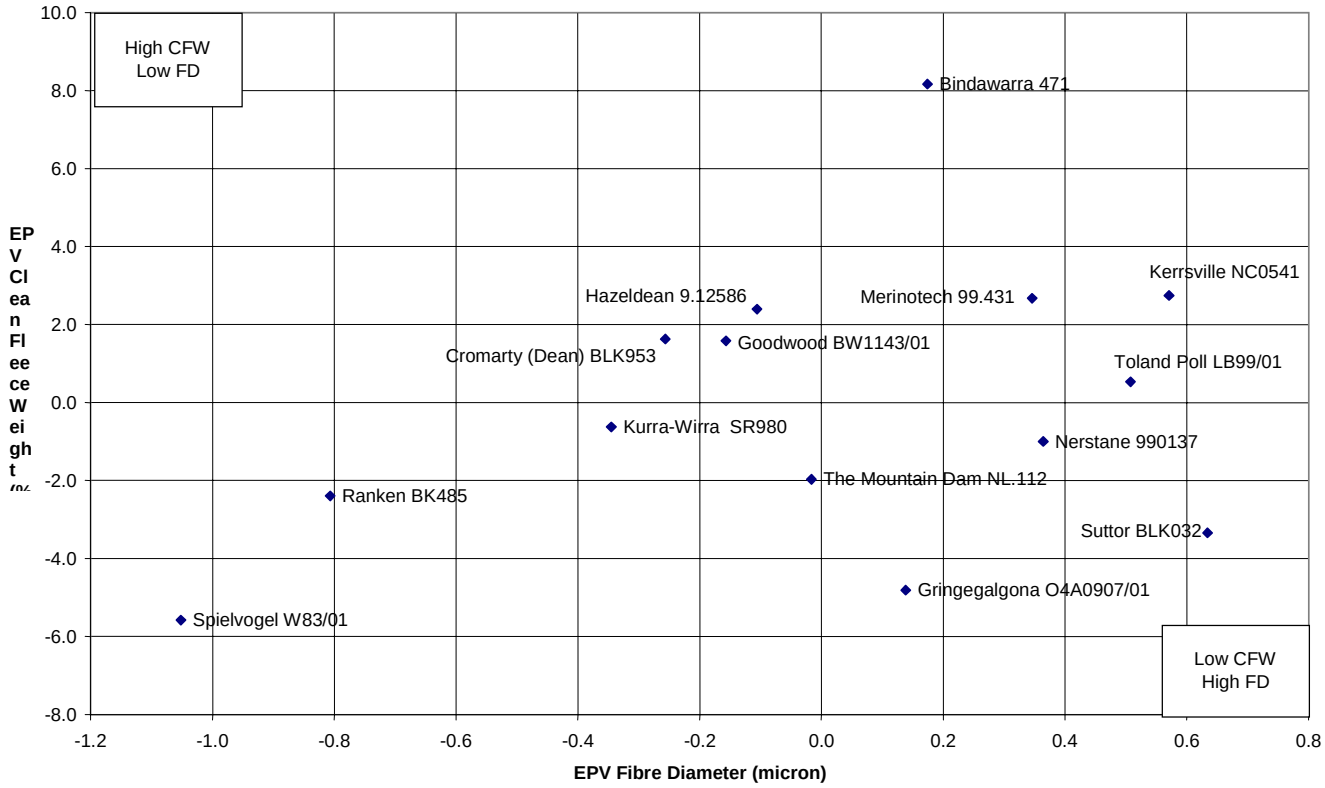


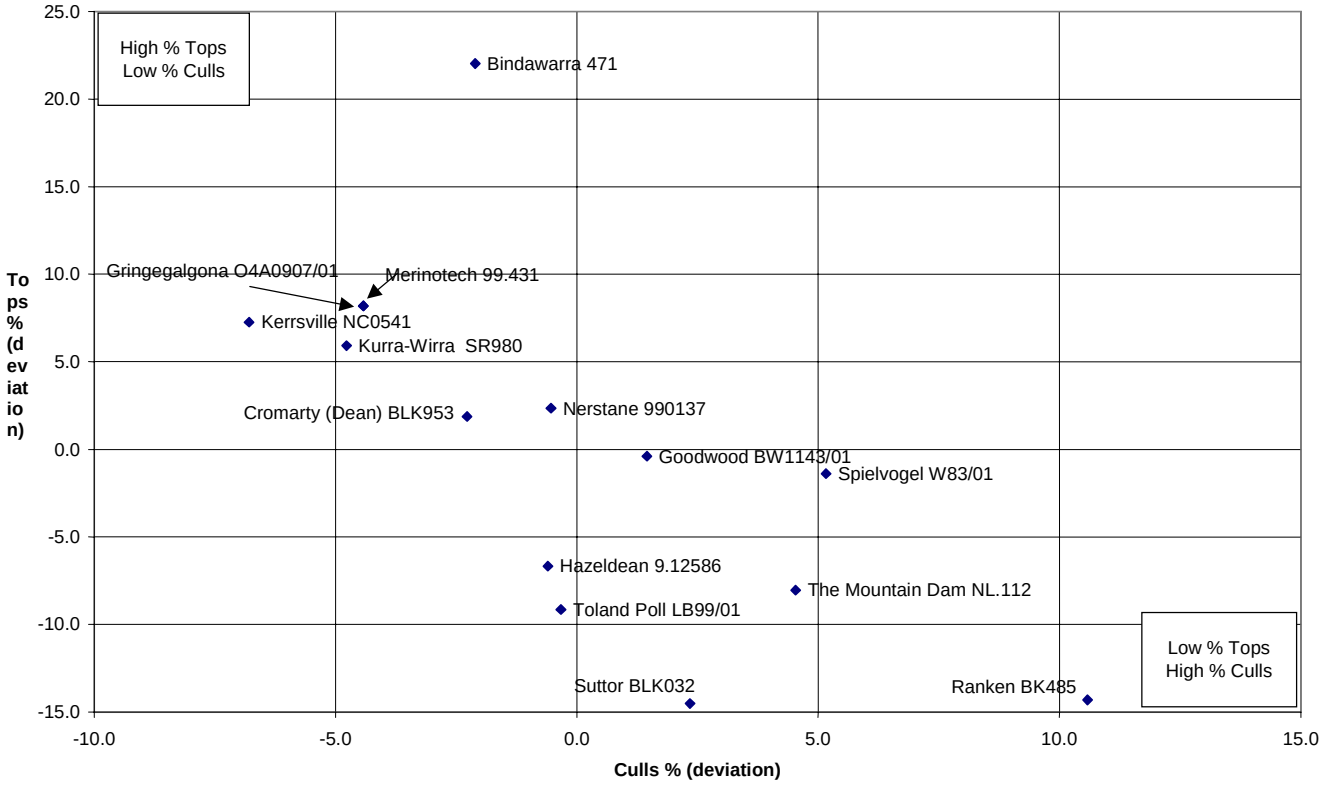
Table 1. Major Measured Traits – Estimated Progeny Values and Classer's Grade %

Sire Identity	No of progeny	Estimated Progeny Values								Classer's Grade %		
		GFW %		CFW %		FD µm		BWT %		Tops %	Flocks %	Culls %
		1st	2nd	1st	2nd	1st	2nd	1st	2nd			
Bindawarra 471 *	42	6.3	5.3	7.3	8.2	0.1	0.2	0.6	-0.1	46	46	7
Cromarty (Dean) BLK953	43	-2.0	-1.6	-0.3	1.6	-0.5	-0.3	-0.8	-0.3	26	67	7
Goodwood BW1143/01	47	0.1	0.1	2.2	1.6	-0.1	-0.2	-1.1	-1.3	24	65	11
Gringegalgona O4A0907/01	40	-2.1	-1.6	-2.9	-4.8	0.3	0.1	1.8	4.1	33	63	5
Hazeldean 9.12586	35	2.8	4.0	2.7	2.4	0.0	-0.1	-0.6	-0.3	18	74	9
