NSW DPI
primefacts
PROFITABLE & SUSTAINABLE PRIMARY INDUSTRIES www.dpi.nsw.gov.au
SEPTEMBER 2007 PRIMEFACT 700

Merino bloodlines: the comparisons 1996–2006

KD Atkins, SJ Martin, AE Casey, RP Graham, SJ Semple & RV Gordon

Merino Breeding Group, NSW Department of Primary Industries

Introduction

Once more the performance differences between many commonly used Merino bloodlines can be defined, due to the Merino Breeding Group's updated analysis of 63 wether and ewe comparisons conducted in NSW (21), SA (1), WA (32), Tasmania (1), Victoria (6) and Queensland (2) from 1996 to 2006.

The previous analysis was derived from wether comparisons run between 1994 and 2004. The bloodlines represented in the current analysis, compared with the previous analysis, include 74 new and 63 common bloodlines.

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

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

The bloodlines reported in this publication have met specified accuracy standards.

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.*

How to use the information

Table 1 provides the details of bloodlines for a range of traits. See page 3 for an explanation of the table headings.

Figures 2a and 2b show the clean fleece weight and fibre diameter data from Table 1 in graph form, for high and medium accuracy Merino bloodlines respectively. The bloodline code number is in Table 1.

The zero (or average) value for fibre diameter is **20.7µm**, and for clean fleece weight it is **4.5 kg**. The averages for each trait are at the bottom of Table 1.

Figures 3a and 3b show gross margin per dry sheep equivalent (DSE) relative to fibre diameter. This has been calculated using the body weight data (BWT) to generate a DSE rating for each bloodline. The gross margin has been calculated using the five-year average wool price from the years 2002/03 to 2006/07 and all the measured traits for each bloodline.

Figures 5, 6 and 7 show how the bloodlines perform for three different selling seasons.

If you are looking for information about a particular trait, use Table 1. This provides the relative performance for the 12 traits listed.

How can I quickly identify the most profitable bloodlines?

Look at Figures 2a, 2b, 3a and 3b. Because Figures 3a and 3b are reporting per DSE, the impact of body size on stocking rate is removed.

How do the bloodlines perform under different wool markets?

Look at Figures 5, 6 and 7. The lines in each graph are of the same gross margin value. The further a dot is away from a line (to the left), the higher the gross margin is.

Changes and additions

In the past, the data used to generate the Merino bloodline analysis has been derived from wether trials. The 1996–2006 analysis contains both wether trial and ewe productivity trial data.

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 on ewe productivity trials, including information on reproduction differences, go to: www.agric.wa.gov.au/pls/portal30/docs/FOLDER/IKMP/AAP/SL/BGH/ewe_trials.htm

A list of the low accuracy bloodlines has been included. Due to its nature, the low accuracy information remains unpublished. For teams to move into the medium to high accuracy categories, bloodlines will need to enter additional teams in either wether or ewe trials, to improve accuracy. If you are interested in the results for a particular low accuracy bloodline, you will need to contact that bloodline directly.

Additional trait funding was made available for worm egg count (WEC), staple length (SL), staple strength (SS), staple profile (SP), fat & eye muscle depth (meat), wool processing (WP) and, for ewe productivity trials, pregnancy scanning (PS). To date, SL and SS testing has been the most popular, with the other traits difficult to measure during the drought. As yet there is insufficient data to report on traits other than SL and SS. Once enough data has been collected on WEC, meat and PS, these traits will be included in future analyses.

Traits not covered include face cover, fertility, wrinkle/development and flystrike incidence; however, some individual wether trial sites report on fleece rot scores (visit www.merinobloodlines.com.au for more information). These traits are evaluated in Merino sire evaluations, and can be accessed from the Australian Merino Sire Evaluation Association – Merino Superior Sires website: http://mss.anprod.csiro.au

The trends

The performance levels of 222 of the 307 bloodlines involved in wether and ewe comparisons were compared for fleece weight, fibre diameter, body weight and the other wool quality traits – style, length, colour and staple strength. Those bloodlines excluded (85) had incomplete data; for example, no body weight or wool style information.

The 137 bloodlines reported in this publication have a high to medium accuracy. The reporting accuracy is defined by the number of individual records (animals) analysed for a particular bloodline. Information is taken from wether and ewe productivity trial results only; therefore, if a particular bloodline does not have any teams entered in a trial, no information is available for this analysis.

Wool Production

Figure 1 graphs the bloodline distribution of clean fleece weight and fibre diameter. The 137 high and medium accuracy bloodlines are shown in the dark triangles and the 85 low accuracy bloodlines are shown in the light circles. The curved line of the best fit through the bloodlines shows a varying trend for different sectors of the industry.

- For the fine wool bloodlines there is a 4% increase in clean fleece weight for an increase of 1µm in fibre diameter.
- For the medium wool bloodlines there is an increase of 3% in fleece weight per micron.
- For the medium to broad wool bloodlines there is an increase of 2% in fleece weight per micron.

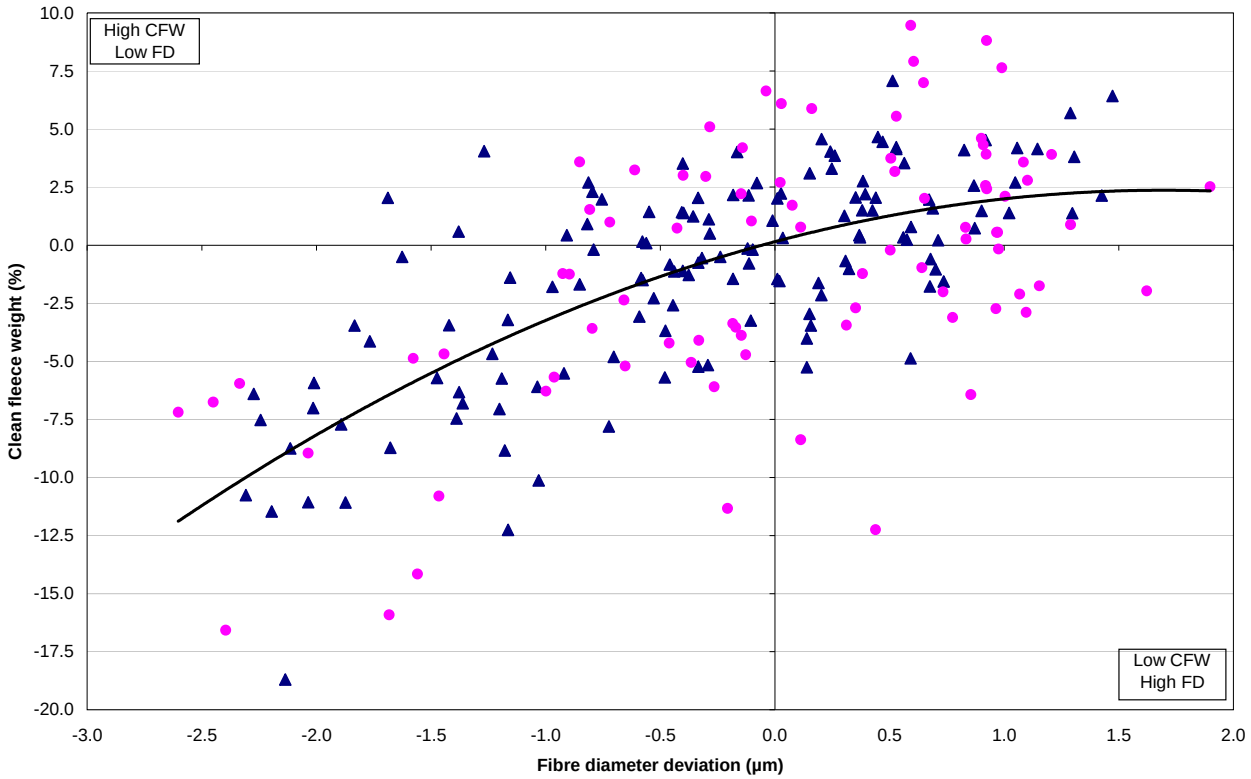
Wool Quality

For the 222 bloodlines analysed, the trends between fibre diameter and the other wool quality traits indicate that bloodlines of a finer diameter generally have superior style, shorter length and better colour. For staple strength, no trend across fibre diameter was apparent. Full results are displayed in Table 1.

