

# Merino bloodlines: the comparisons 1999–2010

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## Introduction

Performance differences between many commonly used Merino bloodlines have been updated with the 2010 analysis of 57 wether and ewe productivity trials conducted in NSW (24), WA (27), Tasmania (1), and Victoria (5) between 1999 and 2010.

This analysis includes all data from the Victorian Merinos to Match project, the Western Australian Ewe Productivity trials and all current NSW wether trials.

The previous analysis was derived from wether and ewe comparisons run between 1996 and 2006. The bloodlines represented in the current analysis, compared with the previous analysis, include 65 new and 203 common bloodlines. Results from bloodlines with medium and high accuracy data are publicly reported.

Bloodline data used in this analysis have been sourced from wether and ewe comparisons that have been run for a minimum of two years, and an average of three years.

For teams to be included in this analysis they are required to be selected according to the guidelines set out in *Designing and conducting Merino wether comparisons and on-farm genetic evaluations* (page 21).

Bloodline Performance information reported in this Primefact complements Australian Sheep Breeding Values provided by MERINOSELECT (page 21) that define the genetic merit of individual sheep. Having chosen a bloodline using the Bloodline Performance information in this Primefact, breeders are then able to select rams from the bloodline of their choice.

## How to use the information

Table 1 (page 5) reports 145 bloodlines with medium and high accuracy performance for 11 individual traits as well as traits combined in two gross income values. Bloodlines are listed in alphabetical order in Table 1. Table 1a (page 4) provides an explanation of Table 1 headings.

Figures 2a (high accuracy), 2b and 2c (medium accuracy) graph the clean fleece weight and fibre diameter performance reported in Table 1. The codes listed next to the bloodlines in Table 1 can be used to identify the bloodlines shown on these graphs.

The average values (zero in the graphs) for fibre diameter and clean fleece weight are 20.0  $\mu\text{m}$  and 4.3 kg respectively. The averages for other traits are located at the bottom of each page in Table 1.

Figures 3a, 3b and 3c show the bloodlines gross income performance per dry sheep equivalent (DSE) and fibre diameter.

Figures 5 show the bloodlines perform for gross income using the average wool market values between 2005/06 and 2009/10.

## Changes and additions

In this report, the economic performance of bloodlines is reported as **gross income** rather than gross margin as in previous reports.

Another key difference between the calculation of gross income in this report and the way gross margin was calculated in previous reports relates to the relative contribution of wool and meat. In this report, gross income is based on a flock structure where the ratio of fleeces to sheep sold in any year is 2.5 to 1. For example, in a flock with 1000 breeding ewes where wether lambs are shorn before being sold, there would be approximately 2000 sheep shorn (adults, hoggets and weaners) and 800 sheep sold (CFA ewes, cull ewes and all wethers) each year.

In previous reports, gross margin was based on a fleece to sheep ratio of 4 to 1, reflecting a wether

flock with four age groups. More information about gross income is provided on page 3.

Traits reported by some wether and ewe trial sites but not reported in this Primefact include meat traits, face cover, fertility, wrinkle/development and fleece rot.

Some of these traits are evaluated at **Merino sire evaluation** sites, and site reports can be accessed from the Australian Merino Sire Evaluation Association's Merino Superior Sires website: <http://www.merinosuperiorsires.com.au> or via Sheep Genetics MERINOSELECT website <http://www.sheepgenetics.org.au/MERINOSELECT>

### The trends

The performance levels of 268 bloodlines involved in wether and ewe comparisons are compared for fleece weight, fibre diameter, liveweight and wool quality traits – style, yield, length, colour and staple strength.

The 145 bloodlines reported in this Primefact have information that is of high to medium accuracy. This accuracy is based on the number of clean fleece weight measurements analysed from participating wether and ewe productivity trials that have met the required standard error and were conducted between 1999 and 2010.

### Wool Production

Figure 1 shows the performance of bloodlines for clean fleece weight and fibre diameter. The 145 high and medium accuracy bloodlines are shown by the dark triangles and the 123 low accuracy

bloodlines are shown by the light circles. The curved line of best fit through the bloodlines shows a varying trend for different sectors of the industry:

- Across the fine wool bloodlines (18-19 micron) there is a 6% increase in clean fleece weight for each 1µm increase in fibre diameter.
- Across the medium wool bloodlines (20-21 micron) there is a 3.1% increase in clean fleece weight for each 1µm increase in fibre diameter.
- Across the medium to broad wool bloodlines (22-23 micron) there is a 0.2% increase in clean fleece weight for each 1µm increase in fibre diameter.

### Wool Quality

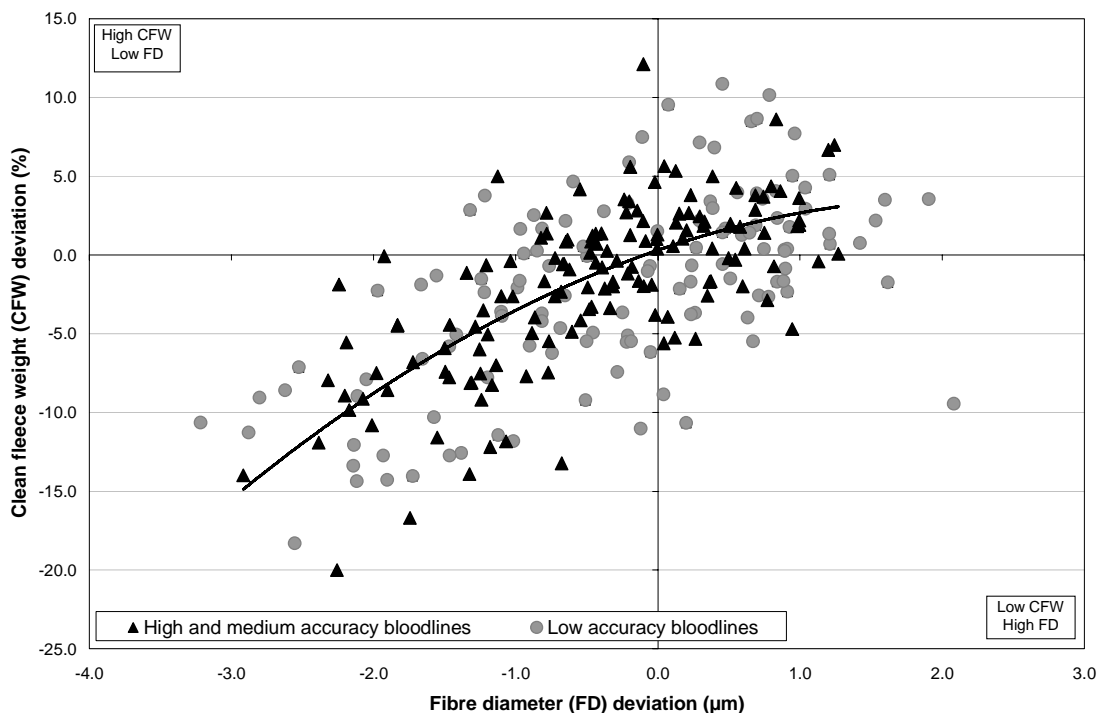
For the 268 bloodlines analysed, the trends between fibre diameter and the other wool quality traits indicate that finer bloodlines generally have shorter length, better style and better colour. There was no apparent relationship between fibre diameter and staple strength. The performance for these traits is reported in Table 1.

### Liveweight

Finer bloodlines tended to have lower liveweights than their medium wool counterparts. The overall relationship is an increase of 1.2% in liveweight for each 1 µm increase in fibre diameter. There is a 19% difference in liveweight between the heaviest and lightest bloodlines.

Liveweight is the major determinant of carcass value and is used to calculate the gross income for bloodlines reported.

Figure 1 Trend for clean fleece weight relative to fibre diameter – 268 Merino bloodlines



## The genetic differences

The performance of teams of sheep in different wether and ewe trials is a combination of the genetics of the sheep and the environment.

Performance = environment + genetics

The bloodline performance analysis removes the differences in environments between years in a trial and between trials thus allowing this Primefact to report only the genetic differences between bloodlines.

The analysis combines ewe and wether trials so that the flock performances for each bloodline can be effectively combined to give the performance of each of the bloodlines involved.

Of the 268 bloodlines in the analysis the performance levels of the 145 high and medium accuracy bloodlines are considered sufficiently accurate to be reported (Table 1). Table 3 lists the 123 low accuracy bloodlines (page 18).

## Wool production and quality

Figures 2a, 2b and 2c show the relative performance of bloodlines for clean fleece weight and fibre diameter. Each bloodline is represented by a code that can be matched with the bloodline named in Table 1 which is reported in alphabetical and code order. Table 1 provides detailed results for clean fleece weight, fibre diameter, liveweight and wool quality traits. The average performance for all 268 bloodlines (high, medium and low accuracies) is reported at the bottom of each page in Table 1.

## The returns

The economic performance of bloodlines is reported as gross income.

Table 1 reports the gross income per dry sheep equivalent (\$/DSE) and gross income per sheep (\$/head). Gross income for each bloodline (both per DSE and per head) is reported as the percentage difference from the average of all 268 bloodlines analysed.

Gross income is based on the income generated by the sale of 2.5 fleeces to one sheep sale. While the importance of wool and meat vary between flocks (ranging between 2:1 to 3:1), it is felt that in most circumstances this ratio of 2.5:1 best represents the relative contributions of wool and meat income in a typical Merino flock.

The wool and carcass values are based on the average wool and mutton prices over the five years from 2005/06 to 2009/10 and measured trait performance for each bloodline.

Income per DSE accounts for differences in potential stocking rate that arise from differences in

feed requirements. The DSE rating is based on liveweight, which is known to be a key determinant of feed intake.

The bloodline gross income per DSE ranges from 19.4% above the average to 12.4% below the average. The production differences between the bloodlines have therefore translated into these very significant differences in their income earning potential.

The average fleece value per bloodline was \$32.65 and the average carcass value was \$49.89. There is substantial variation around these averages with a 45% and 17% difference respectively between the highest and lowest performing bloodlines.

## Contribution of traits

The economic value of all the traits, including the wool quality traits, has been used to calculate the gross income (per DSE and per head) for each bloodline.

Together, fleece weight and fibre diameter dictated the majority of the economic value of bloodlines. In the 2005/06 to 2009/10 period fleece weight and fibre diameter accounted for 91% of the total variation between bloodlines for gross income or 18% and 73% respectively.

Of the remaining variation in gross income, liveweight accounted for 6% and the other wool quality traits accounted for the remaining 3% of variation. Since style, staple length and colour are all moderately to highly correlated with fibre diameter, some of the influence of these traits would have been accounted for by fibre diameter.

The strong relationship between the fibre diameter and economic performance of bloodlines is apparent in Figures 3a, 3b and 3c.

