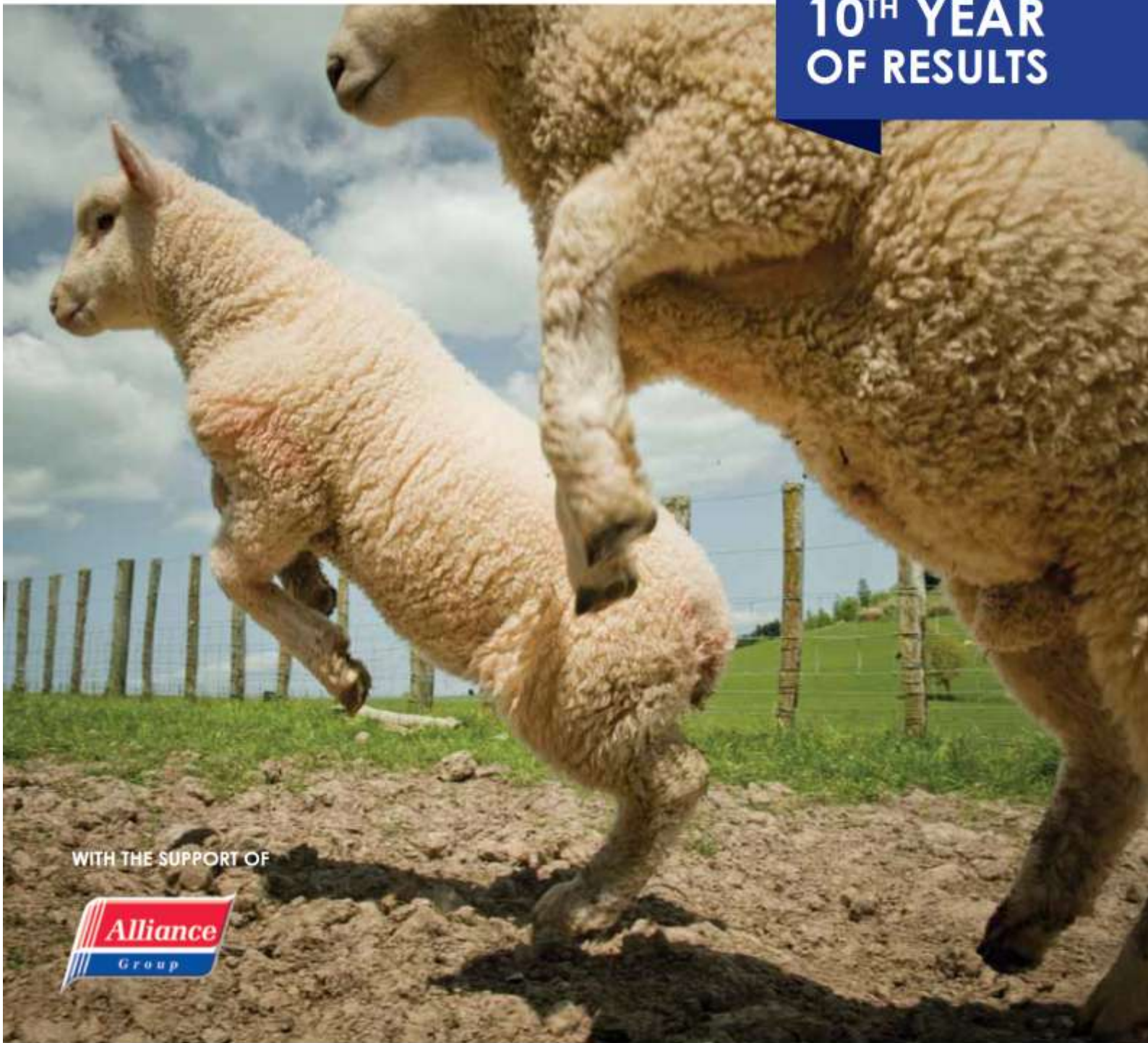




CENTRAL PROGENY TEST RESULTS

2011-2012

10TH YEAR
OF RESULTS



WITH THE SUPPORT OF



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KEY:

Sites:	A = Ashley Dene W = Woodlands P = Poukawa	Years:	99 = 1999/2000 season 00 = 2000/2001 season 01 = 2001/2002 season 02 = 2002/2003 season 03 = 2003/2004 season 04 = 2004/2005 season 05 = 2005/2006 season		06 = 2006/2007 season 07 = 2007/2008 season 08 = 2008/2009 season 09 = 2009/2010 season 10 = 2010/2011 season 11 = 2011/2012 season
eBV	Estimated breeding value	GGT21	Facial Eczema		
EMA	Eye Muscle Area	NLB	Number of lambs born		
FEC or WormFEC	Faecal Egg Count	FW12	Fleece weight at 12 months of age		
Acc	Accuracy value				

The results presented in this booklet comprise the top terminal and dual purpose rams for each index or trait. The Central Progeny Test Growth Index is based on weaning weight and carcass weight breeding values. The Central Progeny Test Meat Value Index is based on the breeding values for weight of meat in the leg, loin and shoulder lean as measured by VIAscan[®].

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INTRODUCTION

Background

Progeny tests are used to 'prove' the genetics of a ram by comparing how his progeny perform relative to progeny from other rams under the same conditions. Rams can be compared across multiple flocks by using the same rams across sites (often called reference or link sires) which create genetic connections between flocks. However, there are good reasons to run a progeny test at a central location, usually termed a "central progeny test". Reasons include facilitating comparisons of rams that would not normally be made in industry, and the use of novel or expensive measurement methods.