Body Weight

Finer bloodlines tended to have lower body weights than their medium wool counterparts. The overall relationship was a 2.5% increase in body weight for a 1µm increase in fibre diameter. There is a 15% difference in body weight between bloodlines. Remember that bodyweight is the major determinant of meat value in Merino sheep.

Figure 1. Bloodline Trend for Clean Fleece Weight relative to Fibre Diameter - 222 Merino Bloodlines



Explanation of Table 1 headings.

Code	This number is used to find the bloodlines on the graphs.
GM/DSE	Bloodline gross margin per dry sheep equivalent, expressed as percentage deviations from the average. The 2002/03 to 2006/07 markets were used to calculate values.
CFW & BWT	Clean fleece weight and body weight expressed as percentage deviations from the averages.
FD & YLD & CV	Fibre diameter, yield and CV are expressed as deviations from the average.
FDST	Fibre diameter stability – annual change in fibre diameter with age, expressed as a deviation in microns per year.
CFWST	Clean fleece weight stability – the annual change in clean fleece weight with age, expressed as a deviation in percent per year. A positive deviation indicates that the bloodline will become higher in clean fleece weight in older animals.
Style	Spinners, best, good, average, and inferior grade (coded 1 to 5 respectively).
Staple length (SL)	Average staple length, measured in mm
Colour (Col)	Fleece colour – no colour, light unscourable and medium unscourable (coded 1 to 3 respectively).
Staple strength (SS)	Average staple strength
No. of teams	The number of wether or ewe teams representing that bloodline in the analysis.
Acc	Accuracy: H = High; M = Medium
Average	Overall mean for that trait, expressed in the units displayed beneath the average.

Table 1. Estimated bloodline effects for production traits (deviation from average), components of wool type and gross margin performance for the 137 high–medium accuracy.

Bloodline	Code	GM/ DSE	CFW	FD	YLD	FDST	CFWST	BWT	CV	Style	SL	Col	SS	No. of	Acc
		%	%	µm	%	µm/yr	%/yr	%	µm		mm		N/Ktex	Teams	
A.M.S	1	-7.8	-7.8	-0.7	-4.1	-0.08	-0.77	2.3	-1.8	2.61	89	1.44	35	8	H
Akeringa	2	0.7	0.7	0.9	-1.6	0.21	-0.30	-3.5	1.6	2.61	91	1.37	33	3	M
Alfoxton	3	5.9	-7.1	-1.2	-1.9	-0.26	-0.47	-4.1		2.67	84	1.11	34	2	M
Allendale	4	-5.1	0.3	0.6	0.3	0.16	-0.73	2.0	-0.1	2.64	90	1.33	35	2	M
Angenup	5	-2.4	-2.1	0.2	-2.3	0.57	-1.53	-1.1	0.4	2.77	92	1.45	33	2	M
Ashgrove	6	-8.9	0.3	0.4	-1.6	0.12	-1.28	6.3	0.8	2.70	90	1.47	35	3	M
Avenel	7	2.9	1.2	-0.4	-0.6	0.07	0.00	-0.6	1.2	2.65	92	1.25	31	6	H
Avonside	8	3.5	-1.3	-0.4	0.7	0.02	1.34	-4.4	0.1	2.65	87	1.23	36	4	H
Barrackville	9	10.9	-1.4	-1.2	-0.7	-0.41	-2.38	-3.6	-0.7	2.53	86	1.15	34	4	M
Belbourie	10	4.2	3.5	0.6	0.6	0.26	0.74	-3.2	1.3	2.61	90	1.37	33	3	M
Billandri	11	4.9	-0.2	-0.8	-0.2	-0.05	0.04	-0.7	0.5	2.64	89	1.37	33	19	H
Blackford	12	-3.5	-4.8	-0.7	-2.1	-0.45	-2.38	0.2	-2.2	2.57	92	1.30	37	3	M
Blenwood Peak	13	-2.3	2.8	0.4	-1.3	-0.02	-0.83	1.8	0.3	2.79	90	1.57	34	2	M
Bogo	14	15.6	0.6	-1.4	-0.7	-0.11	0.36	-3.4	-0.3	2.53	89	1.22	35	5	H
Boolading	15	-8.5	-1.0	0.7	-2.7	0.08	-0.51	3.5	-0.9	2.77	94	1.25	36	2	M
Brookdale	16	-5.7	0.3	0.0	-1.0	0.24	-1.96	4.6	-0.2	2.66	90	1.33	34	3	M
Bullamalita	17	0.9	-12.3	-1.2	-0.3	-0.40	0.50	-5.7	-0.9	2.63	85	1.00	37	2	M
Bungoona	18	0.5	7.1	0.5	6.4	0.22	0.11	2.9	-1.6	2.47	93	1.13	36	2	M
Bungulla	19	1.5	0.8	0.6	-0.1	0.11	0.78	-3.0	-1.6	2.48	95	1.20	34	2	M
Cardo	20	-6.7	1.5	0.9	-0.2	0.63	0.61	2.8	0.6	2.85	85	1.45	34	2	M
Cassilis Park	21	-2.9	-3.0	0.2	1.1	-0.03	1.20	-1.5	-0.5	2.63	88	1.38	35	5	H
Castellon	22	5.5	0.9	-0.8	0.6	-0.14	1.56	-0.2	0.1	2.58	92	1.15	34	2	M
Charinga	23	1.2	4.0	-0.2	3.3	0.03	1.76	1.7	-1.6	2.61	91	1.33	36	3	M
Identity Withheld	24	-8.0	2.6	0.9	-0.2	0.14	-1.90	5.2	-0.2	2.66	87	1.17	37	2	M
Collinsville	25	0.4	4.2	0.5	0.1	0.59	1.85	1.2	0.3	2.64	109	1.37	27	2	M
Colvin	26	-2.2	-0.6	-0.3	-1.6	-0.16	0.16	1.2	-0.4	2.48	93	1.31	35	5	M
Coonong	27	-8.6	-1.8	0.7	-0.4	-0.01	1.09	3.6	-0.8	2.58	92	1.27	34	2	M
Cora Lynn	28	2.2	2.0	-0.3	-0.8	-0.08	0.02	-1.4	0.7	2.73	88	1.55	35	2	M
Coromandel Poll	29	-5.3	-5.7	-0.5	-1.5	0.01	-0.15	-0.1	-0.8	2.65	89	1.26	37	3	M
Corroboree	30	2.9	-2.6	-0.4	-0.9	-0.02	-2.31	-4.3	-0.9	2.59	94	1.16	35	4	H
Cottage Park	31	2.9	2.2	0.0	-0.5	0.05	1.08	-1.3	0.2	2.62	88	1.27	33	7	H
Cranmore Park	32	-8.7	-5.2	-0.3	-2.8	-0.11	-0.80	2.6	-0.8	2.57	90	1.28	36	12	H
Cressbrook	33	5.6	-6.3	-1.4	2.0	-0.30	0.34	-2.2	-1.9	2.48	86	1.11	37	10	H
Identity Withheld	35	0.0	-3.7	-0.5	-1.4	-0.10	-0.39	-2.5	-1.0	2.53	85	1.00	36	3	H
Dongiemon	36	-0.7	-1.6	0.7	0.8	0.65	0.29	-2.0	1.9	2.47	90	1.31	24	3	M
East Loddon	37	1.1	2.2	-0.2	1.6	0.06	1.10	-0.1	0.1	2.64	88	1.28	34	5	H
Eastville Park	38	-5.0	5.7	1.3	0.1	1.21	4.58	3.4	1.2	2.66	92	1.43	37	2	M
Edale	39	10.3	-11.1	-2.0	-1.5	-0.28	-0.13	-5.3	-1.2	2.30	84	1.25	35	2	M
Egelabra	40	4.8	-1.7	-0.9	-0.5	-0.15	-0.44	-1.8	-0.5	2.59	89	1.07	34	9	H
Eilan Donan	41	0.0	-8.8	-1.2	-1.3	-0.44	-0.72	-1.1	-1.6	2.54	83	1.18	35	5	H
Eural	42	1.0	-0.8	-0.1	-1.1	0.16	-1.35	-1.7	-0.3	2.75	94	1.37	34	2	M
Gilgunyah	43	13.9	-7.0	-2.0	2.7	-0.65	-1.70	-4.5	-2.1	2.35	83	1.07	36	2	M
Glanna	44	8.3	-6.8	-1.4	0.2	-0.33	-0.03	-5.6	-1.3	2.46	83	1.05	37	5	H
Glen Byrne	45	-4.3	1.5	0.4	-0.5	0.03	0.47	1.7	-0.3	2.61	85	1.53	38	2	M
Glen Donald	46	3.1	0.5	-0.3	-2.3	0.09	1.39	-2.3	0.7	2.64	87	1.35	33	8	H

CONTINUED NEXT PAGE

Table 1. Continued from previous page: Estimated bloodline effects for production traits.