The average micron premiums for 2005/06 to 2009/10 are presented in Figure 4 and Table 4 on page 19. An explanation of micron premiums is provided on page 20. Note that within any year the micron premiums vary for the different fibre diameter indicators.

## Limitations

The information presented in this publication is an excellent starting point when comparing Merino bloodlines, however it has some limitations:

- The analysis is unable to account for the different standard of sires used by entrants representing a bloodline.
- The analysis is unable to account for the number of entrants representing each bloodline or if the teams have come from the bloodlines ram breeding flock or from this flocks commercial clients. However the number of teams and the number of sheep evaluated for

each bloodline (No. of records) is reported in Table 1.

- The income values do not account for any variation due to reproductive performance.
- Bloodline performance is historic, reflecting genetic performance that ranges back over a 10 year period. If the bloodline data is based on teams direct from the bloodline the result is more reflective of the bloodlines current performance. Data from commercial teams increases the gap (genetic lag) to current bloodline performance.

While these limitations are present the information in this Primefact does allow the reader to assess the likely production and profitability in their own situation for the bloodlines reported.

When using bloodline performance information to evaluate one or more bloodlines it is important to ask the bloodline contact to provide information that describes their bloodline's genetic improvement and direction.

Primefact 74 *Choosing a Bloodline Source*, provides a comprehensive description of how to use bloodline performance information to evaluate one or more bloodlines.

Table 1a Explanation of headings in Table 1

Code	Number used to find a bloodline on the graphs.
\$/DSE	Bloodline gross income per dry sheep equivalent, reported as a percentage deviation from the average. The gross income is calculated using a five year average wool price from 2005/06 to 2009/10 (adjusted for other wool characteristics such as staple strength, style and colour) and a carcass value based on average mutton prices over the same period. One fleece and 0.4 carcass value (2.5:1) are combined to make up the gross income. Bloodline liveweight is used to calculate a DSE rating, to account for differences in potential stocking rate.
\$/head	Bloodline gross income per head reported as a percentage deviation from the average. \$/head is calculated as for \$/DSE except there is no adjustment for liveweight.
CFW and WT	Clean fleece weight and liveweight reported as percentage deviations from the average.
FD, YLD and FDCV	Fibre diameter, yield and coefficient of variation fibre diameter are reported as deviations from the average.
FDST	Fibre diameter stability is the annual change in fibre diameter with age, reported in microns per year. For example, if the FDST is 0.1 it is expected that as sheep get older their fibre diameter will increase genetically by 0.63 $\mu$ per year (0.53 + 0.1) where 0.53 $\mu$ is the average expected increase in FD as a wether ages.
CFWST	Clean fleece weight stability is the annual change in clean fleece weight with age, reported as a percentage deviation. For example, if the CFWST is 1.25 it is expected that as a sheep gets older their clean fleece weight will genetically increase by 6.25% per year (5.0 + 1.25) where 5.0% is the average expected increase in CFW as a wether ages.
Style	Wool style – spinners (MF3), best (MF4), good (MF5), average (MF6) and inferior (MF7) grades (coded 1 to 5 respectively). Reported as deviation from the average. For more information go to <a href="http://www.awex.com.au/standards/awex-id-_and_-_appraisers.html">http://www.awex.com.au/standards/awex-id-_and_-_appraisers.html</a>
SL	Staple length – reported as a deviation in millimetres.
Col	Fleece colour – no colour, light unscourable and medium unscourable grades (coded 1 to 3 respectively). Reported as deviation from the average. For more information go to <a href="http://www.awex.com.au/standards/awex-id-_and_-_appraisers.html">http://www.awex.com.au/standards/awex-id-_and_-_appraisers.html</a>
SS	Staple strength reported as a deviation in N/ktex.
No. of teams	The number of wether or ewe teams representing the bloodline in the analysis. Bloodlines can be represented by teams from the ram breeding flock itself and/or by clients' teams.
No. of records	The number of records for a bloodline. This includes repeated evaluation of the same sheep.
Acc	Accuracy: H = High accuracy (the standard error for CFW is less than 2%), M = Medium accuracy (the standard error for CFW is from 2% up to 3%)
Average	Average performance for that record, across all the 268 bloodlines analysed and reported in the units displayed beneath the trait's name at the top of the table.

Table 1 Bloodline performance: production traits, components of wool type and gross income performance for the 145 high and medium accuracy bloodlines

Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	(µm)	(%)	(µm/yr)	(%/yr)	(%)	(µm)		(mm)		(N/kt)	(%)	(%)	Team	Record	
A.M.S	1	-7.7	-0.9	-3.6	-0.08	0.31	1.5	-1.9	-0.01	0.5	0.14	-0.6	-0.9	0.8	5	309	H
Aberdeen	2	-2.0	-0.1	-1.2	-0.04	0.14	-4.8	-0.8	0.08	1.7	0.08	-3.0	-1.3	-4.2	3	42	M
Akeringa	3	-0.7	0.8	-2.3	-0.12	0.54	-3.6	1.8	0.05	2.2	0.07	-3.3	-2.7	-4.7	3	48	M
Alfoxton	4	-8.3	-1.2	-2.8	0.02	1.09	-4.4	-0.2	-0.01	-5.8	-0.14	1.1	1.2	-1.4	2	59	M
Allendale	5	-0.2	0.5	-0.3	0.16	-0.70	1.5	0.1	0.03	-0.1	0.06	-0.3	-6.6	-4.9	2	80	M
Ashgrove	6	0.6	0.1	-1.5	0.03	-1.47	6.9	0.5	0.07	2.0	0.19	0.0	-6.3	-1.0	3	90	M
Avenel	7	0.7	-0.4	-0.7	0.15	0.30	-1.1	1.3	0.08	3.0	0.01	-3.5	2.8	2.6	5	153	H
Avonside	8	-2.1	-0.5	-0.4	0.10	2.17	-5.0	0.1	0.13	-2.2	-0.01	0.1	0.2	-2.8	5	178	H
Barrackville	9	-4.6	-1.3	-1.3	-0.40	-1.99	-5.3	-0.9	-0.08	-4.9	-0.12	-0.4	6.0	2.5	5	151	H
Belbourie	10	2.0	0.5	-0.1	0.07	1.16	-3.3	1.5	0.05	1.6	0.07	-2.5	-2.6	-4.3	3	45	M
Billandri	11	-0.4	-1.0	0.0	-0.05	-0.41	-0.8	0.3	0.03	0.0	0.10	-2.4	6.6	6.7	19	693	H
Blackford	12	-5.5	-0.8	-2.8	-0.58	-3.28	0.9	-2.1	-0.03	3.2	0.02	2.6	-1.6	-0.3	3	48	M
Blenwood Peak	13	1.8	0.3	-1.9	-0.03	-0.73	1.4	0.5	0.18	0.3	0.30	-0.7	-4.6	-3.1	2	76	M
Bogo	14	-1.1	-1.3	-1.3	-0.05	0.58	-2.9	-0.5	-0.11	1.2	-0.07	1.3	9.0	7.4	12	553	H
Brookdale	15	1.3	0.0	0.0	0.17	0.21	5.7	-1.0	-0.03	2.5	0.00	0.5	-4.2	0.4	2	95	M
Bullamalita	16	-13.9	-1.3	-1.0	-0.45	0.14	-6.8	-1.0	0.03	-7.9	-0.40	1.5	-0.3	-4.7	2	65	M
Bungoona	17	2.0	0.1	3.9	0.09	-0.01	-0.4	-1.2	0.03	3.5	-0.06	1.1	-2.9	-2.6	4	161	H
Bungulla	18	0.4	0.6	-0.8	0.06	1.29	-3.2	-1.5	-0.03	5.9	-0.05	-0.3	-2.1	-3.8	2	72	M
Cahirblonig	19	-0.5	-0.4	-0.9	-0.04	0.14	-4.8	-0.2	-0.28	-1.0	-0.05	0.2	2.1	-0.9	3	17	M
Cardo	20	2.9	0.7	1.2	0.47	-1.43	3.4	0.1	0.19	-1.7	0.17	-0.5	-3.9	-0.9	2	89	M
Cassilis Park	21	-3.9	0.1	0.3	-0.06	1.26	-2.1	-0.4	0.06	-1.7	0.09	-1.0	-5.5	-6.4	5	149	H
<b>Averages</b>		<b>4.3</b> kg	<b>20.0</b> µm	<b>72.0</b> %	<b>0.53</b> µm	<b>5.03</b> %	<b>51.5</b> kg	<b>19.8</b> µm	<b>2.7</b>	<b>81.1</b> mm	<b>1.2</b>	<b>37.4</b> N/kt	<b>\$ 51.78</b>	<b>\$ 52.62</b>			

Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	(µm)	(%)	(µm/yr)	(%/yr)	(%)	(µm)		(mm)		(N/kt)	(%)	(%)	Team	Record	
Castellon	22	1.1	-0.8	-0.2	-0.12	2.01	-0.5	0.3	0.00	-1.1	-0.12	0.1	4.5	4.8	2	61	M
Centre Plus	23	-2.1	-0.4	-2.4	-0.46	-0.76	4.9	-1.5	-0.02	5.2	-0.02	-0.2	-3.0	1.1	2	64	M
Charinga	24	12.1	-0.1	2.9	0.17	0.14	4.1	-1.5	0.05	1.9	0.03	2.2	1.7	5.3	3	48	M
Charvid	25	1.9	1.0	-1.5	0.06	-1.67	-4.8	-1.1	0.08	8.6	0.13	1.2	-1.4	-4.3	2	34	M
Claypans	26	4.4	0.8	0.3	0.11	-1.05	5.6	-0.3	-0.03	0.1	-0.07	2.8	-4.2	0.3	2	94	M
Colvin	27	0.1	-0.5	-1.2	-0.22	0.14	1.8	-0.8	-0.19	6.3	0.01	0.5	0.3	2.2	5	254	M
Coonong	28	-2.0	0.6	-0.8	-0.10	1.39	3.3	-0.6	0.00	2.0	0.00	-1.3	-7.4	-4.5	2	90	M
Cora Lynn	29	1.4	-0.4	-1.4	-0.06	0.21	-1.9	0.8	0.00	-1.4	0.28	-0.5	0.6	-0.1	2	75	M
Coromandel Poll	30	-3.4	-0.5	-0.1	0.07	1.30	-0.6	-1.1	-0.01	1.7	-0.03	2.1	-2.3	-2.1	2	89	M
Corroboree	31	-4.0	-0.9	-0.6	-0.04	-1.70	-4.3	-0.8	-0.03	4.5	-0.10	0.7	3.4	0.7	6	327	H
Cottage Park	32	2.7	-0.2	-0.9	0.10	0.98	-1.6	0.4	0.10	-1.5	0.01	-2.2	1.3	0.8	7	205	H
Cranmore Downs	33	-7.5	-1.2	-3.5	-0.13	0.66	-4.8	-0.6	-0.13	4.9	0.10	0.7	4.5	1.5	2	47	M
Cranmore Park	34	-4.2	-0.5	-2.5	-0.19	-0.83	3.2	-1.1	-0.09	2.7	-0.01	1.7	-2.9	0.0	10	479	H
Cressbrook	35	-7.4	-1.5	1.6	-0.18	0.82	-3.1	-1.8	-0.13	-3.6	-0.12	2.4	3.8	2.1	12	507	H
Demondrille	36	-4.9	-0.6	-2.0	-0.02	0.30	-3.1	-1.0	-0.07	-4.8	-0.25	1.3	-1.0	-2.6	3	140	H
Dongiemon	37	-1.7	0.4	0.5	0.47	-1.35	-3.4	1.4	-0.20	1.7	-0.07	-8.0	-1.3	-3.2	2	65	M
East Loddon	38	5.6	-0.2	1.6	0.14	-6.53	0.4	0.1	0.08	-1.4	0.00	-1.2	1.1	2.0	5	97	H
Eastville Park	39	6.7	1.2	0.5	0.18	-0.26	4.6	1.3	-0.02	3.5	0.09	1.4	-3.0	0.8	2	118	M
Egelabra	40	-1.7	-0.8	-1.1	-0.17	0.02	-1.5	-0.6	-0.02	0.2	-0.12	-0.3	2.7	2.3	11	531	H
Eilan Donan	41	-9.2	-1.2	-1.8	-0.34	-0.04	-1.2	-1.5	-0.04	-6.0	-0.10	-0.6	0.8	0.5	5	93	H
Ellerina	42	-5.0	-0.9	-0.2	0.00	0.64	-7.3	-0.1	-0.08	-2.3	-0.11	-2.5	4.4	-0.6	2	46	M
Eural	43	-1.2	-0.2	-1.5	0.11	-1.47	-2.2	0.0	0.17	3.4	0.08	-1.6	-0.6	-1.5	2	62	M
<b>Averages</b>		<b>4.3</b>	<b>20.0</b>	<b>72.0</b>	<b>0.53</b>	<b>5.03</b>	<b>51.5</b>	<b>19.8</b>	<b>2.7</b>	<b>81.1</b>	<b>1.2</b>	<b>37.4</b>	<b>\$ 51.78</b>	<b>\$ 52.62</b>			
		kg	µm	%	µm	%	kg	µm		mm		N/kt					

Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	(µm)	(%)	(µm/yr)	(%/yr)	(%)	(µm)		(mm)		(N/kt)	(%)	(%)	Team	Record	
Gannawarra	44	-4.7	0.9	-4.2	0.02	-0.52	0.7	0.4	0.00	4.3	0.36	-0.9	-7.3	-6.2	2	62	M
Gilgunyah	45	-8.9	-2.2	1.4	-0.50	-1.29	-5.8	-1.6	-0.25	-8.1	-0.19	0.0	9.0	5.0	2	32	M
Glanna	46	-7.8	-1.5	-0.6	-0.18	0.56	-6.2	-1.2	-0.13	-7.2	-0.22	1.3	4.5	0.4	5	83	H
Glen Byrne	47	1.6	0.2	-0.7	-0.16	-0.45	1.6	-0.4	-0.01	-3.9	0.16	1.6	-5.6	-3.9	2	129	M
Glen Donald	48	-0.4	-0.3	-2.8	0.12	0.97	-2.3	0.8	0.07	-2.7	0.06	-3.2	-0.1	-1.2	8	349	H
Gowandale	49	2.1	0.3	2.1	0.36	4.85	-0.7	0.1	0.00	3.9	0.04	-0.1	-3.1	-3.0	6	94	H
Greendale	50	5.0	-1.1	-1.6	-0.04	0.84	-3.5	0.4	0.14	1.1	0.03	-1.8	12.4	10.2	5	154	H
Greenland	51	-6.8	-1.7	-2.7	-0.30	0.94	-3.4	-0.8	-0.24	-13.0	-0.06	0.0	4.9	2.9	3	123	M
Grindon	52	-14.0	-2.9	-3.4	-0.85	-0.45	-8.4	-0.8	-0.29	-2.3	0.06	0.5	12.6	6.3	2	76	M
Gringegalgonia	53	-4.4	-1.5	-2.2	0.02	1.42	-2.4	-1.0	-0.08	2.8	-0.10	-0.5	7.9	6.7	6	86	H
Grogansworth	54	1.3	-0.8	0.6	0.01	1.35	-2.1	1.7	-0.01	-0.3	0.00	-2.3	5.5	4.5	6	190	H
GSARI base flock	55	-0.4	1.1	-3.4	-0.19	0.83	3.2	0.7	0.03	-0.4	0.09	-2.9	-5.9	-3.1	2	72	M
Gunnister Farm	56	3.7	0.7	-2.6	-0.04	0.14	-4.8	-0.2	0.01	2.7	0.06	-0.9	0.1	-2.8	2	26	M
Haddon Rig	57	-0.8	-0.4	-0.7	-0.09	0.27	-1.3	-0.1	-1.32	-1.3	0.04	-1.0	1.1	0.8	17	921	H
Haseley Poll	58	0.1	1.3	-3.8	-0.04	0.14	-4.8	-0.9	0.02	7.8	0.06	0.9	-3.0	-5.8	2	47	M
Havilah North	59	-4.5	-1.8	-1.4	-0.15	0.74	-1.9	-1.6	-0.16	-4.3	-0.05	0.2	8.9	8.0	2	81	M
Hazeldean	60	0.8	-0.5	-0.4	0.10	1.63	-2.9	0.2	0.08	3.2	0.00	-2.1	3.1	1.5	28	1239	H
High Valley	61	1.8	1.0	-2.4	0.16	-0.84	3.0	-0.1	0.09	2.0	0.20	2.4	-5.0	-2.4	3	111	M
Hillcreston	62	-8.6	-1.9	-0.6	-0.83	-4.72	-1.6	-1.6	-0.06	0.0	0.00	0.1	6.6	6.0	2	50	M
Inglewood Estate	63	-0.2	-0.7	-2.9	-0.10	0.47	-5.6	-0.3	0.06	1.3	-0.01	0.1	5.3	1.6	3	143	M
Jaloran	64	-0.3	0.5	-1.2	0.43	-0.79	0.9	0.0	0.09	0.1	0.09	0.8	-6.8	-5.6	3	64	M
Jilliby	65	-0.6	-0.7	-1.5	0.35	2.38	-6.1	0.6	0.02	-1.6	0.04	-1.4	4.5	0.4	2	109	M
<b>Averages</b>		<b>4.3</b> kg	<b>20.0</b> µm	<b>72.0</b> %	<b>0.53</b> µm	<b>5.03</b> %	<b>51.5</b> kg	<b>19.8</b> µm	<b>2.7</b>	<b>81.1</b> mm	<b>1.2</b>	<b>37.4</b> N/kt	<b>\$ 51.78</b>	<b>\$ 52.62</b>			

Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	(µm)	(%)	(µm/yr)	(%/yr)	(%)	(µm)		(mm)		(N/kt)	(%)	(%)	Team	Record	
Kelton Plain	66	3.5	-0.2	-3.5	-0.01	2.35	-3.3	1.1	-0.04	-1.7	-0.09	-0.2	2.0	0.1	1	45	M
Kerrsville	67	-4.4	-1.8	1.0	0.19	1.26	-5.8	-1.2	-0.07	-2.9	-0.25	6.4	8.5	4.5	3	46	M
Kilfeera Park	68	-1.9	0.0	-2.4	-0.11	-0.94	-1.9	0.1	0.04	-2.2	-0.05	2.0	-4.7	-5.4	5	92	H
Kolindale	69	3.4	-0.2	0.1	0.10	0.27	1.6	0.2	0.00	1.8	0.11	-0.5	-0.5	1.3	8	295	H
Koonwarra	70	-2.6	-0.7	-1.5	-0.31	0.85	-1.0	-0.4	0.02	-2.5	-0.10	-1.4	1.7	1.6	3	94	M
Kurra Wirra	71	-3.5	-1.2	-1.0	-0.29	-0.16	-3.4	-0.6	-0.02	-3.0	-0.13	0.8	5.8	3.8	6	91	H
Kylie	72	4.1	0.9	-1.3	0.26	-2.31	3.7	0.4	0.07	0.0	0.39	2.1	-4.1	-0.9	2	103	M
Ledgeron	73	-20.0	-2.3	-2.5	-0.19	0.65	-8.6	-1.0	-0.11	-14.2	-0.16	-4.1	1.4	-4.5	3	84	M
Lewisdale	74	2.2	1.0	-0.3	-0.04	0.14	4.2	-0.3	0.06	5.7	0.14	1.9	-4.8	-1.4	3	61	M
Linden	75	-7.0	-1.1	-3.8	-0.26	1.11	-5.3	-1.3	0.03	-3.8	-0.18	1.4	2.8	-0.6	1	56	M
Longaroo	76	-3.4	-0.3	-1.8	-0.14	0.58	-3.7	1.4	-0.10	-3.2	-0.14	1.2	-2.1	-4.2	2	68	M
Merinotech	77	-3.8	0.0	-4.4	-0.05	-1.04	1.5	-0.9	0.04	5.8	0.07	0.5	-5.6	-3.9	5	219	H
Merrignee	78	-8.1	-1.3	-0.1	-0.57	1.48	-7.1	-0.9	-0.09	0.0	-0.11	-1.7	7.0	2.1	3	67	M
Merrinjuck	79	-12.2	-1.2	-2.6	-0.26	0.67	-6.5	-0.2	-0.01	-9.6	-0.22	-3.4	0.1	-4.0	5	141	H
Merryanbone	80	-0.8	-0.2	-0.9	0.11	2.38	-2.1	0.6	0.12	-1.4	0.13	-1.9	-1.7	-2.6	2	80	M
Merryville	81	-9.8	-2.2	-1.2	-0.39	0.42	-5.6	-0.7	-0.14	-9.0	-0.13	-1.3	8.3	4.5	17	689	H
Middle View	82	-5.1	-1.2	-2.2	-0.23	0.49	-4.8	-0.9	-0.13	-5.6	-0.10	1.6	3.5	0.5	13	396	H
MMM	83	-5.6	0.0	-0.3	-0.32	-0.82	-1.2	-0.6	0.03	3.9	-0.22	-1.1	-5.7	-5.9	2	66	M
Monte Verde	84	1.2	-0.5	-2.2	0.15	1.77	-3.5	-0.1	0.06	-3.0	0.03	1.7	1.1	-0.9	2	127	M
Mt Buffalo	85	-10.8	-2.0	-3.3	-0.28	-1.30	-6.4	-0.4	-0.09	-11.7	-0.11	-3.5	7.1	2.7	2	63	M
Mungadal	86	1.4	0.7	0.2	0.24	-0.40	3.5	0.4	0.09	3.1	0.28	-1.3	-4.4	-1.3	3	94	M
Murray Downs	87	-2.9	0.8	-3.2	0.35	-0.03	-4.8	-1.9	-0.13	-4.0	0.09	4.7	-5.6	-8.4	2	37	M
<b>Averages</b>		<b>4.3</b> kg	<b>20.0</b> µm	<b>72.0</b> %	<b>0.53</b> µm	<b>5.03</b> %	<b>51.5</b> kg	<b>19.8</b> µm	<b>2.7</b>	<b>81.1</b> mm	<b>1.2</b>	<b>37.4</b> N/kt	<b>\$ 51.78</b>	<b>\$ 52.62</b>			



Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	(µm)	(%)	(µm/yr)	(%/yr)	(%)	(µm)		(mm)		(N/kt)	(%)	(%)	Team	Record	
Myocum	88	-8.1	-1.3	-1.5	-0.30	0.49	-3.8	-1.0	-0.11	-7.8	-0.09	1.8	2.3	0.0	4	157	H
Nareeb Nareeb	89	-0.9	-0.6	-2.4	0.11	1.87	-4.0	1.0	0.04	0.0	0.12	-2.8	4.1	1.7	3	92	H
Nerstane	90	-2.6	-1.0	0.2	-0.23	-2.25	-5.0	-1.5	-0.04	6.7	-0.10	2.9	5.6	2.4	5	187	H
One Oak	91	1.0	0.0	0.7	-0.07	0.36	-0.3	0.4	0.09	2.1	-0.01	-2.7	-1.1	-0.7	7	192	H
One Oak No 2	92	1.0	-0.6	0.2	-0.28	-0.74	0.6	-0.1	-0.06	2.3	-0.08	1.0	2.4	3.5	3	127	M
Ongerup	93	5.6	0.0	1.2	-0.14	-1.98	6.5	-0.8	-0.22	5.4	-0.05	1.0	-2.4	2.8	2	151	M
Orrie Cowie	94	3.8	0.7	0.4	0.13	-0.56	5.2	-0.4	-0.04	8.8	0.03	0.4	-3.2	1.1	2	76	M
Otterbourne	95	-13.2	-0.7	-6.0	-0.03	1.24	-6.5	-0.1	-0.11	-6.8	-0.13	-3.1	-4.0	-8.0	2	56	M
Panorama	96	8.6	0.8	2.3	0.16	0.14	2.3	-0.3	0.01	3.1	-0.01	-1.2	0.2	2.5	3	45	M
Pastora	97	-2.6	-1.1	-1.0	-0.06	0.07	0.5	-0.7	0.05	0.3	-0.03	0.0	3.6	4.6	12	807	H
Plevna	98	-2.6	0.3	-2.2	0.15	0.36	-0.2	-0.1	0.15	0.7	0.02	-0.4	-6.4	-6.0	2	72	M
Pooginook	99	2.6	0.2	0.9	0.00	0.55	-0.7	0.1	0.02	0.8	0.03	-0.1	-2.5	-2.3	13	554	H
Purpareena	100	-0.6	-0.7	-2.3	-0.01	1.37	1.5	0.8	0.02	0.7	0.07	-4.0	2.6	4.3	2	130	M
Quailerup	101	1.8	0.6	-0.5	0.25	-0.09	2.6	-0.5	-0.08	3.0	0.11	2.2	-6.1	-3.8	4	123	M
Quamby Park Poll	102	-7.5	-2.0	0.2	-0.36	-0.16	-3.6	-1.5	-0.08	-8.0	-0.12	0.9	7.0	4.8	2	72	M
Rogara	103	-5.6	-2.2	0.0	0.04	3.94	-3.6	-1.3	-0.06	-3.3	-0.11	0.6	11.1	8.8	2	71	M
Ronern	104	-3.3	-0.5	-4.3	-0.18	-4.17	4.6	-1.4	-0.05	5.0	0.07	-1.3	-2.5	1.4	2	141	M
Roseville Park	105	-2.3	-0.7	-1.7	0.03	0.47	-1.8	0.4	0.04	-2.4	-0.06	0.0	0.8	0.1	9	342	H
Rossmore	106	-7.5	-0.8	-1.6	-0.19	0.77	-1.6	-0.1	0.00	1.4	-0.15	-1.2	-0.5	-1.1	2	45	M
Roxanna Poll	107	-1.7	0.4	1.0	0.14	0.65	-1.3	-0.4	0.32	-0.2	0.00	0.4	-6.1	-6.4	4	166	H
Ruby Hills	108	-11.6	-1.6	-0.3	-0.21	1.10	-5.7	-1.3	-0.05	-4.6	-0.09	0.8	2.9	-0.8	1	43	M
Rutherglen	109	2.5	0.3	0.2	-0.04	-0.22	3.1	-0.5	-0.01	7.3	0.02	1.0	-4.0	-1.2	6	273	M
<b>Averages</b>		<b>4.3</b>	<b>20.0</b>	<b>72.0</b>	<b>0.53</b>	<b>5.03</b>	<b>51.5</b>	<b>19.8</b>	<b>2.7</b>	<b>81.1</b>	<b>1.2</b>	<b>37.4</b>	<b>\$ 51.78</b>	<b>\$ 52.62</b>			
		kg	µm	%	µm	%	kg	µm		mm		N/kt					

Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	(µm)	(%)	(µm/yr)	(%/yr)	(%)	(µm)		(mm)		(N/kt)	(%)	(%)	Team	Record	
Salt Creek	110	-11.8	-1.1	0.8	-0.76	7.64	-5.6	1.2	-0.02	-8.9	-0.02	-2.0	-1.2	-4.7	3	48	M
San Mateo	111	0.4	0.4	-1.6	0.64	3.75	-1.9	0.4	0.02	-4.0	0.09	1.9	-5.5	-6.2	2	66	M
Severn Park	112	-1.7	-0.3	-0.2	0.08	1.51	-1.8	-0.7	0.18	2.3	0.04	0.9	-1.3	-2.0	5	207	H
Snowy Plain	113	-5.9	-1.5	0.5	-0.24	0.23	-3.1	-0.2	0.01	-10.9	-0.06	1.0	3.3	1.6	4	87	M
St Leonards	114	7.0	1.2	0.7	-0.53	-0.37	6.0	0.4	-0.01	2.6	0.09	-4.2	-2.3	2.5	2	68	M
St. Quentin	115	3.8	0.2	0.7	-0.09	-3.65	3.5	0.6	-0.01	6.2	0.09	-0.1	-3.1	0.0	2	118	M
Stellaroy Park	116	-5.3	0.1	-4.2	0.20	0.65	-4.8	-0.3	0.02	0.9	0.08	-0.5	-5.5	-8.2	3	59	M
Strath Haddon	117	4.6	0.0	0.8	-0.13	-1.10	2.2	-0.2	-0.14	4.8	-0.04	-1.4	0.1	2.4	4	235	M
Suttor	118	-16.7	-1.7	-3.3	-0.30	1.17	-8.1	-1.3	0.01	-16.0	-0.16	-0.9	-1.3	-6.6	1	42	M
Tallowong	119	-0.1	-1.9	-0.5	-0.19	-0.53	-3.9	-0.9	-0.15	3.1	-0.10	-0.3	15.8	13.2	4	251	H
The Grange	120	1.3	-0.4	-1.3	-0.37	-1.88	3.3	-0.9	0.07	4.3	0.07	0.7	-0.1	2.9	4	136	M
The Lagoons	121	0.2	-0.4	-0.5	-0.24	0.65	-1.1	-0.1	0.01	0.2	-0.05	-1.0	0.4	0.3	4	252	H
The Mountain Dam	122	-6.0	-1.3	-3.3	-0.28	-1.82	-2.5	-1.1	-0.01	-2.1	-0.15	-0.4	4.1	2.9	6	91	H
The Yanko	123	0.8	-0.6	0.3	-0.06	-0.04	1.1	0.3	0.19	2.0	0.11	-1.6	2.7	4.2	3	103	M
Toland	124	1.3	-0.2	-0.6	-0.13	-0.79	0.9	-0.3	0.00	3.9	-0.05	0.8	-1.7	-0.4	5	92	H
Towalba	125	3.6	1.0	0.9	0.39	1.28	0.6	0.4	0.15	1.3	0.04	-0.8	-2.6	-1.5	4	136	H
Uardry	126	1.8	0.5	0.7	0.21	0.58	-2.4	0.7	0.04	1.6	0.06	-1.2	-3.5	-4.6	4	163	H
Wallaloo Park	127	-2.0	-0.3	0.9	-0.21	0.86	-3.4	0.0	0.07	4.0	0.08	0.4	-0.3	-2.2	4	76	M
Wallandoon East	128	-8.0	-2.3	-1.3	-0.47	-0.16	-3.7	-1.3	0.01	-0.6	-0.11	-1.2	12.1	9.7	2	48	M
Wallinar	129	4.3	0.6	0.6	0.13	-0.09	1.6	-0.2	0.22	7.3	0.13	0.2	-3.9	-2.2	5	109	M
Wanganella	130	5.0	0.4	1.6	0.26	-1.57	0.9	0.8	0.07	0.3	0.02	-1.5	-2.0	-0.7	7	174	H
Wantana	131	0.9	-0.1	-2.0	-0.04	0.75	-2.0	-0.5	0.05	0.3	-0.01	0.0	-1.8	-2.6	4	203	H
<b>Averages</b>		<b>4.3</b>	<b>20.0</b>	<b>72.0</b>	<b>0.53</b>	<b>5.03</b>	<b>51.5</b>	<b>19.8</b>	<b>2.7</b>	<b>81.1</b>	<b>1.2</b>	<b>37.4</b>	<b>\$ 51.78</b>	<b>\$ 52.62</b>			
		kg	µm	%	µm	%	kg	µm		mm		N/kt					