Objectives

The Beef + Lamb New Zealand Central Progeny Test has four objectives:

- Identify sources of high performing rams by extending and strengthening comparisons across flocks and breeding groups
- Develop genetic parameters for, and industry understanding of, novel traits
- Foster links between ram breeding groups
- Provide a genetic resource for add-on projects of value to sheep farmers and allied industries

This report addresses the first objective.

The Central Progeny Test was not set up as a breed comparison, but rather as a **ram** comparison. It has focused on identifying the best genetics regardless of breed. Breed comparisons require testing many randomly selected rams per breed, with few progeny per ram. The Central Progeny Test has evaluated a small number of rams, with a greater number of progeny per ram, from as many breeds as possible, to improve genetic connections within the New Zealand sheep industry.

Genetic connections between breeding groups established through the Central Progeny Test have been used in large scale evaluations performed across flocks and across breeds by Sheep Improvement Ltd (SIL). These are the "SIL-ACE" (SIL Advanced Central Evaluation; www.sil.co.nz/SIL-ACE/ACE-reports.aspx) evaluations. Central Progeny Test data has provided critical genetic connections for this to be undertaken.

History of the Central Progeny Test

In 2002, the "Alliance Central Progeny Test[®]" was established at Woodlands, in Southland, with significant investment from the Alliance Group and the collaboration of AgResearch, SIL and AbacusBio. Terminal sire and dual purpose rams were sourced from industry and mated to Coopworth or Coopworth-cross ewes. Lambs were assessed for growth rate and carcass merit, making use of Alliance's VIAscan[®] technology for carcass assessment. This was repeated in 2003, with the addition of a second site at Ashley Dene in collaboration with Lincoln University. Lambs continued to be assessed for growth rate and carcass merit.

In 2004 there was a change to include maternal traits for dual purpose rams. Dual purpose rams were mated to sufficient ewes to generate female progeny to be retained for assessment of maternal traits. Surplus females and all male lambs were assessed for growth rate and carcass merit. Funding for the work with female progeny was provided by the then Meat & Wool New Zealand. In 2005 a third site was established at Poukawa (Hawkes Bay) with On-Farm Research and historic weaning and carcass weight data from the Poukawa Elite Lamb programme (1998 to 2004) were added to the analysis.

From 2005, matings and measurements have been carried out using the same protocols at all three sites. Funding for the Central Progeny Test is now provided by Beef + Lamb New Zealand and the programme is known as the B+LNZ Central Progeny Test. Results in the following tables are based on analysis of data from all rams evaluated to date. Results are presented as two indexes (Central Progeny Test Growth Index and Central Progeny Test Meat Value Index)

and individual breeding values for traits of interest. A SIL Dual Purpose Production index including merit for other traits as well is presented at the end of the results section.

Changes to the presentation of results for 2011/2012 born progeny

There have been no changes to the traits presented or the format of the results compared to last year's results booklet. A ram 'aging' policy has been introduced, whereby rams that are used in the Central Progeny Test ten years or more ago **and** have no progeny born in SIL-recorded flocks in the last four years are not listed regardless of their ranking. This means that the rams listed are currently, or were recently, available.

The term used for breeding value is "eBV" (for "estimated breeding value") in this booklet rather than the "BV" term used previously. This is because breeding values based on DNA tests ("molecular breeding values") have been released and there is the need to distinguish between the different types of breeding value.

This is the third year that accuracies for breeding values are presented. They appear in parentheses beside the breeding value in the tables. The accuracy values range from 0 to 100%. The higher the accuracy, the greater the amount of data available to calculate the breeding value for the ram, and the less likely the breeding value would change if additional progeny are measured.

This is also the third year that a table summarising the dual purpose performance of dual purpose rams is presented. The top 20 rams are listed on the basis of their dual purpose performance. The table ranks rams on the SIL "Dual Purpose Production" (DPP) index, and lists the sub-indexes that make up the DPP index, and the WormFEC and facial eczema breeding values, all of which are expressed in dollar terms.

Within this booklet, SIL across-flock breeding values have been calculated from an across-flock analysis of the three Central Progeny Test flocks for weaning weight; WormFEC and fleece weight. SIL-ACE breeding values (i.e. including data outside the Central Progeny Test) are used where the breeding value needs greater numbers of records to improve the accuracy of breeding values, namely for number of lambs born and facial eczema breeding values. All other breeding values are estimated using Central Progeny Test data in stand-alone analyses. These include breeding values for the traits: hindleg lean; loin lean; shoulder lean; carcass weight; and eye muscle area.

Breeding values for the traits dressing percentage, pH, meat colour and fat colour are presented only in the tables for the top 20 dual purpose and top 20 terminal sire rams for meat and growth. They will continue to be measured so that the genetic relationships between these quality traits and growth and yield traits can be monitored.

There is a ram called "1980s Sires" in all of the dual purpose results tables. This is the average result for a group of five leading Romney rams from the early 1980s that the Central Progeny Test obtained using semen held in storage by AgResearch. The results are interesting in that they give an indication of the genetic improvement that has accumulated over the last three decades.

HOW TO UNDERSTAND CENTRAL PROGENY TEST RESULTS

This booklet contains breeding values and indexes for rams used in the Alliance Central Progeny Test[®] and B+LNZ Central Progeny Test. In addition, data from rams used in the Elite Lamb programme at Poukawa from 1998 to 2004 have been included for the evaluation of growth. A total of 234 rams have been evaluated in the Central Progeny Test to date, and the breeding values for the **top 25 terminal sire and top 25 dual purpose rams** are presented for each trait or index.