Bloodline	Code	GM/ DSE	CFW	FD	YLD	FDST	CFWST	BWT	CV	Style	SL	Col	SS	No. of	Acc
		%	%	µm	%	µm/yr	%/yr	%	µm		mm		N/Ktex	Teams	
Goolgumbla	47	-6.8	0.2	0.7	-0.7	0.27	-0.73	3.3	0.0	2.71	93	1.45	34	2	M
Gowandale	48	2.3	4.7	0.4	3.1	0.26	1.16	-0.8	0.0	2.56	91	1.33	35	6	M
Greendale	49	18.1	4.0	-1.3	-0.6	-0.14	0.94	-3.7	0.6	2.62	90	1.39	33	3	M
Greenland	50	10.9	-5.9	-2.0	-1.8	-0.35	1.40	-2.9	-1.7	2.51	74	1.15	34	2	M
Grindon	51	11.3	-11.5	-2.2	-3.9	-0.51	-1.50	-5.2	-1.3	2.20	88	1.29	37	3	M
Gringegalgona	52	9.5	-3.4	-1.4	-1.6	-0.30	1.02	-2.1	-1.2	2.57	92	1.17	35	6	H
Grogansworth	53	8.8	2.7	-0.8	1.4	0.00	1.38	-1.3	1.6	2.52	87	1.06	34	4	H
Identity Withheld	54	0.8	-0.8	-0.5	-0.4	-0.11	0.21	-1.0	-0.3	2.68	88	1.36	34	14	H
Hazeldean	55	5.4	1.4	-0.4	0.1	0.02	0.91	-2.6	0.2	2.65	91	1.30	33	27	H
High Valley	56	-9.5	1.4	1.3	-2.1	0.33	-0.44	4.1	0.7	2.70	92	1.47	37	4	M
Inglewood Estate	57	9.1	0.4	-0.9	-2.7	-0.25	0.67	-3.2	-0.3	2.62	90	1.23	35	6	M
Jaloran	58	-7.5	-0.6	0.7	-0.9	0.53	0.16	2.9	0.4	2.71	89	1.36	36	3	M
Jilliby	59	9.8	0.2	-0.6	-0.9	0.27	2.00	-5.7	0.5	2.61	88	1.30	34	2	M
Kerrsville	60	14.1	-4.1	-1.8	1.4	-0.24	0.65	-5.7	-1.3	2.52	86	1.02	40	3	M
Kia-Warra	61	-3.7	3.8	1.3	1.1	0.06	2.73	1.4	-0.7	2.58	94	1.24	34	2	M
Kilfeera Park	62	-0.8	-1.5	0.0	-1.9	0.01	-0.23	-1.8	0.0	2.62	87	1.23	37	5	H
Kolindale	63	-0.7	3.1	0.2	0.1	0.24	0.33	1.6	0.4	2.62	90	1.40	35	8	H
Koonwarra	64	1.0	-1.5	-0.6	-0.5	-0.32	0.63	-0.3	-0.7	2.62	89	1.14	34	3	M
Kurra Wirra	65	7.3	-3.2	-1.2	-0.4	-0.39	0.06	-3.4	-0.8	2.56	86	1.15	37	6	H
Kylie	66	-7.4	4.1	1.1	-1.3	0.41	-1.61	4.6	0.8	2.68	90	1.66	36	2	M
Lansdowne	67	-3.3	-2.3	-0.5	-2.2	-0.24	0.68	0.6	0.1	2.64	85	1.64	35	3	M
Ledgerton	68	6.5	-18.7	-2.1	-2.4	-0.36	-0.71	-6.8	-1.2	2.47	85	1.10	30	2	M
Lewisdale	69	-7.7	2.1	1.4	0.0	0.57	1.19	2.8	-0.1	2.70	93	1.41	36	4	M
Linden	70	5.1	-6.1	-1.0	-3.1	-0.32	0.48	-4.8	-1.4	2.63	86	1.08	36	1	M
Longaroo	71	0.0	-1.4	-0.2	-1.1	-0.13	0.29	-2.6	1.4	2.50	86	1.12	36	2	M
Merinotech	72	-7.1	-4.0	0.1	-4.1	0.25	-0.55	1.5	-0.8	2.68	93	1.34	35	6	H
Merrinjuck	73	4.8	-10.1	-1.0	-1.9	-0.26	0.04	-5.7	-0.1	2.56	83	1.00	30	5	H
Merryanbone	74	1.5	-0.1	-0.1	-0.3	0.07	1.75	-1.7	0.4	2.73	88	1.39	33	2	M
Merryville	75	13.7	-8.7	-2.1	-0.7	-0.51	0.02	-4.8	-0.6	2.46	82	1.10	34	11	H
Middle View	76	10.2	-4.7	-1.2	-1.3	-0.36	0.48	-6.2	-1.2	2.53	84	1.17	37	9	H
Mirani	77	20.8	-3.5	-1.8	2.3	-1.21	-1.63	-5.3	-2.1	2.54	93	1.25	30	2	M
Misty Hills	78	9.1	-10.8	-2.3	-1.4	-0.88	1.26	-2.3	-1.3	2.03	85	1.27	37	1	M
MMM	79	-5.3	-5.3	0.1	0.1	-0.24	-0.83	-0.7	-0.9	2.61	94	1.16	34	2	M
Monte Verde	80	4.4	1.4	-0.4	-1.4	0.27	-0.78	-3.2	0.0	2.59	86	1.30	36	3	M
Mungadal	81	-6.2	1.6	0.7	0.6	0.24	-1.26	4.0	0.3	2.64	92	1.38	34	3	M
Myocum	82	6.9	-7.5	-1.4	-0.1	-0.44	0.84	-3.8	-1.4	2.63	83	1.18	34	3	M
Nareeb Nareeb	83	6.3	0.1	-0.6	-1.8	-0.01	1.54	-3.8	0.9	2.62	89	1.41	33	3	H
Nerstane	84	11.0	2.3	-0.8	1.6	-0.26	-1.03	-4.5	-1.6	2.55	95	1.14	37	3	M
One Oak	85	1.7	2.1	-0.1	1.1	-0.05	-0.74	0.4	0.0	2.60	91	1.28	33	6	H
One Oak No 2	86	0.2	1.1	0.0	0.4	-0.20	-0.03	0.3	-0.3	2.51	92	1.15	35	4	M
Ongerup	87	-3.3	4.6	0.2	0.4	0.01	-0.63	5.4	-0.5	2.45	94	1.27	37	2	M
Orrie Cowie	88	-6.4	4.2	1.1	-0.4	0.11	-0.87	4.8	-0.1	2.62	96	1.32	35	4	M
Panorama	89	-2.5	-1.0	0.3	1.7	0.15	-0.87	-0.2	-0.4	2.57	92	1.29	34	7	M
Pastora	90	2.4	-1.8	-1.0	-0.6	-0.17	0.10	1.2	-0.9	2.62	90	1.27	35	8	H
Pemcaw	91	2.6	-1.1	-0.4	0.3	-0.03	0.56	-2.6	-0.3	2.86	89	1.22	33	3	M
Plevna	92	-3.3	0.4	0.4	-1.1	0.12	-0.28	1.0	-0.3	2.76	90	1.29	35	3	M

CONTINUED NEXT PAGE

Table 1.Continued from previous page: Estimated bloodline effects for production traits.