Kerrsville NC0541 *	39	-3.6	0.4	-2.7	2.8	0.3	0.6	-1.0	2.2	32	66	3
Kurra-Wirra SR980	43	-2.9	-1.3	-2.8	-0.6	-0.4	-0.3	3.1	1.2	30	65	5
Merinotech 99.431	40	7.5	4.4	5.9	2.7	0.2	0.3	7.8	8.5	33	63	5
Nerstane 990137	45	0.4	1.2	-1.7	-1.0	0.1	0.4	-3.6	-3.7	27	64	9
Ranken BK485	40	-2.6	-0.8	-2.6	-2.4	-0.2	-0.8	1.5	-0.3	10	70	20
Spielvogel W83/01	51	-4.0	-6.7	-4.9	-5.6	-0.7	-1.1	-4.7	-3.2	23	63	15
Suttor BLK032	53	-6.4	-7.8	-3.9	-3.3	0.7	0.6	-1.9	-3.2	10	78	12
The Mountain Dam NL.112	44	2.5	2.4	0.6	-2.0	-0.1	0.0	-4.0	-4.9	16	70	14
Toland Poll LB99/01	34	4.0	2.1	2.9	0.5	0.2	0.5	2.8	1.3	15	76	9
Average	43	2.9 kg	4.2 kg	2.0 kg	3.0 kg	15.4 µm	16.9 µm	26.7 kg	35.8 kg	24	66	9