A breeding value is an estimate of the animal's true genetic worth, or the value of a parent's genes, half of which are passed on to its offspring. A breeding value does not necessarily reflect

the observed performance of the animal itself because the observed performance is a combination of both the animal's genes and effects of the environment it has been raised in.

Breeding values that were sourced from SIL or SIL-ACE (i.e. weaning weight, WormFEC, numbers of lambs born and facial eczema) are adjusted so the average of animals born in 1995 was zero. Central Progeny Test breeding values and indexes presented here are given as deviations from an average of zero, which means that half of the rams tested will have negative breeding values.

To give an example of how to use a breeding value, if a ram has a breeding value of +1.0kg for weaning weight, we would expect the progeny to be 0.5 kg heavier at weaning (the sire provides half of the genes) than the progeny of the average ram in the Central Progeny Test. Likewise, if a ram has a breeding value of -1.0kg for weaning weight, we would expect his progeny to be 0.5kg lighter than the Central Progeny Test average. A negative breeding value for weaning weight does not necessarily mean that the ram is poor for growth rate, e.g. many dual purpose rams do not have the high growth rates found in the terminal sire breeds because they have been selected for many other traits. Thus, some of the better dual purpose rams for growth have negative breeding values because terminal sire rams are more likely to have higher values.

A breeding index is simply a way of combining breeding values for a number of traits, with an economic weighting applied to each breeding value so that the best economic response is achieved. For example, the Central Progeny Test Growth Index is a combination of the weaning weight and carcass weight breeding values.

Some Central Progeny Test breeding values and indexes differ from those produced by the SIL genetic evaluation system in several ways. The Central Progeny Test collects additional measurements which are not routinely collected in the wider industry. For example, the Central Progeny Test Meat Value Index is based on the weight of meat in each of the hindleg, loin and shoulder cuts as measured by the VIAscan[®] grading system, and eye muscle area is measured from tracings of the loin at slaughter.

For further information on breeding values, indexes and selection, visit the SIL website (www.sil.co.nz). Follow the link to "Technical Information" to find the SIL Users Manual and a number of technical documents.

Historical weaning and carcass weight data have been included from the Poukawa Elite Lamb programme making it possible to include these rams in the Central Progeny Test Growth Index. However, no results for these rams can now be reported because they do not meet the Central Progeny Test aging policy.

Central Progeny Test results are also available to download on either the B+LNZ website (www.beeflambnz.co.nz) or the Alliance Group website (www.alliance.co.nz).

CENTRAL PROGENY TEST GROWTH INDEX (\$)

Terminal:

Range: -\$1.12 to \$3.91

TAG	Flock	Breed	Sites	Progeny	Growth Index	Rank
241/04	Ohio	Poll Dorset	A08	34	\$3.91	1
81/06	South Suffolk NZ Myola	South Suffolk	W11	50	\$3.77	2
296/05	Waikite / Esselmont & Tamlet	Texel	A09	31	\$3.76	3
231/08	Goldstream	Suffolk	A10	42	\$3.68	4
447/03	Blackdale	Texel	P06	37	\$3.31	5
499/08	Arngibbon	Poll Dorset	A11	35	\$3.28	6
570/06	MegaMeat Glengarry	Poll Dorset	P08	83	\$3.18	7
101/08	Longdowns, SIL 746	Composite	W11	51	\$3.16	8
17/02	Tyane	Suffolk	P06	96	\$3.10	9
4012/99	Bilberry Oaks	Hampshire	W02 W03	51	\$2.95	10
*128/97	Punchbowl	Suffolk	W03	37	\$2.93	11
430/03	Glengarry	Poll Dorset	A05 P05 W05	117	\$2.82	12
341/05	Premier Suffolk	Suffolk	W09	37	\$2.78	13
25/99	Tyane	Suffolk	Link sire	767	\$2.67	14
299/01	Ohio	Poll Dorset	A04	34	\$2.67	15
4208/06	Rissington Awapai	Primera	P10	50	\$2.53	16
267/10	Longdowns, SIL 746	Composite	W11	52	\$2.52	17
33/04	Myola	South Suffolk	P06	52	\$2.49	18
914/08	Southern Texel Breeders Group	Texel	W11	47	\$2.47	19
1344/09	Mount Linton	Texel Cross	W11	40	\$2.43	20
767/99	Darenal	Dorset Down	A03	14	\$2.40	21
402/07	MegaMeat Glengarry	Poll Dorset	P09	106	\$2.40	22
231/97	Bankhead	Southdown	A05	44	\$2.29	23
867/06	Adelong	Poll Dorset	A10	40	\$2.27	24
275/04	Goldstream	Suffolk	A07	54	\$2.25	25

Dual Purpose:

Range: -\$3.37 to \$3.00

TAG	Flock	Breed	Sites	Progeny	Growth Index	Rank
D110/04	Blackdale	Textra	W07	39	\$3.00	1
279/07	Cairnlea	Coopworth	A10	25	\$2.21	2
187/09	Twin Farm	TEFRom	W11	47	\$2.11	3
626/08	Blackdale	Texel	W10	27	\$1.16	4
409/06	Blythburn	Romney	W09	38	\$1.06	5
50394/06	Kelso	Kelso	A08 W09	51	\$0.95	6
742/04	Cairnlea	Coopworth	W07	27	\$0.92	7
2165/97	Wairere	Romney	W02 W03 A04	86	\$0.89	8
1233/02	SRDG	Romney	W08	14	\$0.87	9
245/04	Tamlet	Coopworth	W09	23	\$0.79	10
23253/05	Longdowns, SIL 916	Composite	W08	21	\$0.69	11
777/05	Tamlet	Coopworth	W08	35	\$0.54	12
232/01	TRIGG	Romney	W03	21	\$0.52	13
HG552/02	Clifton	Corriedale	A05	48	\$0.36	14
542/04	Hazeldale	Perendale	W06	29	\$0.35	15
2247/04	Rosedale	Growbulk	W07	35	\$0.25	16
5093/99	Meadowslea	Romney	A03	22	\$0.23	17
426/99	Mt Guardian	Perendale	W03	19	\$0.14	18
301/04	Hazeldale	Perendale	A08	21	\$0.08	19
1645/07	The Gree	Greeline	W10	37	\$0.04	20
50177/09	Kelso	Kelso	P11	43	\$0.02	21
300/03	MNCC	Coopworth	W05	27	\$0.01	22
3091/08	Rosedale	Growbulk	A11	25	\$0.00	23
1218/06	Hinenui	Coopworth	A09	35	-\$0.03	24
97/02	Raywell	Borderdale	A03 A04	52	-\$0.08	25
5 sires	1980s sires	Romney	W07	18	-\$2.71	104

This index is a terminal sire growth index based on weaning and carcass weight breeding values

CENTRAL PROGENY TEST MEAT VALUE INDEX (\$)

Terminal:

Range: -\$2.29 to \$5.42

TAG	Flock	Breed	Sites	Progeny	Meat Value Index	Rank
530/05	Grasmere	Texel	P08	39	\$5.42	1
642/09	Premier Texel	Texel	P11	46	\$3.54	2
141/04	Crest	Texel	W10	32	\$3.48	3
299/00	Landcorp Waikite	Texel	W02 W03	58	\$3.45	4
914/08	Southern Texel Breeders Group	Texel	W11	47	\$3.02	5
110/03	Murray Downs	Texel	W05	37	\$2.73	6
275/04	Goldstream	Suffolk	A07	54	\$2.70	7
101/03	Landover	Texel	W07	21	\$2.34	8
TB126/08	The Burn	Texel	A11	22	\$2.27	9
114/03	Landcorp Kepler	Lamb Supreme	A05	33	\$2.22	10
486/08	Landcorp Kepler	Lamb Supreme	W10	23	\$2.18	11
52/04	Mount Linton	Suftex	W06	32	\$2.15	12
299/01	Ohio	Poll Dorset	A04	34	\$2.12	13
44/02	WTD	Texel	P05	50	\$1.98	14
911/99	Murray Downs	Texel	W03	31	\$1.93	15
1296/03	Mount Linton	Texel Cross	W05	41	\$1.93	16
296/05	Waikite / Esselmont & Tamlet	Texel	A09	31	\$1.88	17
105/05	Fairlea	Texel	P10	51	\$1.81	18
570/06	MegaMeat Glengarry	Poll Dorset	P08	83	\$1.80	19
400/00	Brandes Burton	Texel	W02 W04	62	\$1.80	20
63/08	Longfield	SAMM (Meat Merino)	A10	52	\$1.63	21
89/05	South Suffolk Breeders	South Suffolk	A08	30	\$1.59	22
60159/07	Kelso	Kelso Ranger	A09	36	\$1.59	23
122/05	Blackdale	Texel	W08	40	\$1.47	24
021/01	Broken Hut	Texel	A03	29	\$1.46	25

Dual Purpose:

Range: -\$2.76 to \$3.51

TAG	Flock	Breed	Sites	Progeny	Meat Value Index	Rank
D110/04	Blackdale	Textra	W07	39	\$3.51	1
50394/06	Kelso	Kelso	A08 W09	51	\$2.53	2
626/08	Blackdale	Texel	W10	27	\$2.53	3
1645/07	The Gree	Greeline	W10	37	\$2.00	4
187/09	Twin Farm	TEFRom	W11	47	\$1.79	5
50177/09	Kelso	Kelso	P11	43	\$1.72	6
3091/08	Rosedale	Growbulk	A11	25	\$1.28	7
406/06	MNCC	Coopworth	P10	39	\$1.27	8
386/03	Rene	Perendale	A07	33	\$1.24	9
4203/02	Kelso	Kelso	P06	39	\$1.19	10
198/09	SRDG	Romney	W11	35	\$1.06	11
569/07	Longview	Perendale	P09	84	\$1.03	12
431/04	Twin Farm	TEFRom	W07	22	\$1.00	13
179/07	Wattlebank	Corriedale	A09	34	\$0.90	14
88/02	TRIGG	Romney	W05	26	\$0.86	15
301/04	Hazeldale	Perendale	A08	21	\$0.80	16
358/04	MNCC	Coopworth	P07	43	\$0.58	17
23253/05	Longdowns, SIL 916	Composite	W08	21	\$0.53	18
574/06	Kylemore	Perendale	A08	21	\$0.51	19
774/02	Flockton	Perendale	A04	37	\$0.45	20
1227/06	Ngaputahi	Growbulk	P09 P10	119	\$0.43	21
401/05	Hazeldale	Perendale	W08	38	\$0.37	22
132/01	Kelso	Kelso	W03	31	\$0.36	23
542/04	Hazeldale	Perendale	W06	29	\$0.35	24
544/07	Lincoln	Coopworth	W11	45	\$0.30	25
5 Sires	1980s sires	Romney	W07	18	-\$0.84	63

The relative value for meat in the loin was 4x that of meat in the shoulder and 2x that of meat in hindleg

WEANING WEIGHT EBV* (KG)

Terminal:

Range: -1.29 to 4.89

TAG	Flock	Breed	Sites	Progeny	WWT eBV (Acc)	Rank
17/02	Tyane	Suffolk	P06	106	4.89 (88)	1
296/05	Waikite / Esselmont & Tamlet	Texel	A09	32	4.18 (75)	2
447/03	Blackdale	Texel	P06	43	3.88 (80)	3
231/08	Goldstream	Suffolk	A10	41	3.84 (79)	4
33/04	Myola	South Suffolk	P06	60	3.55 (84)	5
25/99	Tyane	Suffolk	Link sire	828	3.52 (99)	6
341/05	Premier Suffolk	Suffolk	W09	37	3.50 (78)	7
241/04	Ohio	Poll Dorset	A08	37	3.46 (78)	8
231/97	Bankhead	Southdown	A05	53	3.36 (82)	9
430/03	Glengarry	Poll Dorset	A05 P05 W05	126	3.23 (91)	10
767/99	Darenal	Dorset Down	A03	14	3.20 (78)	11
4012/99	Bilberry Oaks	Hampshire	W02 W03	55	3.20 (85)	11
543/07	Paki-iti	Suffolk	P11	126	3.14 (78)	13
*128/97	Punchbowl	Suffolk	W03	38	3.12 (86)	14
570/06	MegaMeat Glengarry	Poll Dorset	P08	98	3.09 (88)	15
499/08	Arngibbon	Poll Dorset	A11	46	3.05 (77)	16
402/07	MegaMeat Glengarry	Poll Dorset	P09	113	3.00 (90)	17
X0050/87	Sheepac	Oxford	W03	31	2.96 (77)	18
77/95	Douglas Downs	Dorset Horn	W02 W04	121	2.94 (91)	19
1010/03	Punchbowl	Suffolk	W07	34	2.93 (77)	20
867/06	Adelong	Poll Dorset	A10	34	2.88 (77)	21
81/06	South Suffolk NZ Myola	South Suffolk	W11	60	2.75 (82)	22
169/02	Ohio	Poll Dorset	W06	37	2.71 (78)	23
275/04	Goldstream	Suffolk	A07	59	2.46 (81)	24
130/05	Belview	Dorset Down	A07	69	2.45 (84)	25

Dual Purpose:

Range: -4.01 to 3.38

TAG	Flock	Breed	Sites	Progeny	WWT eBV (Acc)	Rank
279/07	Cairnlea	Coopworth	A10	46	3.38 (82)	1
D110/04	Blackdale	Textra	W07	85	3.37 (89)	2
187/09	Twin Farm	TEFRom	W11	116	2.94 (88)	3
409/06	Blythburn	Romney	W09	69	1.80 (87)	4
742/04	Cairnlea	Coopworth	W07	79	1.78 (89)	5
1233/02	SRDG	Romney	W08	34	1.64 (80)	6
626/08	Blackdale	Texel	W10	62	1.57 (85)	7
232/01	TRIGG	Romney	W03	21	1.31 (71)	8
HG552/02	Clifton	Corriedale	A05	123	1.13 (90)	9
245/04	Tamlet	Coopworth	W09	70	1.13 (87)	9
50394/06	Kelso	Kelso	A08 W09	109	0.97 (91)	11
833/02	Tamlet	Coopworth	W05 W06	133	0.97 (92)	11
23253/05	Longdowns, SIL 916	Composite	W08	70	0.96 (87)	13
2165/97	Wairere	Romney	W02 W03 A04	127	0.93 (92)	14
50177/09	Kelso	Kelso	P11	152	0.82 (79)	15
542/04	Hazeldale	Perendale	W06	66	0.75 (87)	16
97/02	Raywell	Borderdale	A03 A04	79	0.71 (88)	17
2247/04	Rosedale	Growbulk	W07	74	0.70 (88)	18
531/98	Wharetoa	Coopworth	W03	48	0.64 (84)	19
5093/99	Meadowslea	Romney	A03	24	0.55 (72)	20
781/00	Shoreford	Romney	W03	43	0.45 (83)	21
512/05	Kamahi	Perendale	W07	35	0.36 (78)	22
D611/04	Glenovis	Corriedale	A07	95	0.34 (88)	23
107/97	Strathblane	Corriedale	A03	19	0.25 (66)	24
777/05	Tamlet	Coopworth	W08	95	0.22 (88)	25
1645/07	The Gree	Greeline	W10	97	0.22 (89)	25
5 Sires	1980s sires	Romney	W07	32	-3.63 (80)	106

*SIL eBV. The average weaning weight was 29.5kg

WORMFEC eBV* (%)

Terminal:

Range: 96.4% to -39.2%

TAG	Flock	Breed	Sites	Progeny	WormFEC eBV (Acc)	Rank
299/00	Landcorp Waikite	Texel	W02 W03	26	-38.8 (76)	1
44/02	WTD	Texel	P05	14	-30.8 (58)	2
3/04	Egilshay	Texel	A08	32	-24.4 (71)	3
61/97	Oringi	Oxford Down	A04	32	-22.0 (74)	4
167/02	MEBA	Texel	W04	16	-21.5 (72)	5
9/03	Pahiwi	Suffolk	P05	15	-21.3 (61)	6
110/03	Murray Downs	Texel	W05	16	-20.8 (60)	7
X0050/87	Sheepac	Oxford	W03	11	-19.9 (58)	8
19/03	Tasvic Downs	Southdown	P05	15	-17.2 (59)	9
49/05	MegaMeat	Poll Dorset	P07	16	-17.2 (61)	10
24/07	Punchbowl	Suffolk	W10	16	-17.2 (62)	11
252/05	Brandes Burton	Texel	W09	14	-17.2 (58)	12
65/03	Pahiwi	Suffolk	A06	36	-16.7 (74)	13
499/08	Arngibbon	Poll Dorset	A11	16	-16.4 (63)	14
77/95	Douglas Downs	Dorset Horn	W02 W04	11	-16.2 (76)	15
63/08	Longfield	SAMM (Meat Merino)	A10	16	-15.7 (62)	16
TB126/08	The Burn	Texel	A11	15	-14.7 (62)	17
911/99	Murray Downs	Texel	W03	16	-12.4 (67)	18
18/02	Brandes Burton	Texel	A07	25	-11.7 (68)	19
6/09	MegaMeat Glengarry	Poll Dorset	P11	16	-11.5 (57)	20
127/05	Douglas Downs	Poll Dorset	W07	16	-11.2 (62)	21
62/02	Silverstream	Dorset Down	W05	16	-11.2 (60)	22
4208/06	Rissington Awapai	Primera	P10	15	-11.1 (58)	23
236/07	Pahiwi	Suffolk	P09	15	-10.8 (63)	24
25/99	Tyane	Suffolk	Link sire	219	-10.6 (94)	25

Dual Purpose:

Range: 100.3% to -53.8%

TAG	Flock	Breed	Sites	Progeny	WormFEC eBV (Acc)	Rank
386/03	Rene	Perendale	A07	25	-53.8 (75)	1
722/03	Rosemains	Perendale	W05	16	-50.0 (74)	2
198/09	SRDG	Romney	W11	16	-42.3 (64)	3
4014/96	Landcorp Waihora	Romney	W04	16	-42.2 (69)	4
1127/95	Awareka	Romney	W03	14	-40.3 (63)	5
5 Sires	1980s sires	Romney	W07	21	-40.1 (69)	6
649/01	ARDG	Romney	P06	8	-38.1 (60)	7
417/04	ARDG	Romney	P08	15	-34.9 (55)	8
JL1695/1	WRIG	Romney	P05	13	-34.9 (57)	9
4203/02	Kelso	Kelso	P06	8	-34.8 (57)	10
1035/02	Newhaven	Perendale	W04	16	-34.6 (72)	11
300/03	MNCC	Coopworth	W05	16	-34.1 (74)	12
348/06	Sponsored Romney	Romney	A08	58	-33.2 (80)	13
347/05	ARDG	Romney	P11	15	-32.2 (50)	14
1617/04	Awareka	Romney	W07	46	-32.1 (76)	15
664/98	ARDG Elite	Romney	W03	15	-30.8 (64)	16
50394/06	Kelso	Kelso	A08 W09	37	-30.4 (79)	17
850/00	Hillcrest	Perendale	W03	16	-30.3 (66)	18
706/00	Lincoln	Coopworth	Link sire	494	-27.4 (97)	19
132/01	Kelso	Kelso	W03	16	-25.7 (65)	20
626/08	Blackdale	Texel	W10	16	-25.4 (65)	21
547/02	Alpha Genetics	Romney	W09	13	-23.9 (61)	22
147/01	Tresco	Romney	W05	17	-23.7 (70)	23
5093/99	Meadowslea	Romney	A03	16	-23.4 (61)	24
574/06	Kylemore	Perendale	A08	28	-23.3 (73)	25

* SIL eBV. WormFEC breeding values are expressed as a percentage reduction in eggs shed.

EYE MUSCLE AREA EBV (cm²)

Terminal:

Range: -1.42 to 3.64

TAG	Flock	Breed	Sites	Progeny	EMA eBV(Acc)	Rank
299/00	Landcorp Waikite	Texel	W02 W03	58	3.64 (95)	1
299/01	Ohio	Poll Dorset	A04	34	3.21 (91)	2
114/03	Landcorp Kepler	Lamb Supreme	A05	33	3.14 (91)	3
2002/02	Mount Linton	Texel Cross	A04	34	2.66 (91)	4
570/06	MegaMeat Glengarry	Poll Dorset	P08	83	2.57 (94)	5
530/05	Grasmere	Texel	P08	39	2.53 (90)	6
1694/05	Landcorp Kepler	Lamb Supreme	P09	28	2.49 (89)	7
91892/05	Kelso	Kelso Ranger	P08	52	2.41 (92)	8
127/05	Douglas Downs	Poll Dorset	W07	32	2.38 (88)	9
106/99	Ohio	Poll Dorset	W02	45	2.34 (92)	10
34/06	Southern Poll Dorset	Poll Dorset	W08	50	2.31 (91)	11
101/08	Longdowns, SIL 746	Composite	W11	51	2.18 (92)	12
141/04	Crest	Texel	W10	32	2.17 (90)	13
914/08	Southern Texel Breeders Group	Texel	W11	47	2.00 (92)	14
65/03	Pahiwi	Suffolk	A06	53	1.96 (93)	15
486/08	Landcorp Kepler	Lamb Supreme	W10	23	1.96 (86)	16
021/01	Broken Hut	Texel	A03	29	1.94 (90)	17
33/01	RBL Rissington	Primera	W04	27	1.91 (88)	18
T210/04	Wharetoa	Meatmaker	W06	34	1.90 (90)	19
642/09	Premier Texel	Texel	P11	46	1.89 (91)	20
4208/06	Rissington Awapai	Primera	P10	50	1.85 (90)	21
430/03	Glengarry	Poll Dorset	A05 P05 W05	117	1.83 (96)	22
1344/09	Mount Linton	Texel Cross	W11	40	1.82 (90)	23
341/05	Premier Suffolk	Suffolk	W09	37	1.82 (89)	24
485/05	Mount Linton	Texel/Poll Dors	W09	20	1.82 (85)	25