Bloodline	Code	CFW	FD	YLD	FDST	CFWST	WT	FDCV	Style	SL	Col	SS	\$/DSE	\$/head	No. of	No. of	Acc
		(%)	( $\mu\text{m}$ )	(%)	( $\mu\text{m}/\text{yr}$ )	(%/yr)	(%)	( $\mu\text{m}$ )		(mm)		(N/kt)	(%)	(%)	Team	Record	
Wattle Dale	132	-1.9	-2.2	-2.4	-0.73	-0.69	-2.7	-0.3	-0.22	-4.5	0.05	-0.3	14.4	12.8	2	78	M
Westerdale	133	-1.7	-0.1	-2.2	-0.33	2.13	0.2	-0.6	-0.06	1.7	0.01	-0.6	-2.8	-2.1	2	146	M
Weston Park	134	-9.1	-2.1	-3.6	-0.49	0.20	-6.1	-0.4	-0.04	-5.4	-0.11	-2.4	9.6	5.4	3	64	M
Westray	135	1.0	0.2	-1.7	0.21	1.62	-1.1	0.5	0.13	0.1	0.09	-1.8	-2.8	-3.0	7	298	H
Willandra	136	5.3	0.1	1.3	-0.20	0.29	0.8	1.0	0.05	-0.2	-0.01	-2.4	-0.7	0.5	4	126	H
Willemenu	137	2.7	0.2	1.3	0.18	0.66	5.3	-0.5	-0.06	5.2	0.19	-0.1	-4.4	-0.1	2	76	M
Willigulli North Poll	138	-5.3	0.3	-6.3	-0.04	0.14	8.2	-1.6	0.05	4.3	0.06	-1.1	-9.5	-3.5	2	39	M
Woodpark	139	4.2	-0.5	-0.1	-0.51	0.14	2.5	-1.6	-0.01	1.5	-0.01	0.5	2.7	5.2	3	45	M
Woodyarrup	140	2.2	-0.1	-0.7	-0.17	0.41	2.9	0.0	-0.01	2.8	0.07	-0.3	-1.7	1.1	3	94	M
Woolaroo	141	-0.6	-1.2	-0.8	-0.14	0.61	-3.4	0.3	-0.09	-2.8	-0.05	-1.2	8.7	6.6	9	252	H
Woolkabin	142	2.8	-0.1	-0.4	0.61	2.35	2.4	0.0	-0.09	3.9	0.15	-0.2	-1.0	1.4	3	107	M
Yalgoo	143	-11.9	-2.4	-1.2	-0.04	1.71	-5.6	-2.1	-0.05	-3.4	-0.13	0.6	8.5	4.6	5	265	H
Yarrowonga	144	2.7	-0.8	-0.9	0.08	0.78	-2.5	-0.2	-0.02	0.9	-0.07	-1.0	6.3	5.0	8	351	H
Yarrum Valley Poll	145	0.4	0.0	-1.4	-0.09	-1.99	8.4	-2.6	0.19	6.8	-0.16	5.1	-7.0	-0.7	2	155	M
<b>Averages</b>		<b>4.3</b>	<b>20.0</b>	<b>72.0</b>	<b>0.53</b>	<b>5.03</b>	<b>51.5</b>	<b>19.8</b>	<b>2.7</b>	<b>81.1</b>	<b>1.2</b>	<b>37.4</b>	<b>\$ 51.78</b>	<b>\$ 52.62</b>			
		kg	$\mu\text{m}$	%	$\mu\text{m}$	%	kg	$\mu\text{m}$		mm		N/kt					

### Additional traits

Funding from Australian Wool Innovation has been available to wether and ewe trial committees to measure additional traits. Additional traits included staple length (SL) and staple strength (SS) which are reported in this Primefact. Other funded traits were worm egg count, fat and eye muscle depth and for ewe productivity trials, pregnancy scanning. These traits have been reported in the site reports of trials that measured them however not enough sites measured these traits for them to be reported in this current analysis.

### Ewe productivity trials

Ewe productivity trials are predominantly run in Western Australia. They are run under similar guidelines to wether trials, with a focus on reproduction. For more information [http://www.agric.wa.gov.au/PC\\_91878.html?s=1001](http://www.agric.wa.gov.au/PC_91878.html?s=1001)

Figure 2a Bloodline deviations for clean fleece weight (CFW) and fibre diameter (FD) for the 53 high accuracy bloodlines

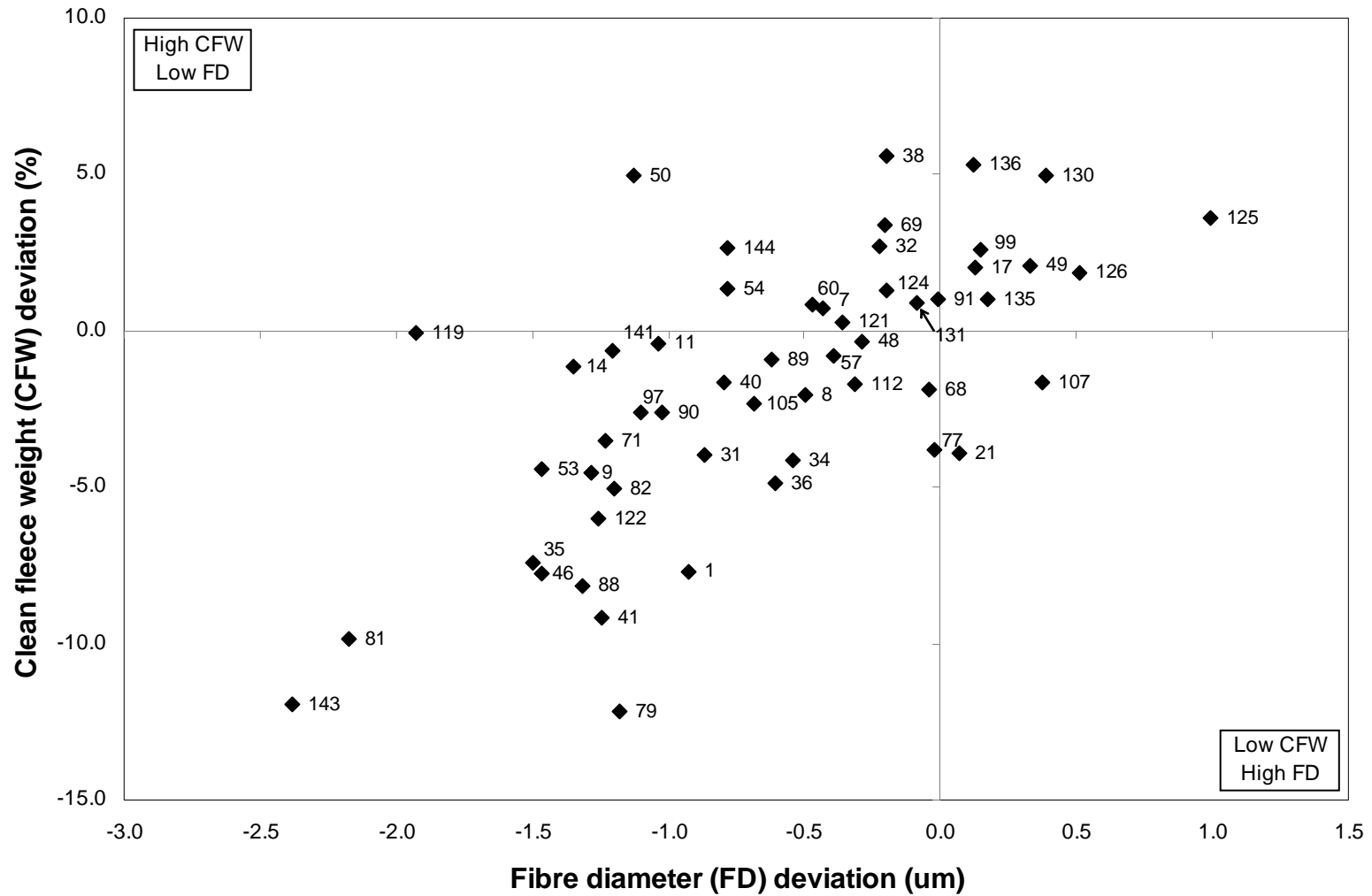


Figure 2b Bloodline deviations for clean fleece weight (CFW) and fibre diameter (FD) for 41 of the 92 medium accuracy bloodlines

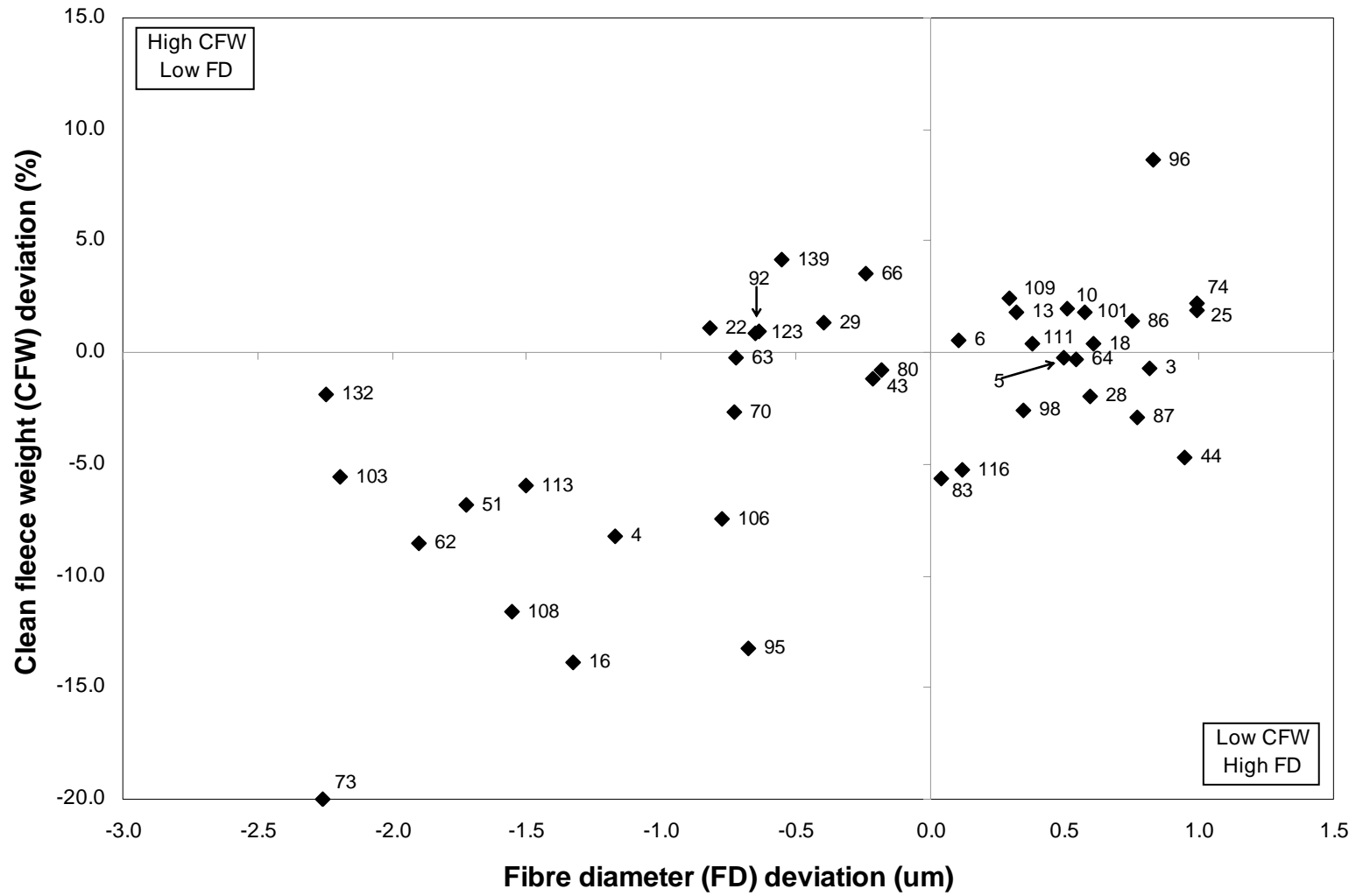


Figure 2c Bloodline deviations for clean fleece weight (CFW) and fibre diameter (FD) for 51 of the 92 medium accuracy bloodlines