Table 2. Other Measured Traits – Estimated Progeny Values

Sire Identity	No of progeny	Estimated Progeny Values					
		CV %		YLD %		Staple Strength N/ktex	Staple Length mm
		1st	2nd	1st	2nd		
Bindawarra 471 *	42	-0.8	-0.7	0.8	1.6	1.8	6.3
Cromarty (Dean) BLK953	43	0.2	0.3	1.7	1.8	2.1	-5.2
Goodwood BW1143/01	47	-1.7	-1.1	1.9	0.7	3.1	0.9
Gringegalgona O4A0907/01	40	0.1	0.8	-0.2	-1.7	-5.1	0.0
Hazeldean 9.12586	35	0.9	0.5	0.0	-0.8	-3.1	1.8
Kerrsville NC0541 *	39	-0.5	-0.6	0.9	1.2	1.9	-0.8
Kurra-Wirra SR980	43	0.5	0.4	0.2	0.4	-0.2	-4.9
Merinotech 99.431	40	0.1	0.3	-1.4	-0.8	-3.4	3.6
Nerstane 990137	45	-0.1	-0.4	-2.1	-1.4	2.1	2.6
Ranken BK485	40	0.5	0.3	-0.5	-1.1	-0.9	-3.7
Spielvogel W83/01	51	0.8	0.4	-0.6	0.9	-4.9	-1.1
Suttor BLK032	53	0.2	0.0	2.0	2.3	4.4	-2.9
The Mountain Dam NL.112	44	-0.2	-0.3	-1.8	-2.3	1.2	1.5
Toland Poll LB99/01	34	0.1	0.1	-1.0	-0.8	0.9	1.9
Average	43	21.4 %	20.0 %	71.0 %	71.1 %	17.9 N/ktex	83.0 mm

Figure 3 - **Summary Graph Classer's Grades – 2003 drop - 2nd Evaluation**



Note: Gringegalgona O4A0907/01 and Merinotech 99.431 share the same data point on this graph

Table 3a. Other Measured Traits – Sire Least Square Means*

Sire Identity	No of progeny	Spin. F.	Std. Dev.	Curv.	Comfort Factor
Bindawarra 471	42	16.4	3.3	78.0	99.8
Cromarty (Dean) BLK953	43	16.2	3.4	77.4	99.8
Goodwood BW1143/01	47	16.0	3.1	79.0	99.9
Gringegalgona O4A0907/01	40	16.6	3.6	82.2	99.8
Hazeldean 9.12586	35	16.3	3.4	77.1	99.8
Kerrsville NC0541	39	16.8	3.4	83.4	99.7
Kurra-Wirra SR980	43	16.1	3.4	85.3	99.9
Merinotech 99.431	40	16.8	3.5	84.4	99.7
Nerstane 990137	45	16.5	3.3	78.3	99.7
Ranken BK485	40	15.6	3.2	86.4	99.9
Spielvogel W83/01	51	15.3	3.2	84.3	99.9
Suttor BLK032	53	16.9	3.5	82.3	99.7
The Mountain Dam NL.112	44	16.2	3.3	82.3	99.8
Toland Poll LB99/01	34	16.9	3.5	81.0	99.6
Average	43	16.3 µm	3.4 µm	81.6 deg/mm	99.8 %