Dual Purpose:

Range: -2.57 to 2.68

TAG	Flock	Breed	Sites	Progeny	EMA eBV (Acc)	Rank
D110/04	Blackdale	Textra	W07	39	2.68 (93)	1
1560/03	The Gree	Greeline	W06	24	1.91 (92)	2
626/08	Blackdale	Texel	W10	27	1.81 (89)	3
23253/05	Longdowns, SIL 916	Composite	W08	21	1.28 (90)	4
2247/04	Rosedale	Growbulk	W07	35	0.90 (92)	5
138/01	Edale	Growbulk	A03	34	0.88 (91)	6
829/08	Rangiatea	Perendale	A10 A11	87	0.72 (95)	7
512/05	Kamaha	Perendale	W07	13	0.71 (86)	8
124/07	Rosemains	Perendale	W11	40	0.60 (91)	9
127/06	Avalon	Perendale	W10	15	0.50 (84)	10
1127/95	Awareka	Romney	W03	19	0.50 (86)	11
722/03	Rosemains	Perendale	W05	36	0.48 (94)	12
409/06	Blythburn	Romney	W09	38	0.40 (92)	13
426/99	Mt Guardian	Perendale	W03	19	0.36 (87)	14
55/01	Bonnieview	Perendale	W05	20	0.22 (90)	15
107/97	Strathblane	Corriedale	A03	15	0.21 (83)	16
85/00	Tahakita	Coopworth	W04 A04	75	0.20 (96)	17
542/04	Hazeldale	Perendale	W06	29	0.17 (92)	18
11/01	Little River	Cheviot	A03 W03	60	0.14 (94)	19
50177/09	Kelso	Kelso	P11	43	0.11 (91)	20
300/03	MNCC	Coopworth	W05	27	0.00 (92)	21
742/04	Cairnlea	Coopworth	W07	29	-0.07 (91)	22
5 Sires	1980s sires	Romney	W07	18	-0.07 (87)	23
1617/04	Awareka	Romney	W07	22	-0.07 (91)	24
569/07	Longview	Perendale	P09	33	-0.08 (95)	25

The average eye muscle area was 11.8cm².

NUMBER OF LAMBS BORN EBV*

Dual Purpose:

Range: -0.27 to 0.57

TAG	Flock	Breed	Sites	Daughters lambed	NLB eBV (Acc)	Rank
1617/04	Awareka	Romney	W07	166	0.57 (95)	1
742/04	Cairnlea	Coopworth	W07	162	0.49 (94)	2
214/05	TRIGG	Romney	W08	226	0.47 (94)	3
1218/06	Hinenui	Coopworth	A09	149	0.39 (89)	4
300/03	MNCC	Coopworth	W05	501	0.39 (97)	5
480/04	View Hill	Romney	A09	72	0.39 (86)	6
147/01	Tresco	Romney	W05	236	0.37 (96)	7
134/03	Hinenui	Coopworth	P08	218	0.37 (94)	8
1560/03	The Gree	Greeline	W06	125	0.35 (93)	9
50394/06	Kelso	Kelso	A08 W09	90	0.33 (86)	10
313/01	Valley	Coopworth	W04	81	0.31 (91)	11
4014/96	Landcorp Waihora	Romney	W04	413	0.30 (98)	12
179/07	Wattlebank	Corriedale	A09	37	0.27 (76)	13
278/03	MNCC	Coopworth	W06	80	0.25 (88)	14
4/06	Corriedale Breeder Group	Corriedale	A08	59	0.25 (84)	15
417/04	ARDG	Romney	P08	200	0.24 (91)	16
1035/02	Newhaven	Perendale	W04	221	0.24 (96)	17
5203/04	Marlow	Coopworth	Link sire	360	0.23 (96)	18
34/01	Twin Farm	TEFRom	W03 W06	145	0.22 (93)	19
4399/06	Landcorp Waihora	Romney	P08	195	0.22 (92)	20
412/06	Anui	Romney	W09	154	0.22 (84)	21
358/04	MNCC	Coopworth	P07	219	0.22 (94)	22
D611/04	Glenovis	Corriedale	A07	92	0.21 (87)	23
5 Sires	1980s sires	Romney	W07	11	-0.05 (61)	61

*SIL ACE eBV. Results are for rams with at least 20 daughters with two-tooth lambing records.

FLEECE WEIGHT EBV*

Dual Purpose:

Range: -0.80 to 0.83

TAG	Flock	Breed	Sites	Progeny	FW12 eBV (Acc)	Rank
742/04	Cairnlea	Coopworth	W07	40	0.83 (87)	1
1832/02	Awareka	Romney	W04 A04	28	0.69 (87)	2
313/01	Valley	Coopworth	W04	32	0.61 (87)	3
531/98	Wharetoa	Coopworth	W03	18	0.48 (81)	4
406/06	MNCC	Coopworth	P10	34	0.48 (77)	4
279/07	Cairnlea	Coopworth	A10	12	0.47 (73)	6
278/03	MNCC	Coopworth	W06	30	0.37 (86)	7
358/04	MNCC	Coopworth	P07	46	0.36 (85)	8
5828/02	Landcorp Waihora	Romney	W04	42	0.34 (89)	9
781/00	Shoreford	Romney	W03	13	0.32 (76)	10
348/06	Sponsored Romney	Romney	A08	44	0.29 (86)	11
245/04	Tamlet	Coopworth	W09	40	0.29 (85)	11
706/00	Lincoln	Coopworth	Link sire	333	0.28 (98)	13
1617/04	Awareka	Romney	W07	36	0.27 (86)	14
412/06	Anui	Romney	W09	18	0.24 (78)	15
211/99	Blackdale	Coopworth	W03	18	0.23 (80)	16
218/02	Waiohine	Romney	P07	47	0.22 (85)	17
1233/02	SRDG	Romney	W08	15	0.20 (75)	18
457/00	Nithdale	Romney	W06	17	0.19 (79)	19
4399/06	Landcorp Waihora	Romney	P08	28	0.19 (81)	19
2165/97	Wairere	Romney	W02 W03 A04	4	0.18 (78)	21
5203/04	Marlow	Coopworth	Link sire	77	0.18 (92)	21
833/02	Tamlet	Coopworth	W05 W06	30	0.18 (88)	21
5 Sires	1980s sires	Romney	W07	10	-0.49 (71)	89