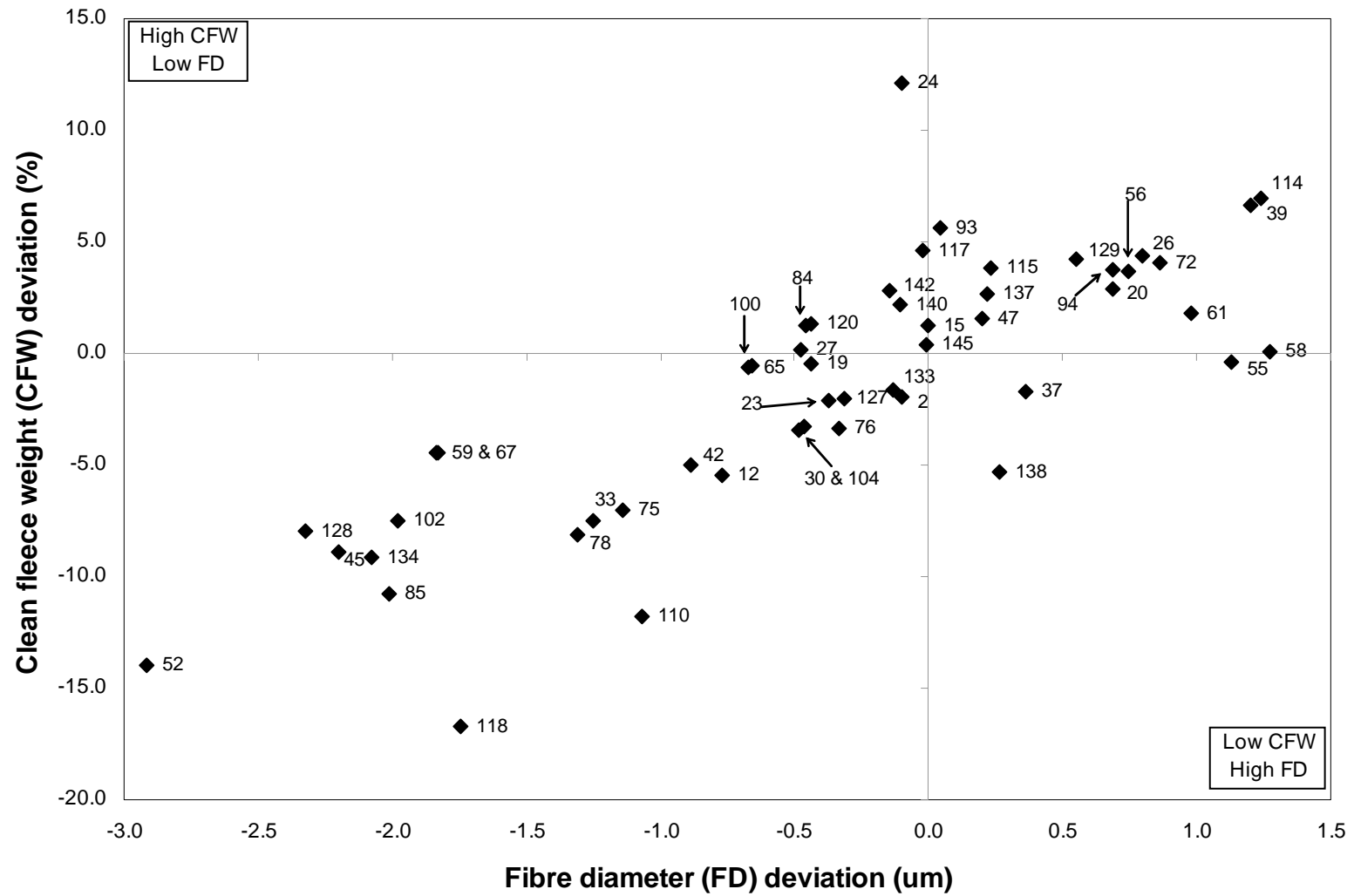


Figure 3a Bloodline deviations for gross income (\$) per dry sheep equivalent (DSE) relative to fibre diameter (FD) for the 53 high accuracy bloodlines

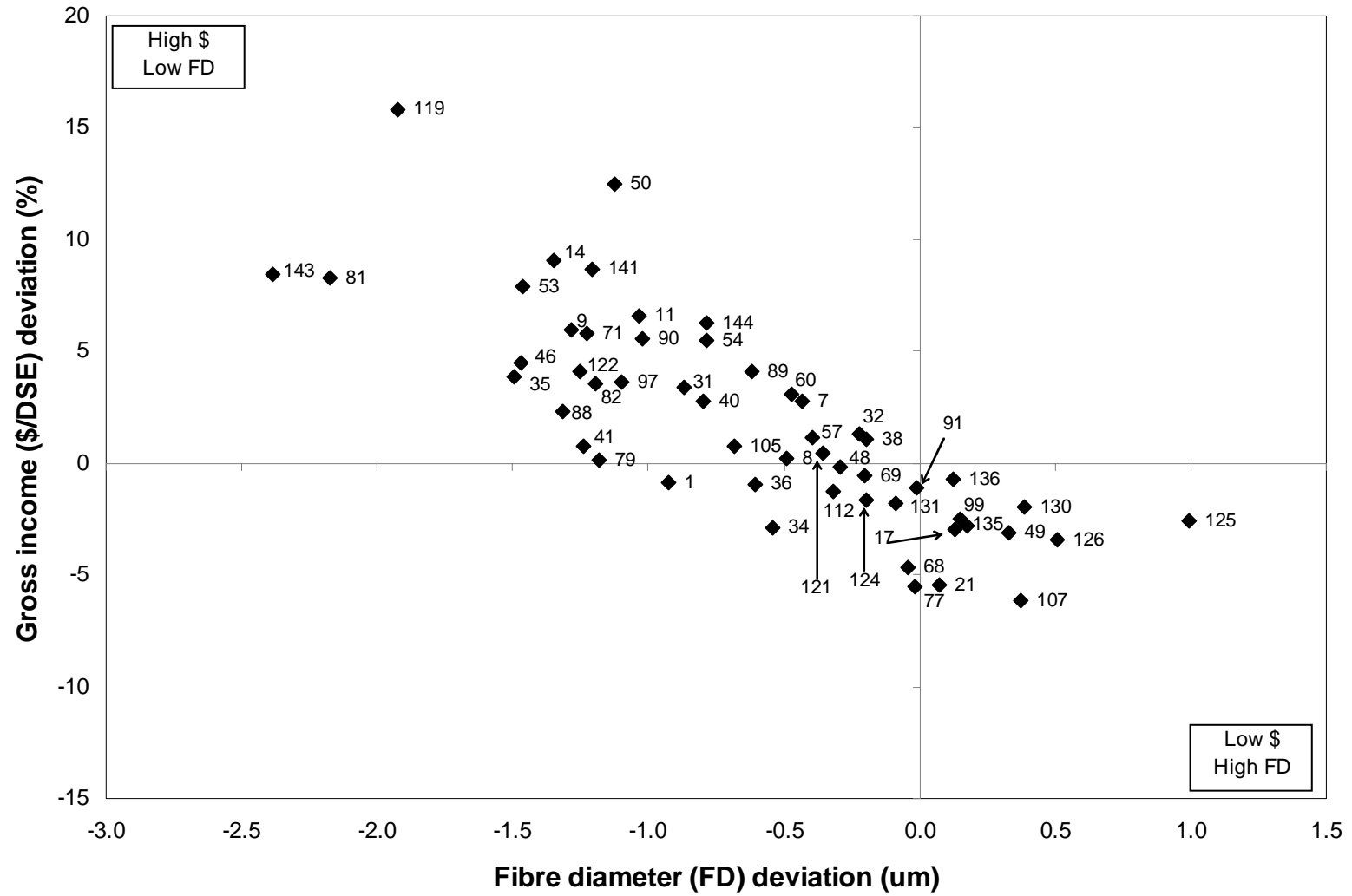


Figure 3b Bloodline deviations for gross income (\$) per dry sheep equivalent (DSE) relative to fibre diameter (FD) for 41 of the 92 medium accuracy bloodlines