* Least Square Means – corrected for number of progeny, sex and birth type

Table 3b. Measured Traits[1] – Sire Least Square Means*

Sire Identity	No of progeny	GFW	CFW	FD	BWT	CV	YLD	Str	SL
Bindawarra 471	42	4.4	3.2	17.1	36.3	19.1	73.0	19.0	90.0
Cromarty (Dean) BLK953	43	4.1	3.0	16.7	35.6	20.5	73.4	18.3	77.2
Goodwood BW1143/01	47	4.2	3.0	16.7	35.4	18.9	72.0	19.6	84.2
Gringegalgona O4A0907/01	40	4.1	2.8	17.1	38.0	21.2	68.8	14.3	83.4
Hazeldean 9.12586	35	4.4	3.1	16.8	36.1	20.3	70.0	16.0	85.0
Kerrsville NC0541	39	4.2	3.1	17.5	37.3	19.2	72.6	18.6	82.8
Kurra-Wirra SR980	43	4.2	3.0	16.6	36.0	20.6	71.6	17.2	77.4
Merinotech 99.431	40	4.4	3.1	17.4	40.2	20.3	69.9	15.4	87.2
Nerstane 990137	45	4.3	3.0	17.2	34.2	19.5	69.3	19.9	85.6
Ranken BK485	40	4.2	2.9	16.2	35.8	20.2	69.6	17.7	80.1
Spielvogel W83/01	51	3.9	2.8	15.9	34.2	20.3	72.3	14.4	81.4
Suttor BLK032	53	3.9	2.9	17.5	34.5	20.0	73.9	20.5	80.5
The Mountain Dam NL.112	44	4.3	2.9	16.8	33.6	19.5	68.1	19.3	84.3
Toland Poll LB99/01	34	4.3	3.0	17.4	36.6	20.2	70.0	18.6	84.8
Average	43	4.2 kg	3.0 kg	16.9 µm	35.8 kg	20.0 %	71.1 %	17.9 N/ktex	83.0 mm

[1] Measured traits presented as EPVs in Tables1 and 2,

* Least Square Means – corrected for number of progeny, sex and birth type

Tables 4. **Classer's Assessment – 2003 drop – 2nd Evaluation**

A sire's average score and the percentage of a sire's progeny for each score are reported.

Table 4a. Scored Wool Quality Traits

	Colour						Character						Staple Weathering						Fleece Rot						
	best				worst		best				worst		best				worst		best						worst
Sire Identity	Avg	1	2	3	4	5	Avg	1	2	3	4	5	Avg	1	2	3	4	5	Avg	0	1	2	3	4	5
Bindawarra 471	2.4	7	54	32	5	2	2.1	24	41	29	5		2.4		59	41			0.2	85	10	2	2		
Cromarty (Dean) BLK953	1.7	36	55	10			1.9	26	57	17			2.4		64	36			0.1	88	10	2			
Goodwood BW1143/01	2.3	17	39	39	4		2.2	17	50	28	4		2.5		50	46	4		0.2	83	13	4			
Gringegalgona O4A0907/01	2.1	20	53	23	5		2.2	13	55	30	3		2.4		65	33		3	0.2	90	5	5			
Hazeldean 9.12586	2.2	15	47	38			2.3	15	44	35	6		2.4		59	41			0.1	91	9				
Kerrsville NC0541	1.6	50	42	8			2.3	5	63	32			2.7		32	68			0.1	89	11				
Kurra-Wirra SR980	1.7	44	47	9			2.1	21	51	28			2.3		65	35			0.1	91	7	2			
Merinotech 99.431	2.3	8	60	30	3		2.8		28	65	8		2.7		28	73			0.2	90	5	3	3		
Nerstane 990137	2.0	29	40	29	2		2.0	27	58	11	2	2	2.5		53	44	2		0.1	91	7	2			
Ranken BK485	2.6	5	38	55	3		2.5	5	45	48	3		2.6		40	60			0.3	78	18	3	3		
Spielvogel W83/01	2.0	31	44	19	6		2.2	21	44	33	2		2.4		58	42			0.3	85	8	2	4		
Suttor BLK032	1.4	67	27	6			2.5	4	51	41	4		2.9		12	82	6		0.1	94	2	4			
The Mountain Dam NL.112	2.0	21	60	12	7		2.0	19	63	19			2.4		60	40			0.2	84	11	2	2		
Toland Poll LB99/01	2.2	6	67	27			2.5		45	55			2.6		45	52	3		0.0	97	3				
Average	2.0	27	47	23	3		2.2	14	50	33	3		2.5		49	50	1		0.2	88	8	2	1		