Bloodline	Code	GM/ DSE	CFW	FD	YLD	FDST	CFWST	BWT	CV	Style	SL	Col	SS	No. of	Acc
		%	%	µm	%	µm/yr	%/yr	%	µm		mm		N/Ktex	Teams	
Pooginook	93	1.4	3.3	0.2	1.5	0.08	0.69	-0.4	-0.2	2.59	90	1.29	35	17	H
Purpareena	94	0.9	-1.4	-0.6	-2.1	-0.24	-2.10	1.0	0.9	2.65	89	1.36	30	2	M
Quailerup	95	-7.8	2.7	1.0	-0.7	0.34	0.53	4.4	-0.1	2.54	91	1.38	37	6	H
Quamby Park Poll	96	10.3	-7.7	-1.9	1.0	-0.49	-1.85	-3.2	-1.7	2.47	82	1.12	35	2	M
Range View	97	-1.8	-0.7	0.3	-0.8	-0.15	1.95	-1.1	0.7	2.70	88	1.29	36	2	M
Ronern	98	-8.6	-3.2	-0.1	-4.4	-0.06	-3.46	5.2	-1.0	2.56	94	1.35	35	2	M
Roseville Park	99	-0.1	-1.1	-0.4	-0.6	-0.04	0.12	-0.5	0.0	2.65	89	1.19	35	8	H
Roxanna	100	-2.7	-1.6	0.2	0.8	0.07	0.54	-0.6	-0.8	2.75	89	1.24	35	2	M
Rutherglen	101	-4.1	2.0	0.4	-0.2	0.07	1.28	2.7	-0.1	2.68	94	1.32	36	6	H
Salt Creek	102	9.4	-8.7	-1.7	0.9	-0.72	-4.62	-4.6	0.4	2.54	85	1.27	35	3	M
San Mateo	103	-2.9	2.0	0.7	-1.8	0.50	2.26	0.0	0.5	2.59	84	1.36	37	3	M
Severn Park	104	2.5	-0.8	-0.3	0.4	-0.01	1.63	-3.4	-0.4	2.70	93	1.28	35	4	H
Shahs	105	-6.8	1.4	1.0	2.0	0.47	-0.06	2.6		2.74	92	1.29	37	2	M
Snowy Plain	106	6.0	-5.7	-1.5	1.1	-0.38	0.44	-3.2	-0.4	2.58	76	1.24	37	4	M
St Leonards	107	-6.1	6.4	1.5	0.7	-0.03	0.00	5.7	0.6	2.62	90	1.38	31	2	M
St. Quentin	108	-4.3	4.4	0.5	0.7	-0.14	-0.56	5.2	0.9	2.65	94	1.38	35	2	M
Strath Haddon	109	0.5	4.0	0.2	0.1	0.09	0.09	1.5	0.3	2.55	93	1.26	34	4	M
Tallawong	110	21.9	2.0	-1.7	1.0	-0.29	-0.79	-3.6	-0.7	2.42	93	1.14	34	2	M
Identity Withheld	111	0.7	-3.1	-0.6	-2.1	-0.43	0.25	-2.9	-2.0	2.60	82	1.55	35	2	M
Terrick Terrick Poll	112	-2.7	-5.2	-0.3	0.0	0.16	-1.12	-2.1	0.2	2.64	87	1.48	32	2	M
The Grange	113	-3.6	-0.2	-0.1	-2.9	-0.20	-1.46	2.6	-0.5	2.70	91	1.33	36	4	M
Identity Withheld	114	1.5	1.1	-0.3	0.1	-0.16	0.63	-0.7	-0.1	2.61	89	1.22	34	4	H
The Mountain Dam	115	5.4	-5.7	-1.2	-2.8	-0.41	-1.73	-2.4	-1.3	2.57	87	1.13	35	6	H
The Yanko	116	0.7	1.4	-0.5	0.9	-0.08	-0.13	1.5	0.1	2.77	91	1.50	33	3	M
Towalba	117	-1.6	4.5	0.9	1.6	0.37	1.23	1.2	0.0	2.78	92	1.31	34	4	M
Uardry	118	-0.4	0.2	0.6	0.7	0.22	0.48	-2.2	0.5	2.64	92	1.38	34	10	H
Umbledah	119	18.1	-6.4	-2.3	-2.7	-0.52	-0.35	-4.7	-0.4	2.26	90	1.29	36	2	M
Wallaloo Park	120	1.5	-0.5	-0.2	1.7	-0.01	0.81	-3.3	-0.2	2.64	92	1.38	36	4	M
Wallandoon East	121	14.3	-7.5	-2.2	-0.9	-0.64	-0.68	-3.4	-1.4	2.60	89	1.16	34	2	M
Wallinar	122	-3.3	4.1	0.8	1.0	0.39	0.76	2.5	0.1	2.81	93	1.39	36	6	H
Wanganella	123	-1.1	2.1	0.4	1.4	0.28	0.37	0.7	0.8	2.64	90	1.30	34	8	H
Wantana	124	4.7	2.7	-0.1	-1.2	-0.01	1.47	-2.1	-0.7	2.64	91	1.22	35	3	M
Wattle Dale	125	14.1	-0.5	-1.6	-1.4	-0.59	-0.64	-1.8	-0.4	2.38	84	1.32	35	4	H
Westerdale	126	-3.7	-3.5	0.2	-2.6	0.19	1.72	-0.7	-0.4	2.60	90	1.31	33	2	M
Westray	127	0.0	1.3	0.3	-1.5	0.19	1.30	-0.7	0.5	2.75	89	1.37	33	7	H
Willandra	128	1.1	3.9	0.3	0.8	-0.11	0.62	0.8	0.8	2.62	89	1.27	33	7	H
Identity Withheld	129	-5.8	1.5	0.4	0.8	0.21	0.73	4.4	-0.2	2.60	93	1.47	35	2	M
Identity Withheld	130	-15.1	-4.9	0.6	-5.7	0.51	-5.59	8.3	-1.4	2.67	92	1.33	34	2	M
Willurah	131	-2.3	4.1	0.5	2.2	0.06	0.55	2.9	0.4	2.70	91	1.32	35	4	M
Woodpark	132	-2.1	-5.5	-0.9	-0.3	-0.35	-3.02	1.0	-1.5	2.55	90	1.29	36	3	M
Woodyarrup	133	-4.3	2.2	0.4	-0.6	-0.07	-0.37	3.5	0.2	2.62	91	1.35	35	3	M
Woolaroo	134	6.0	2.0	-0.8	1.3	-0.18	-0.08	-1.4	-0.2	2.58	90	1.23	36	5	H
Woolkabin	135	-1.8	2.0	0.0	-0.6	0.55	1.62	2.7	0.1	2.59	92	1.40	34	3	M
Yalgoo	136	10.0	-11.1	-1.9	-0.2	-0.24	1.60	-5.3	-2.1	2.51	86	1.11	35	5	H
Yarrawonga	137	7.5	3.5	-0.4	0.2	0.11	1.07	-2.1	-0.6	2.62	93	1.21	32	6	H
Yarrum Valley Poll	138	-10.3	-1.5	0.0	-1.9	-0.14	-3.12	7.3	-2.2	2.85	93	1.16	40	2	M
Averages		$ 32.01	4.5	20.7	70.2			53.1	19.8	2.61	89.5	1.28	35		