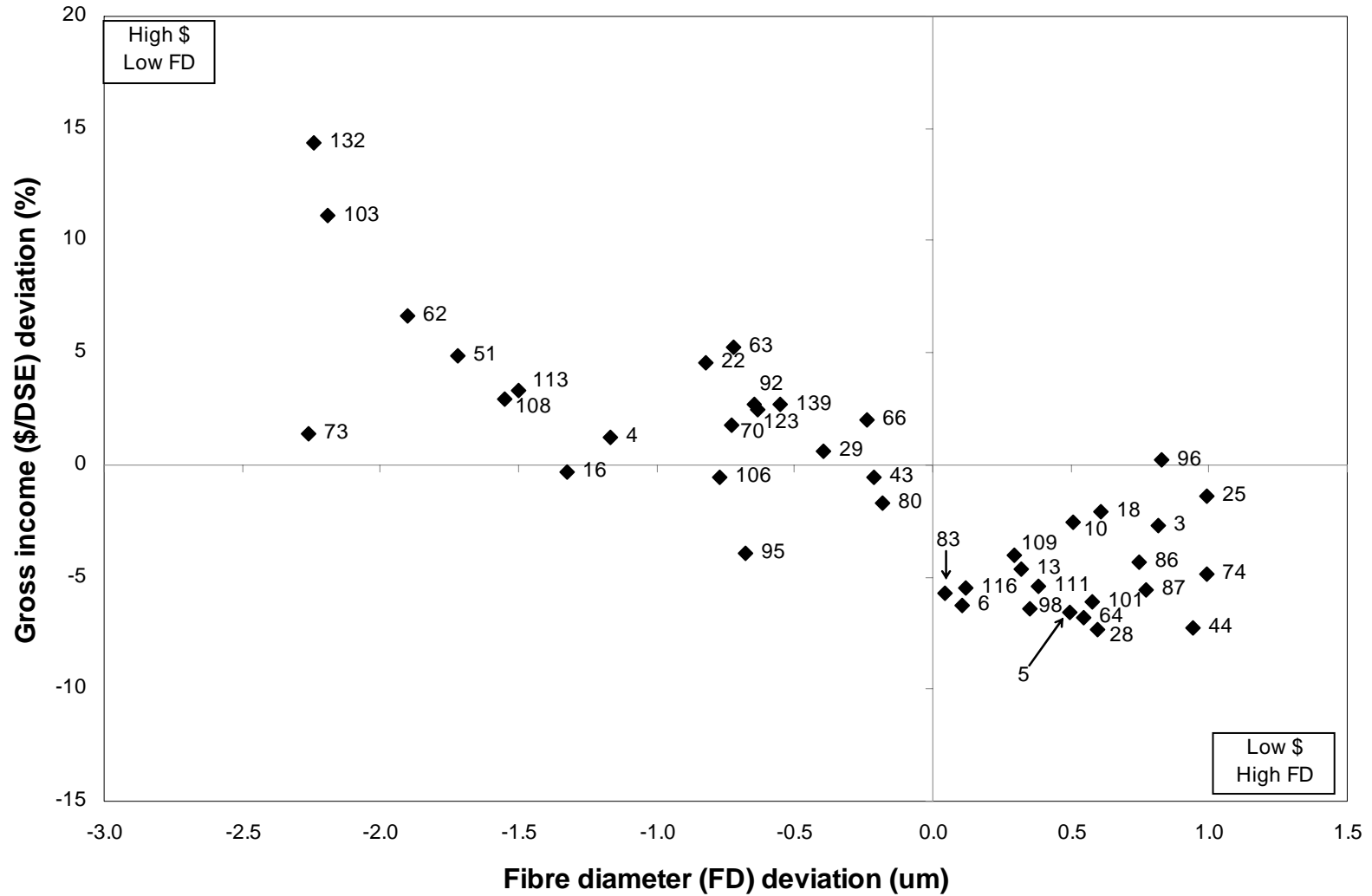
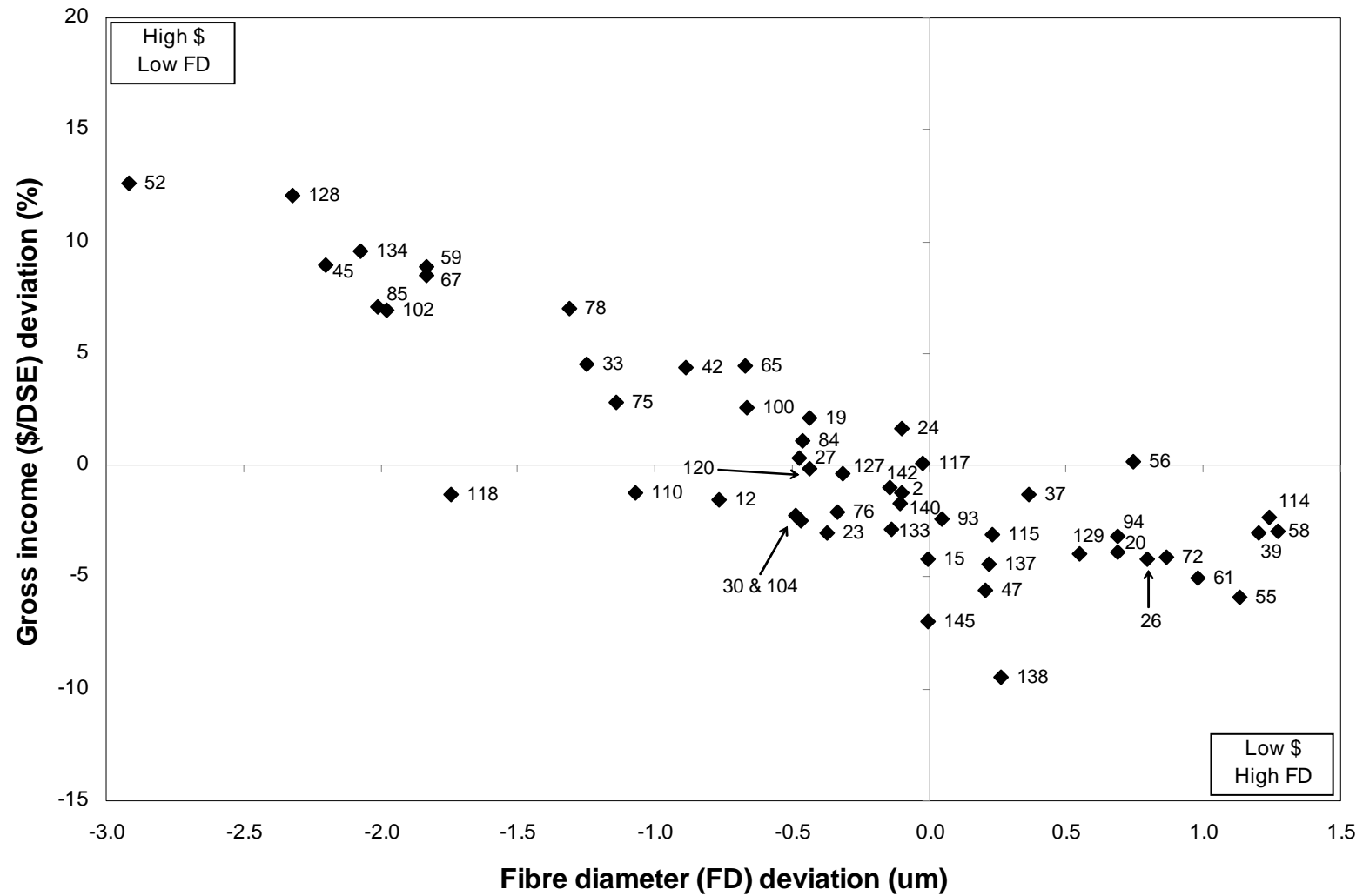




Figure 3c Bloodline deviations for gross income (\$) per dry sheep equivalent (DSE) relative to fibre diameter (FD) for 51 of the 92 medium accuracy bloodlines



## Low accuracy bloodlines

The performance of low accuracy bloodlines are not published in this Primefact due to the low accuracy. A list of the low accuracy bloodlines is reported in Table 3. The performance of each low accuracy bloodline is only made available to the bloodline or the entrant of the team and can be obtained from DII NSW by completing

the “Low accuracy bloodline and team request form” on the webpage: [www.merinobloodlines.com.au](http://www.merinobloodlines.com.au) (for more information page 21). Low accuracy performance is only a guide. More teams need to be entered into wether or ewe trials to improve the accuracy to be reported in future bloodline performance analysis.

Table 3 List of 123 low accuracy Merino bloodlines not reported for performance

Bloodline	Code	Acc	Bloodline	Code	Acc	Bloodline	Code	Acc
AGWEST 97	146	L	Glenray	187	L	Peepingee	228	L
Allenville	147	L	Glenroy	188	L	Pemcaw	229	L
Angenup	148	L	Glentanner	189	L	Pineridge Poll	230	L
Anglesey	149	L	Goolgumbla	190	L	Pomanara	231	L
Arable	150	L	Gotta Rock	191	L	Poplars	232	L
Arena AMS	151	L	Grove House	192	L	Queenlee	233	L
Arena	152	L	GSARI Meat	193	L	Raby	234	L
Arra-Dale	153	L	GSARI SS	194	L	Range View	235	L
Avonsworth	154	L	GSARI SS High	195	L	Redside	236	L
Aylesbury	155	L	Hebron Vale	196	L	Rokeby	237	L
Barramining	156	L	Highlands Poll	197	L	Rolvenden	238	L
Belhus	157	L	Hill Dawn	198	L	Rondalea	239	L
Billa Burra	158	L	Hilltop Park	199	L	Royalla	240	L
Blyth	159	L	Hinesville	200	L	Sandown	241	L
Booabula	160	L	Jib Jib Poll	201	L	Sea Crest	242	L
Boolading	161	L	Kaludah	202	L	Seven Oaks	243	L
Boongara	162	L	Karori	203	L	Shahs	244	L
Boonoke	163	L	Keetlen Valley	204	L	Sharman Farms	245	L
Brockham	164	L	Kiah	205	L	Skyline	246	L
Brookfield	165	L	Kia-Warra	206	L	Spring Valley	247	L
Brooklands	166	L	Kingussie	207	L	Stockton	248	L
Bullamon Plains	167	L	Koepang	208	L	Tara Park	249	L
Camelford	168	L	Kooroocheang	209	L	Tarilta	250	L
Canowie Fields	169	L	Langi Willi	210	L	Tee Lake	251	L
Cara	170	L	Lara Plains	211	L	Tilba Tilba	252	L
Caroonboon	171	L	Lewisidale-	212	L	Toorackie	253	L
Clear View	172	L	Lochness	213	L	Trawalla	254	L
Collinsville	173	L	Merryshiels	214	L	Ulinga	255	L
Conrayn	174	L	Merton Vale	215	L	Umbledah	256	L
Darriwell	175	L	Millstead	216	L	Valewe	257	L
East Strathglen	176	L	Miramoonna	217	L	Walyurin	258	L
Eastville	177	L	Mirani	218	L	Weona	259	L
Edale	178	L	Misty Hills	219	L	West Vale	260	L
Forton	179	L	Mountain Valley	220	L	Williloo	261	L
Geelong Park	180	L	Mulga Springs	221	L	Willurah	262	L
Gingie	181	L	Nalya	222	L	Windorah	263	L
Glenbower	182	L	Nardlah	223	L	Woodpark Poll	264	L
Glenbranter	183	L	Norwood	224	L	Woodside	265	L
Glenerin	184	L	Nowranie	225	L	Wurrook	266	L
Glenleigh	185	L	Oxton Park	226	L	Wyoming	267	L
Glenpine	186	L	Pallinup	227	L	Yarong	268	L