Table 4b. Scored Visual Wool Counts

Sire Identity	**62**	**64**	**66**	**70**	**74**
Bindawarra 471		41	46	12	
Cromarty (Dean) BLK953		24	48	29	
Goodwood BW1143/01		24	41	35	
Gringegalgona O4A0907/01		23	53	25	
Hazeldean 9.12586		38	50	12	
Kerrsville NC0541		8	26	63	3
Kurra-Wirra SR980			21	77	2
Merinotech 99.431	5	18	28	48	3
Nerstane 990137	2	22	44	31	
Ranken BK485		15	33	45	8
Spielvogel W83/01			44	54	2
Suttor BLK032		14	29	55	2
The Mountain Dam NL.112		12	35	53	
Toland Poll LB99/01		30	42	27	
Average	1	18	38	41	1

Note: Rows appear to not always sum to 100%. This is due to rounding to the nearest percentage.

Table 4c Scored Conformation traits

	Face						Neck / Body Development						Feet / Legs						Jaw	Back / Shoulder
	*		Acceptable			*	*		acceptable			*	best					worst		
Sire Identity	Avg	1	2	3	4	5	Avg	1	2	3	4	5	Avg	1	2	3	4	5	Neg[1]	Neg[1]
Bindawarra 471	2.2	5	68	27			2.5		59	37	5		1.3	73	24	2				5
Cromarty (Dean) BLK953	2.9		43	31	24	2	2.8		24	71	5		2.1	33	26	36	2	2		2
Goodwood BW1143/01	2.3	2	76	15	7		2.4		61	39			1.9	41	35	17	7		2	13
Gringegalgona O4A0907/01	2.2	3	78	20			2.5	3	43	55			1.7	68	18	3	8	5		8
Hazeldean 9.12586	2.9		21	74	3	3	2.8		24	76			2.1	38	32	12	15	3		3
Kerrsville NC0541	2.6		47	42	11		2.6		39	61			1.6	55	32	13				3
Kurra-Wirra SR980	2.7		42	49	5	5	2.7		40	56	5		1.7	49	40	7	5			7
Merinotech 99.431	2.1	3	90	8			2.5	3	43	55			1.3	83	10	8			3	3
Nerstane 990137	2.4		64	29	7		2.5	2	44	53			2.	36	38	18	9		2	4
Ranken BK485	2.7		55	33	5	8	2.8		25	68	8		2.3	28	38	18	18			8
Spielvogel W83/01	2.8		46	35	17	2	2.4		60	38		2	2.	44	27	15	15			6
Suttor BLK032	2.8		43	41	12	4	2.7		31	65	4		2.3	20	45	20	16			4
The Mountain Dam NL.112	2.4		56	44			2.8		21	79			2.4	21	37	23	16	2		9
Toland Poll LB99/01	2.2		85	9	6		2.6	3	30	67			1.8	42	36	15	6			
Average	2.5	1	58	33	7	2	2.6	1	39	58	2		1.9	44	32	15	8	**1**	**1**	**5**

* For the Face and Neck/Body Development traits, scores of 2, 3 and 4 are most acceptable, scores of 1 and 5 are less acceptable.
[1] The percentage of progeny with negative expression of the trait is described.

Table 4d. Pigmentation

	Black Lamb	Wool	Skin
Sire Identity	**Neg[1]**	**Neg[1]**	**Neg[1]**
Bindawarra 471			23
Cromarty (Dean) BLK953		7	43
Goodwood BW1143/01			8
Gringegalgona O4A0907/01			12
Hazeldean 9.12586		8	15
Kerrsville NC0541		7	32
Kurra-Wirra SR980		4	2
Merinotech 99.431		3	18
Nerstane 990137		2	13
Ranken BK485		5	21
Spielvogel W83/01		6	28
Suttor BLK032		2	15
The Mountain Dam NL.112		5	25
Toland Poll LB99/01		6	34
Average		4	20