Table 2. List of low accuracy Merino bloodlines

Bloodline	Code	Acc
Anglesey	139	L
Arena AMS	140	L
Arena Ramboullet	141	L
Auburn Valley	142	L
Avonsworth	143	L
Aylesbury	144	L
Barraminning	145	L
Belhus	146	L
Blyth	147	L
Booabula	148	L
Boongara	149	L
Boonoke	150	L
Canowie Fields	151	L
Cara	152	L
Caroonboon	153	L
Centre Plus	154	L
Coreena Poll	155	L
Darriwell	156	L
East Strathglen	157	L
Eastville	158	L
Ellerina	159	L
Ellirina	160	L
Geelong Park	161	L
Glenbower	162	L
Glenerin	163	L
Glenleigh	164	L
Glenray	165	L
Glenroy	166	L
Glentanner	167	L
Gotta Rock	168	L
Havilah North	169	L
Hebron Vale	170	L
Highlands Poll	171	L
Hill Dawn	172	L
Hilltop Park	173	L
Hinesville	174	L
Jib Jib Poll	175	L
Kaludah	176	L
Kardella	177	L
Karori	178	L
Kelton Plain	179	L
Kiah	180	L
Kingussie	181	L
Koepang	182	L
Lara Plains	183	L
Lochness	184	L
Merryshiels	185	L
Millsteed	186	L
Miramoona	187	L
Mulga Springs Poll	188	L
Nalya	189	L
Nardlah	190	L
Nowranie	191	L
Otterbourne	192	L
Oxton Park	193	L
Peepingee	194	L
Pineridge Poll	195	L
Pomanara	196	L
Portland Downs Merino	197	L
Queenlee	198	L
Raby	199	L
Rolvenden	200	L
Rondalea	201	L
Ruby Hills	202	L
Sandown	203	L
Sea Crest	204	L
Seven Oaks	205	L
Sharman Farms	206	L
Spring Valley	207	L
Suttor	208	L
Tarilta	209	L
Terrick Terrick	210	L
Tilba Tilba	211	L
Toorackie	212	L
Ulinga	213	L
Valewe	214	L
Walyurin	215	L
Weona	216	L
West Brook	217	L
West Vale	218	L
Wililoo	219	L
Windorah	220	L
Woodpark Poll	221	L
Wyoming Downs	222	L
Yarong	223	L

Low accuracy Merino bloodlines can obtain their individual information from NSW DPI by contacting Sally Martin on (02) 6382 1077 or sally.martin@dpi.nsw.gov.au

Information provided on low accuracy bloodlines will be in hard copy, and will only be sent to the bloodline owner. **Low accuracy information is only a guide;** more teams need to be entered into wether or ewe trials to improve the accuracy and qualify to be published in future publications.

The differences

The analysis has removed the variation in environment between trials and years using linkages, leaving only genetic variation between the bloodlines. The performance levels of 137 of the 307 bloodlines involved are considered sufficiently accurate to be reported. They appear in Table 1. Table 2 lists the low accuracy bloodlines (91), and the remaining 85 bloodlines have been left out of the analysis due to incomplete data.

Wool production and quality

Figures 2a and 2b graph the distribution 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. Table 1 provides detailed results for clean fleece weight, fibre diameter, body weight and some additional wool quality traits. The average performance for all 223 bloodlines (high, medium and low accuracies) is shown at the bottom of Table 1.

The returns

Table 1 presents gross margin per dry sheep equivalent (DSE) values for each bloodline. Gross margin values are described as the percentage difference from the average gross margin per DSE. Gross margin values in Table 1 are based on the average eastern market values for 2002/03 to 2006/07.

The average micron premiums for 2002 to 2006 (calendar years) are graphed in Figure 4 and presented in Table 3. See the panel on page15 for an explanation of micron premiums. Note that within a selling season the micron premium varies for different fibre diameters.

Gross margins for bloodlines show substantial variation, ranging from 22% above the average gross margin to 15% below the average return. The production differences of bloodlines have therefore translated into these very significant differences in bloodline profitability.

Contribution from traits

The economic values of all the traits, including the wool quality traits, have been used to calculate the gross margin values.

Together, fleece weight and fibre diameter dictated the majority of the economic value of bloodlines. In the 2002/03 to 2006/07 period fleece weight and fibre diameter accounted for 81% of the total variation between bloodlines in gross margin.

Of the remaining variation in gross margin, body weight accounted for 16% and the other wool quality traits accounted for the remaining 3% of variation. Since style, staple length and colour all show moderate to high across-flock correlations with fibre diameter, some of the influence of these traits would have been accounted for as diameter effects.

Figures 3a and 3b graph the gross margin per DSE values of bloodlines listed in Table 1, relative to their fibre diameter. The relationship between gross margin and fibre diameter is still apparent, but reduced from previous years when the micron premiums have been higher.

Figure 2a. Bloodline Deviations for Clean Fleece Weight and Fibre Diameter
<u>46 High</u> Accuracy Merino Bloodlines

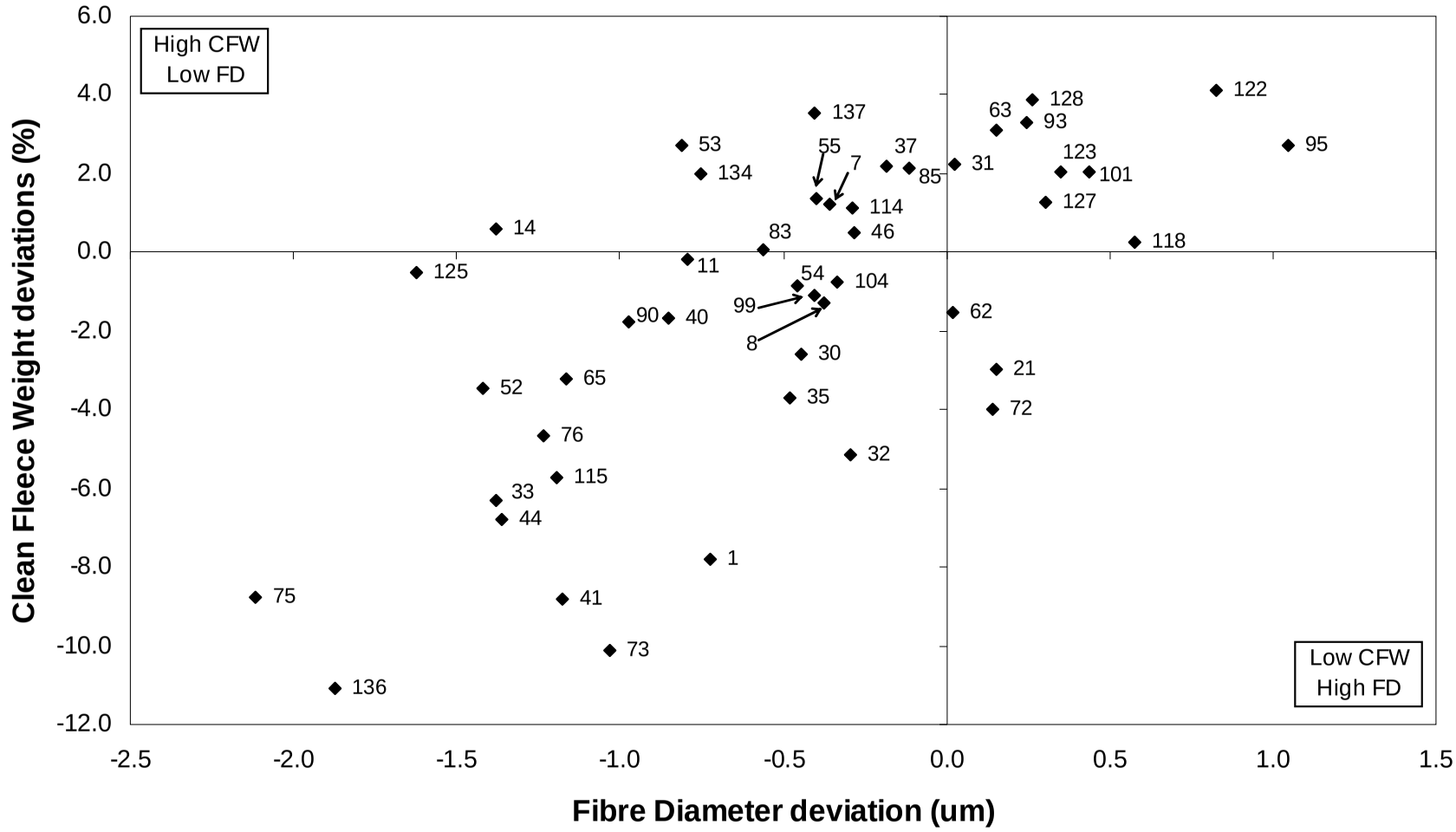


Figure 2b. Bloodline Deviations for Clean Fleece Weight and Fibre Diameter
<u>91 Medium</u> Accuracy Merino Bloodlines