Figure 4 Micron premiums from 2005/06 to 2009/10

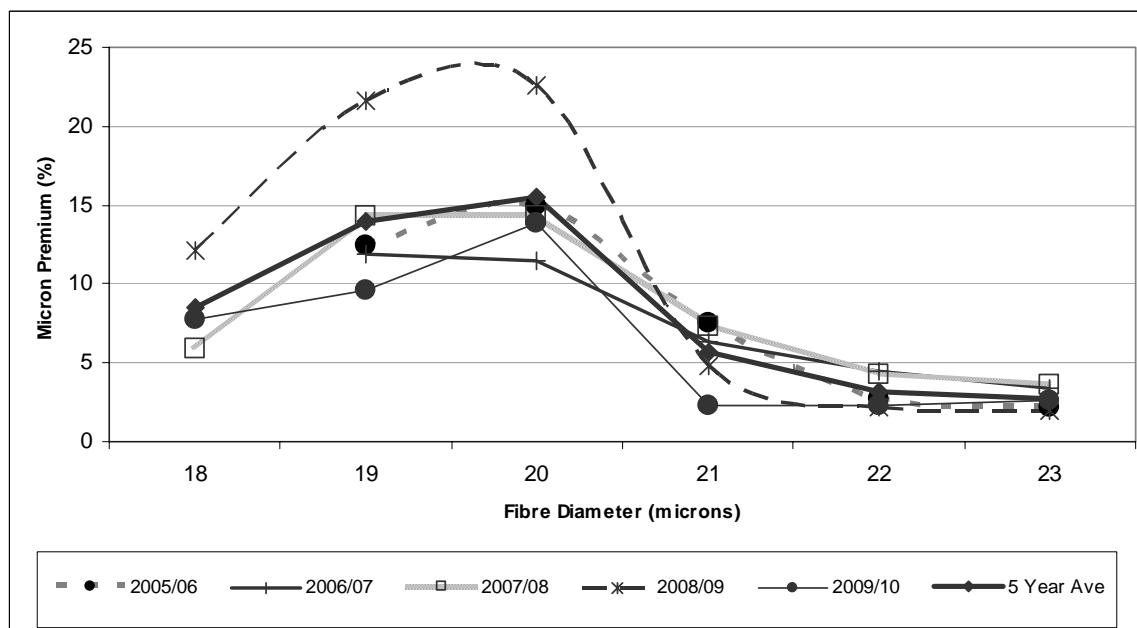


Table 4 Micron premiums for the 2005/06 to 2009/10 selling seasons

Selling season	Micron Premiums (%)					
	18 $\mu$ m	19 $\mu$ m	20 $\mu$ m	21 $\mu$ m	22 $\mu$ m	23 $\mu$ m
2005/06		12.5	15.0	7.5	2.7	2.2
2006/07		11.9	11.5	6.3	4.5	3.4
2007/08	5.9	14.3	14.3	7.3	4.3	3.6
2008/09	12.1	21.6	22.6	4.8	2.2	2.0
2009/10	7.7	9.6	13.9	2.3	2.3	2.6
<b>Average</b>	<b>8.6</b>	<b>14.0</b>	<b>15.5</b>	<b>5.2</b>	<b>3.2</b>	<b>2.8</b>

### Market influence

There remains significant difference in micron premiums (relative value of fibre diameter and fleece weight) between different wool selling seasons. For example, relative to the 5 year average the 2006/07 season had significantly lower micron premiums and the 2008/09 had significantly higher micron premiums. Page 20 has more information on the calculation and use of micron premiums.

Figure 4 and Table 4 show the micron premiums for the last 5 wool selling seasons and the average of these 5 seasons. This range of markets has been presented to assist breeders considering a range of breeding objectives.

There is a major change in the relative economic performance of bloodlines in different market scenarios. It is critical to have a clear understanding of the market scenario that best describes your perception of the future wool market considered most relevant, as well as its influence on your breeding objective, before bloodline selection is undertaken.

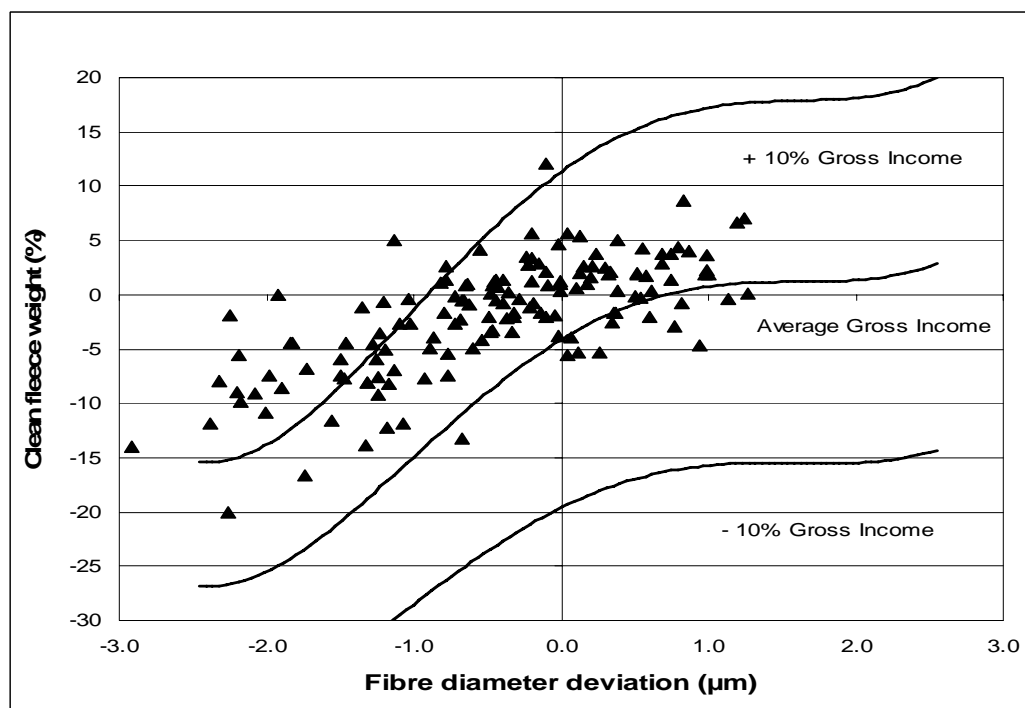
Figure 5 (page 21) shows the relationship between gross income, clean fleece weight and fibre diameter. A contour line on the graph joins points of equal gross income. Bloodlines that are on the same side and equidistant from a contour line have the same gross income. The gross income contour lines shown on Figure 5 represent;

- 10% above average (upper line),
- average (middle line), and
- 10% below average.

The further a bloodline is located above and at right angles to a contour line, the greater the bloodline's gross income.

A bloodline that performs well in all markets is less risky than a bloodline that only performs well under one particular market condition, giving that bloodline a buffer against wool market volatility.

Figure 5 Micron premium contour graph



The gross income contours shown in Figure 5 are based on the average wool market values between 2005/06 and 2009/10.

The highest micron premiums in this market period were for the 19 and 20 micron wools, therefore the contours are steeper in this fibre diameter range.

In general there is less variation around the average income contour than in previous bloodline analyses. This is firstly because the return for carcass value is higher relative to wool. Secondly, income used in this report is based on 2.5 wool clips and one carcass rather than the four to one ratio used previously.

While wool has less influence on bloodline income than in previous bloodline comparisons fibre diameter still has the dominant effect on gross income. All the bloodlines above the +10% contour are finer than average (20 micron and finer).

It should however be noted that there is very significant difference in gross income for the bloodlines at any point along the fibre diameter axis. The difference in income is due largely to difference in performance in clean fleece weight and body weight. The difference in income at any point is greater in the fine wool bloodlines than the medium wool bloodlines, which in turn are greater than the broad wool bloodlines.

### Micron premium

A micron premium is a measure of the relative value of fibre diameter and fleece weight in the wool market.

Calculating micron premium is simple and straightforward. For example the 20 micron premium is

the value of fibre diameter (the difference between the price of 20 and 19 micron wool) divided by the value of fleece weight (the price of 20 micron wool) and expressed as a percentage.

Calculations for general publications such as this Primefact commonly use micron indicator prices. However when developing a particular flock's breeding objectives it is preferable to use the prices for a wool type relevant to that flock. The prices could be spot values or average values calculated over a longer period to account for short term fluctuations or they could be values considered relevant in the future.

The example below sets out how to calculate a micron premium.

### Example: Micron premium for 20 µm wool

**Step 1.** Obtain the values for the two wool micron categories needed for the calculation.

In this case 20 µm wool and wool one micron finer.

For example:

- 20 µm value = 1000 cents per kg
- 19 µm value = 1150 cents per kg

**Step 2.** Calculate the value of fibre diameter – that is the difference between the value of 1 kg of wool at the fibre diameter being considered and the value of a kg of wool one micron finer.

The difference between 20 µm and 19 µm = 150 cents per kg

**Step 3.** Calculate the value of fleece weight – that is the value of 1 kg of wool at the fibre diameter being considered.

The value of 1 kg of 20 µm wool  
= 1000 cents

**Step 4.** Calculate the micron premium – that is the ratio between the value of fibre diameter and the value of fleece weight (the value of fibre diameter divided by the value of fleece weight and expressed as a percentage).

20 micron premium =  $\frac{150}{1000} \times 100 = 15\%$

In this example the micron premium is 15%, which means the producer would be paid 15% more for wool that is one micron finer. To achieve an equivalent increase in income by increasing fleece weight, fleece weight would need to be increased by 15% per head. Figures 2a to 2c indicate the scope for achieving either of these changes.

### Further information

A website ([www.merinobloodlines.com.au](http://www.merinobloodlines.com.au)) has been established which presents all the information contained in the bloodline package, with some additional benefits and information.

Table 1 on the website can be sorted on all traits and categories. This facility will help a flock to more easily identify the bloodlines which match their breeding objective.

To make the best use of this information, producers should consider the details on the inside cover of the Merino Bloodline Performance folder and the information contained in the folder.

Information in the Merino bloodline folder:

- Primefact 930. Merino bloodlines: the comparisons 1999–2010
- Primefact 74. Choosing a bloodline source
- Bloodline contacts
- Application to be added to the mailing list
- Request form for low accuracy bloodline and flock performance results
- Feedback form to suggest changes for future publications

Other associated information sources:

- Merino Bloodline Performance Website  
<http://www.merinobloodlines.com.au>
- *Designing and conducting Merino wether comparisons and on-farm genetic evaluations.*

[http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0005/48686/guidelines\\_comparisons\\_2005.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0005/48686/guidelines_comparisons_2005.pdf)

- Ewe productivity trials, including information on reproduction differences.  
[http://www.agric.wa.gov.au/PC\\_91878.html?s=1001](http://www.agric.wa.gov.au/PC_91878.html?s=1001)
- Merino Superior Sires website.  
<http://www.merinosuperiorsires.com.au>
- Sheep Genetics MERINOSELECT website.  
<http://www.sheepgenetics.org.au/MERINOSELECT/Default.aspx>

If you require further information, contact Sally Martin, Sheep & Wool Officer, I&I NSWph (02) 6380 1705; email [sally.martin@industry.nsw.gov.au](mailto:sally.martin@industry.nsw.gov.au).

Alternatively, you can contact Advanced Breeding Services: ph (02) 6391 3967; fax (02) 6391 3922; email [abs@industry.nsw.gov.au](mailto:abs@industry.nsw.gov.au)

or visit [www.merinobloodlines.com.au](http://www.merinobloodlines.com.au)

### Acknowledgement

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Job number 8157