[1] The percentage of progeny with negative expression of the trait is described

Table 5. Calculated Fleece Value

		SIRE GROUP AVERAGE						Premiums (+) / Discounts (-)			Price	Fleece value
		CFW	FD	YLD	Vm	Str	SL					
Sire Identity	**AWEX ID**	**kg**	**µm**	**%**	**%**	**N/ktex**	**mm**	**SL**	**Str**	**Total**	**cents/ kg clean**	**$/fleece**
Bindawarra 471	MF4	3.2	17.1	73	1.0	20	89	-20	-422	-442	1095	$35.43
Cromarty (Dean) BLK953	MF4	3.0	16.6	73	1.0	20	78	-20	-597	-617	1206	$36.65
Goodwood BW1143/01	MF4	3.0	16.7	72	1.0	21	84	-20	-532	-552	1210	$36.76
Gringegalgona O4A0907/01	MF4	2.8	17.0	69	1.0	13	83	-20	-557	-577	1003	$28.56
Hazeldean 9.12586	MF4	3.1	16.8	70	1.0	15	85	-20	-645	-665	1036	$31.74
Kerrsville NC0541	MF4	3.1	17.5	72	1.0	20	82	-20	-317	-337	1027	$31.55
Kurra-Wirra SR980	MF4	3.0	16.6	72	1.0	18	78	-20	-659	-679	1144	$34.00
Merinotech 99.431	MF4	3.1	17.2	70	1.0	14	87	-20	-493	-513	980	$30.09
Nerstane 990137	MF4	3.0	17.3	70	1.0	20	86	-20	-369	-389	1061	$31.40
Ranken BK485	MF4	2.9	16.1	70	1.0	17	79	-20	-906	-984	1189	$34.72
Spielvogel W83/01	MF4	2.8	15.8	72	1.0	13	82	-20	-1049	-1129	1089	$30.74
Suttor BLK032	MF4	2.9	17.5	73	1.0	22	80	-20	-283	-303	1061	$30.66
The Mountain Dam NL.112	MF4	2.9	16.9	69	1.0	19	84	-20	-507	-527	1114	$32.66
Toland Poll LB99/01	MF4	3.0	17.4	70	1.0	19	85	-20	-358	-378	1029	$30.94

Prices and premiums / discounts were obtained from AWI's Woolcheque website (http://www.woolcheque.com.au), using latest 3 full seasons (average) and the Southern region.

Table 6. Progeny Group Classing.

The classer, Mr Mal Nicholls, visually assessed each sire group. Evenness of each group was scored from 1 (most even) to 5 (highly variable). General comments were also noted by the classer on each progeny group. The classer did not know the identity of the sire of each group at the time of classing.

Sire Identity	Comments on Conformation	Comments on Wool	Comments on Evenness	Score for Evenness
Bindawarra 471	Large frame.	Well nourished.	Very even group.	1.0
Cromarty (Dean) BLK953	Mixed frame size.	One with black eye. Some face cover.	Quite uneven.	3.5
Goodwood BW1143/01	Mixed frames. Odd one hocky. Heads OK.	Free growing.	Quite uneven.	3.5
Gringegalgona O4A0907/01	Stretchy frame, legs fair.	Well covered.	Thick wool. Faces good.	2.5
Hazeldean 9.12586	Evenly well framed.	Good cover & open faces.	Very even.	1.5
Kerrsville NC0541	Medium, but some smaller.	Well covered. Some variation.	A little mixed.	3.0
Kurra-Wirra SR980	Some necky sheep. Some plain / smaller.	Well covered. Some face cover.	Not as even as most.	3.0
Merinotech 99.431	Large frame; odd one smaller.	Well covered. Open face. Good cutters.	Odd narrow sheep, but balance very good.	2.0
Nerstane 990137	Medium frame.	Well nourished.	Odd sheep light & dry, unlike majority.	2.5
Ranken BK485	Heavier necks. Shorter body.	Some face cover but most good.	Some smaller.	2.5
Spielvogel W83/01	Good stretchy frame. Good heads.	Well covered.	Odd smaller animal, but quite even.	1.5
Suttor BLK032	Smaller frame.	Good coverage. Some face cover.	Bit mixed.	3.0
The Mountain Dam NL.112	Medium to large frame.	Well covered.	OK	2.0
Toland Poll LB99/01	Good frame.	Dense wool types.	Good faces.	2.0