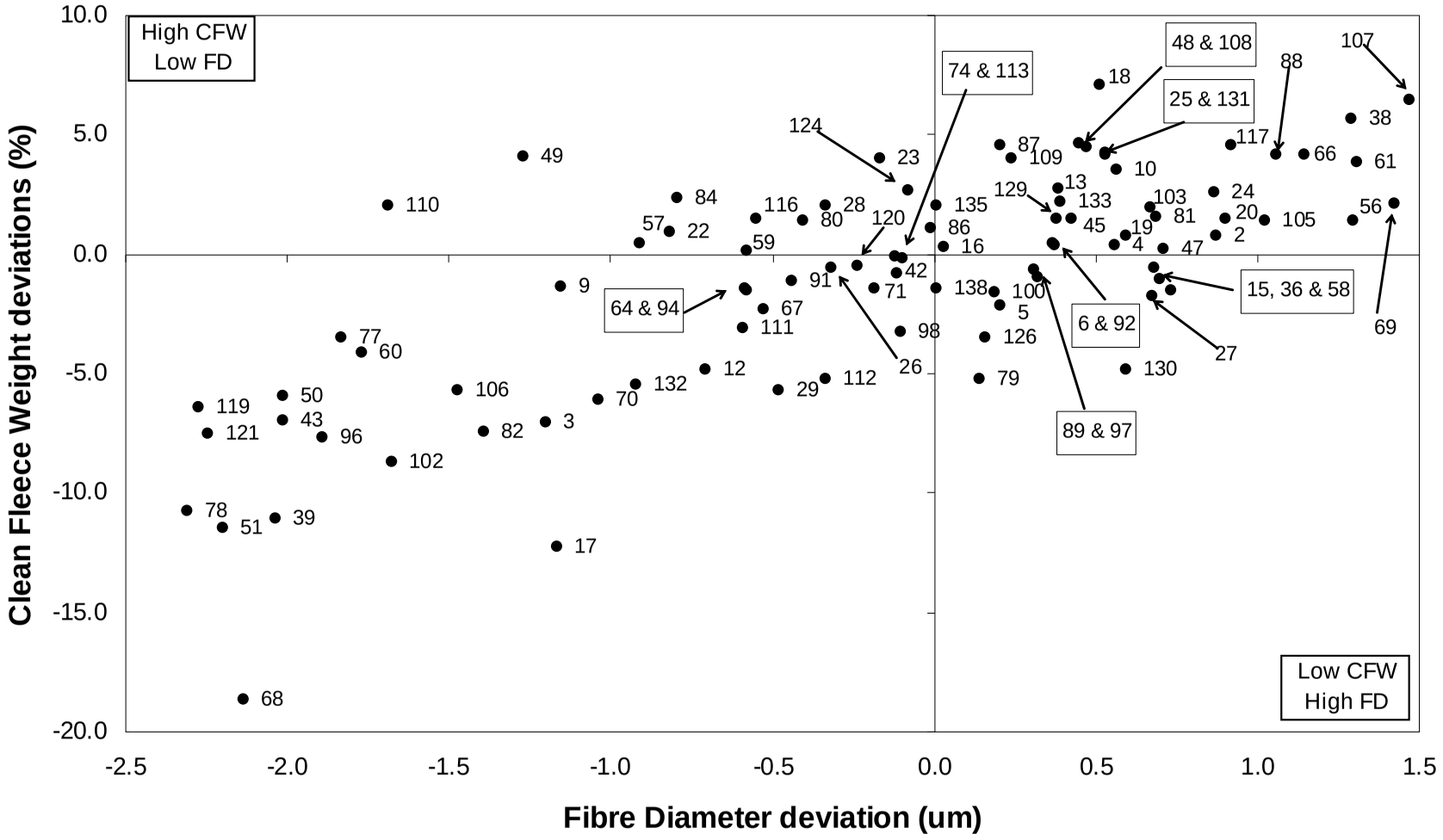


Figure 3a. Bloodline deviations for Gross Margin per DSE relative to Fibre Diameter
<u>46 High</u> Accuracy Merino Bloodlines

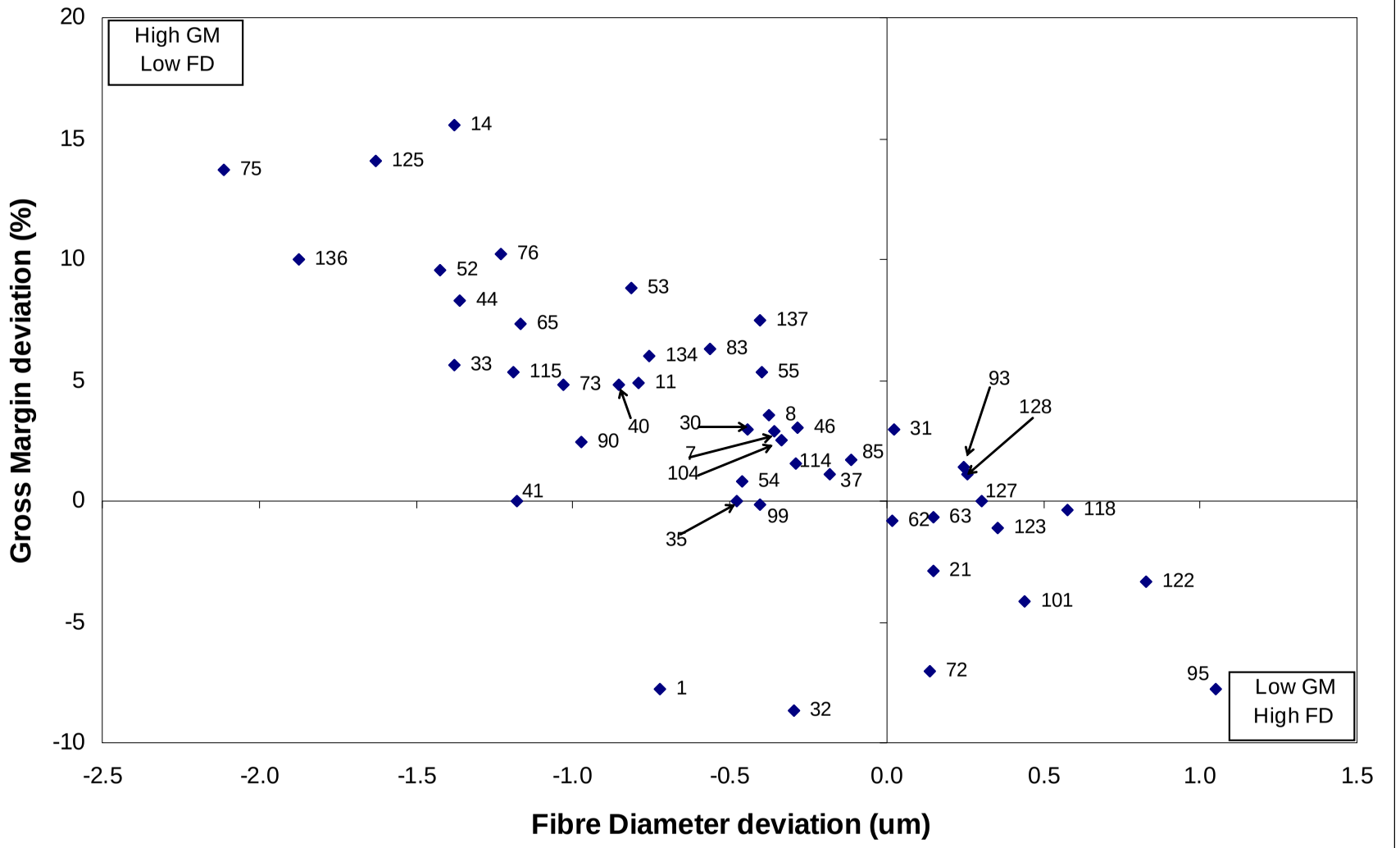


Figure 3b. Bloodline deviations for Gross Margin per DSE relative to Fibre Diameter

91 Medium Accuracy Merino Bloodlines

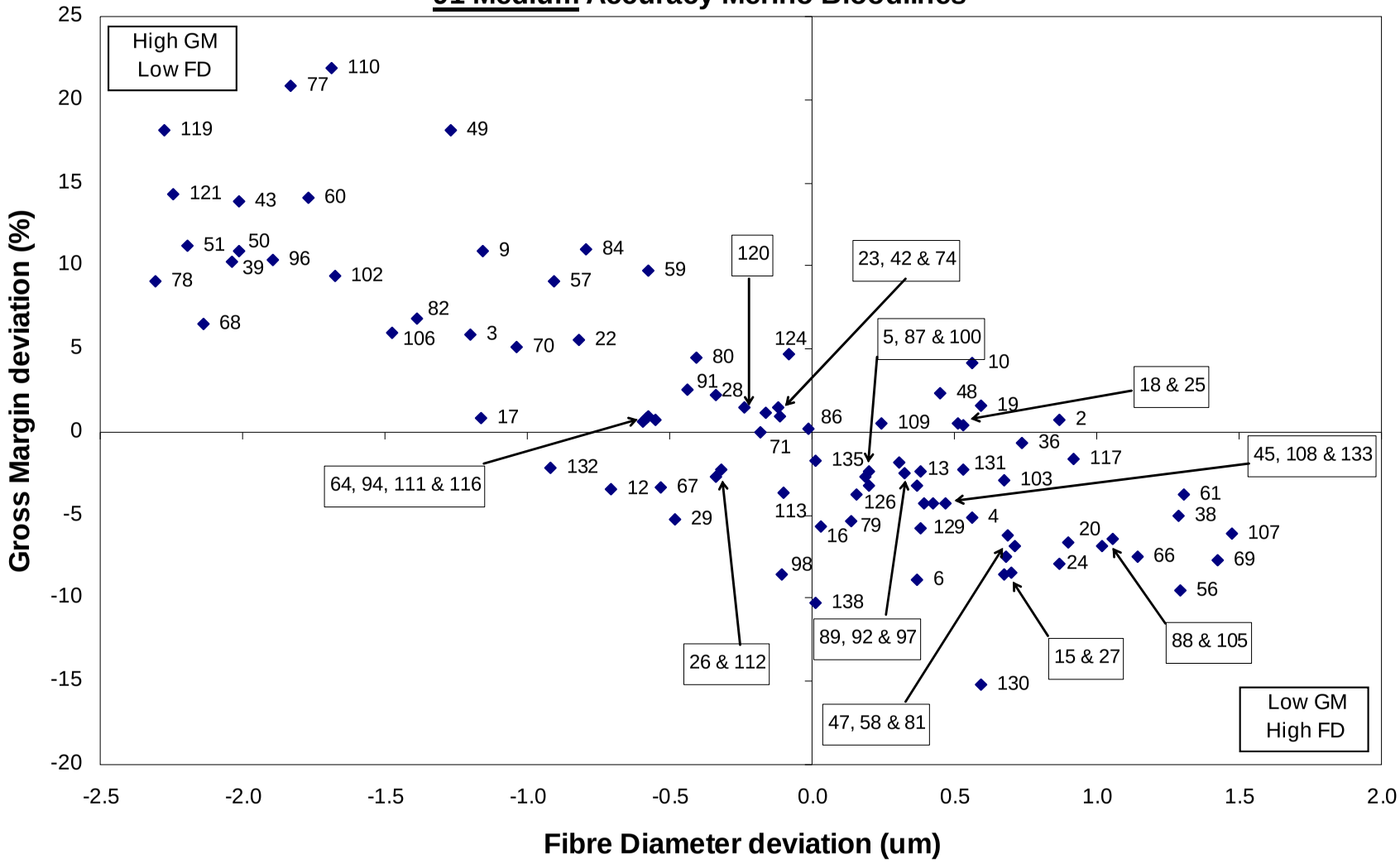


Figure 4. Micron premiums from 2002 to 2006.

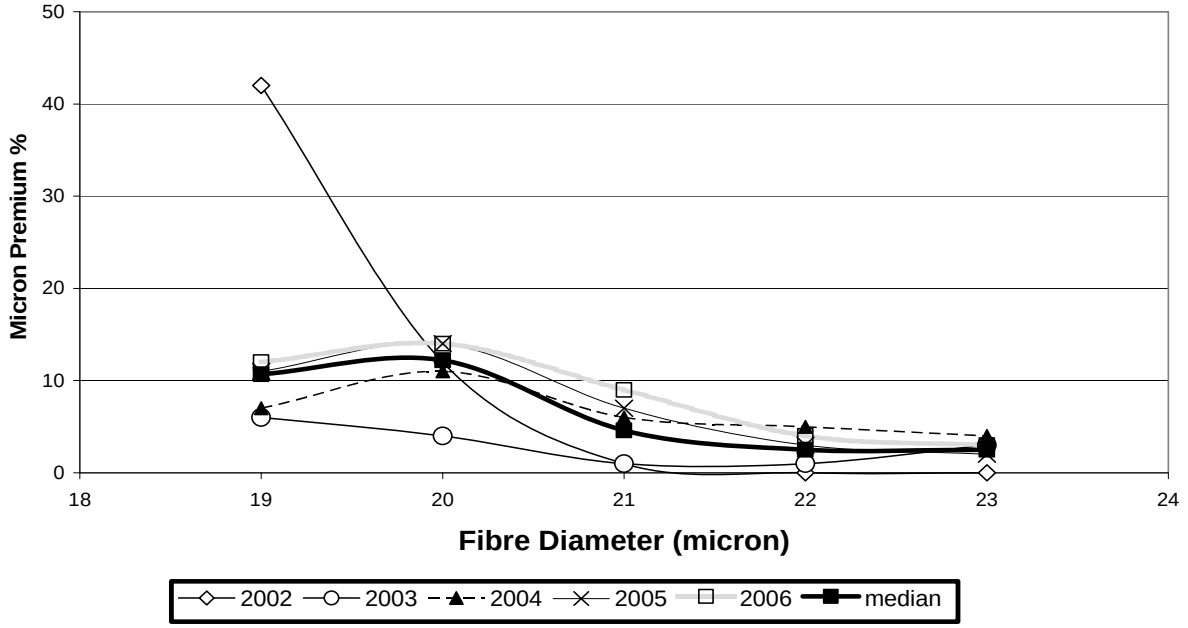


Table 3. Micron premiums 2002 to 2006.

Micron Premiums					
	19	**20**	**21**	**22**	**23**
2002	42	12	1	0	0
2003	6	4	1	1	3
2004	7	11	6	5	4
2005	11	14	7	3	2
2006	12	14	9	4	3
Average	14.1	11.1	4.8	2.7	2.5
Median	10.7	12.2	4.6	2.5	2.5

Market influence

The wool markets for 2003 (low), 2006 (high) and the five year median prices have been used to show the effects of different relative wool prices (Figures 5, 6 and 7). Figure 4 and Table 3 provide the micron premium data for the last 5 years.

This range of markets has been presented to assist breeders who are considering a range of breeding objectives.

There is a major change in gross margin value of bloodlines in the different market types demonstrated in Figures 5, 6 and 7. It is critical to have a clear understanding of the market type you feel describes the future wool market, as well as its influence on your breeding objective, before bloodline selection is undertaken.

Figures 5, 6 and 7 demonstrate the relationship between gross margin values, clean fleece weight and fibre diameter. A contour line on each graph joins points of equal gross margin value. The lines in each graph are of the same gross margin value.

The further the bloodline point is from a line (to the left), the greater the gross margin is.

Look at how your identified bloodline(s) perform in each market. A bloodline that performs well in all markets is less risky than a bloodline that only performs well under one particular market condition, giving a buffer against wool market volatility.

Three gross margin per DSE lines are shown on each graph. They are:

- 20% above average
- average
- 20% below average.

Bloodlines that are on, or close to, one of the three lines have a similar gross margin per DSE.

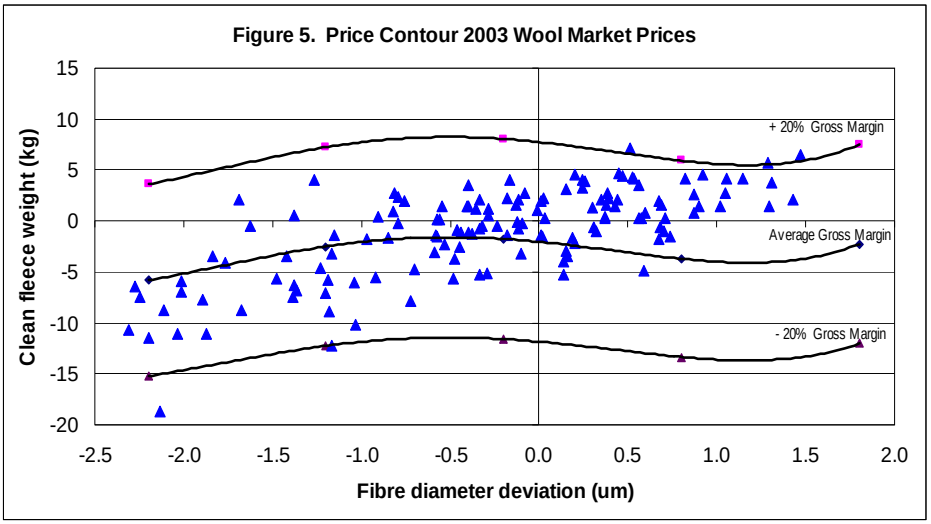


Figure 5 shows the gross margin contours using the average wool price for 2003. Figure 4 and Table 3 show the wool market details. This season (2003) has a low micron premium profile, hence a similar gross margin is achieved across the whole micron range.

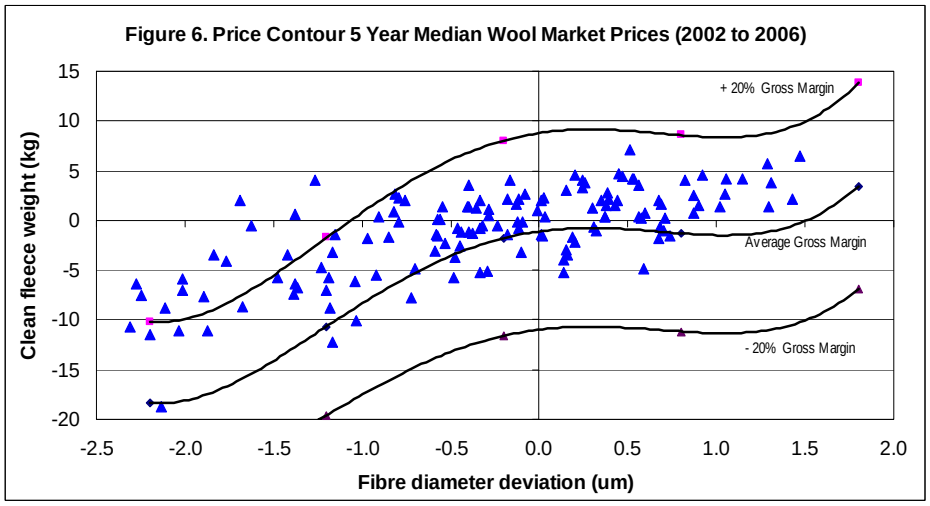


Figure 6 shows the gross margin contour lines for the median micron premium between 2002 and 2006. The median is the line where the market has spent 50 percent of the time above or below this line. It is a better indicator than the average. The highest premium in this market was around 20um, which then dropped off either side. See Figure 4 and Table 3 for more details about the median micron premiums.

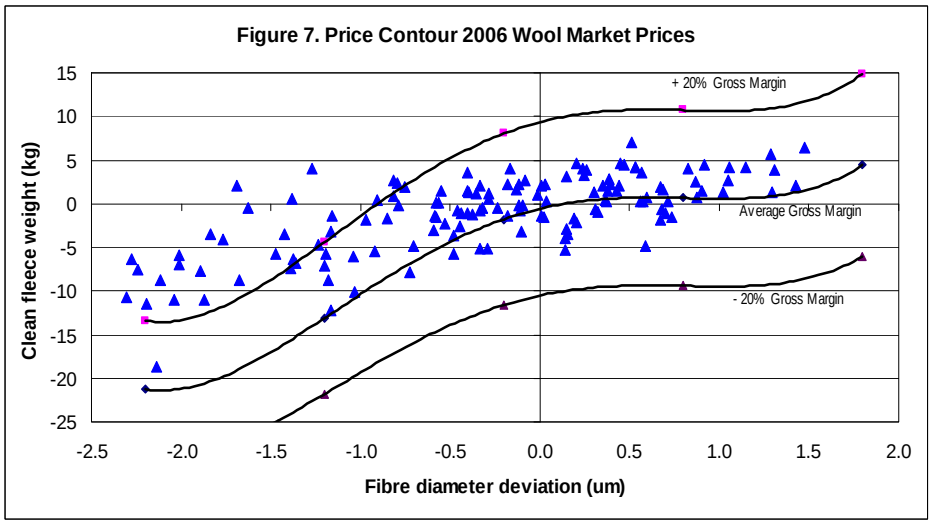


Figure 7 shows gross margin contour lines for 2006 where higher micron premiums (12%–14%) applied for the fine wools as well as medium wools (9%–4%). The results for both the Median and 2006 (Figures 6 and 7 respectively) show that some of the fine wool Merino bloodlines are above the +20% gross margin line.

Micron premium

Micron premium is a measure of the wool market's relative value of fleece weight and fibre diameter.

Micron premium is the percentage increase in price/kg for wool one micron finer. For example, the 20 micron premium is the value of 19μm relative to 20μm.

Calculating micron premium is simple and straightforward. Firstly, obtain the two wool market values for the micron you are considering. They may be micron indicators (commonly used for general distribution) or prices for a wool type relevant to a particular situation. They could be spot values or average values calculated over a longer period that reduces short term fluctuations. They could be values you think will be relevant in the future. The example below sets out how to do the calculations.

Example: Micron premium for 20μm wool

Step 1. Obtain the values of the micron you want to calculate and for one micron finer

For example:

- 20μm value = 1020 cents per kg
- 19μm value = 1138 cents per kg

Step 2. Calculate the value of fleece weight – that is, the value of 1 kg of wool for the micron you want to calculate.

The value of 1 kg of 20μm wool

= 1020 cents

Step 3. Calculate the value of fibre diameter – the difference between the value of the micron you want to calculate and the value of one micron finer.

The difference between 20μm and 19μm

= 118 cents per kg

Step 4. Calculate the relative value of fleece weight and fibre diameter – the value of fibre diameter divided by the value of fleece weight and expressed as a percentage (%).

$\frac{118}{1020} \times 100 = 11.6\%$ MP

Further information

A website (www.merinobloodlines.com.au) has been established which has all the information contained in this package, with some additional benefits and information. On the website, Table 1 can be sorted on all traits and categories. This facility will help individuals to easily identify the bloodlines which match their own breeding objectives.

To make the best use of this information, producers should consider the details on the inside cover of the Merino Bloodline Performance folder and Primefact 74 *Choosing a Bloodline Source*.

If you require further information, contact the NSW Department of Primary Industries Sheep & Wool Officer Sally Martin: ph (02) 6382 1077; fax (02) 6382 2228; email sally.martin@dpi.nsw.gov.au. Alternatively, you can contact Advanced Breeding Services: ph (02) 6391 3967; fax (02) 6391 3922; email abs@dpi.nsw.gov.au; or visit www.merinobloodlines.com.au

Acknowledgement

This national Merino bloodline analysis has been made possible with co-funding from Australian Wool Innovation Limited and NSW Department of Primary Industries.

ISSN 1832-6668

Check for updates of this Primefact at:
www.dpi.nsw.gov.au/primefacts

Job number 8157