*SIL eBV. Breeding values for fleece weight at 12 months of age. Average fleece weight was 3.12kg.

FACIAL ECZEMA EBV*

Dual Purpose:

Range: 1.02 to -1.05

TAG	Flock	Breed	Sites	Progeny*	GGT21 eBV (Acc)	Rank
649/01	ARDG	Romney	P06	36	-1.05 (90)	1
7180/08	Landcorp Waihora	Romney	W10	17	-0.96 (86)	2
4499/09	Landcorp Waihora	Romney	W11	17	-0.93 (86)	3
4399/06	Landcorp Waihora	Romney	P08	32	-0.90 (90)	4
4334/07	Landcorp Waihora	Romney	Link sire	51	-0.76 (92)	5
179/07	Wattlebank	Corriedale	A09	5	-0.71 (61)	6
347/05	ARDG	Romney	P11	20	-0.67 (85)	7
214/05	TRIGG	Romney	W08	5	-0.57 (59)	8
5203/04	Marlow	Coopworth	Link sire	44	-0.56 (88)	9
115/05	ARDG	Romney	P09	28	-0.52 (86)	10
278/03	MNCC	Coopworth	W06	11	-0.49 (81)	11
279/07	Cairnlea	Coopworth	A10	5	-0.47 (55)	12
50394/06	Kelso	Kelso	A08 W09	5	-0.47 (61)	12
722/03	Rosemains	Perendale	W05	5	-0.46 (65)	14
1645/07	The Gree	Greeline	W10	5	-0.46 (56)	14
4203/02	Kelso	Kelso	P06	5	-0.37 (55)	16
4/06	Corriedale Breeder Group	Corriedale	A08	6	-0.37 (63)	16
386/03	Rene	Perendale	A07	5	-0.34 (54)	18
218/02	Waiohine	Romney	P07	5	-0.32 (57)	19
6448/07	TRIGG	Romney	A10	5	-0.31 (55)	20
706/00	Lincoln	Coopworth	Link sire	75	-0.28 (93)	21
569/07	Longview	Perendale	P09	7	-0.27 (58)	22
417/04	ARDG	Romney	P08	13	-0.27 (83)	22
187/09	Twin Farm	TEFRom	W11	5	-0.27 (54)	22
18/04	White Rock	Corriedale	A06		-0.26 (58)	25
5 Sires	1980s sires	Romney	W07	5	0.06 (16)	56

* The number of progeny listed for rams in this table has changed this year from the numbers tested for facial eczema in the Central Progeny Test to the number of progeny tested in the SIL-ACE.

SIL ACE eBV. Breeding values are expressed as the amount of the liver enzyme GGT (Gamma glutamyl transferase) present 21 days after challenging progeny with sporidesmin. GGT indicates the amount of liver damage, so low (more negative) breeding values indicate resistance to facial eczema.

Facial eczema measurements have only been collected from dual purpose sires for seven years, so 77 rams have been evaluated to date.

TOP 20 TERMINAL RAMS FOR MEAT AND GROWTH

TAG	Flock	Breed	Progeny	Meat & growth index* (\$)	Meat Value Index (\$)	Growth Index (\$)	WWT eBV (kg)	Worm FEC eBV (%)	EMA eBV (cm ²)	Dress % eBV (%)	Fat colour eBV (b*)	Meat colour eBV (a*)	pH eBV
530/05	Grasmere	Texel	38	6.82	5.42	1.40	0.84	-0.2	2.53	1.72%	0.41	-0.14	-0.01
296/05	Waikite / Esselmont & Tamlet	Texel	31	5.64	1.88	3.76	4.18	-4.6	0.78	0.16%	-0.24	-0.18	0.01
914/08	Southern Texel Breeders Group	Texel	47	5.49	3.02	2.47	1.76	48.6	2.00	0.96%	-3.94	1.40	-0.06
570/06	MegaMeat Glengarry	Poll Dorset	88	4.98	1.80	3.18	3.09	32.4	2.57	0.93%	-0.82	-1.18	-0.01
275/04	Goldstream	Suffolk	53	4.94	2.70	2.24	2.46	96.4	1.67	-1.36%	0.55	0.03	0.01
241/04	Ohio	Poll Dorset	34	4.90	0.99	3.91	3.46	51.8	0.77	0.18%	0.03	-0.53	-0.04
299/01	Ohio	Poll Dorset	72	4.79	2.12	2.67	1.50	72.0	3.21	0.44%	-1.43	-0.22	0.00
299/00	Landcorp Waikite	Texel	59	4.43	3.45	0.98	-0.34	-38.8	3.64	2.23%	-0.92	-0.31	0.00
101/08	Longdowns, SIL 746	Composite	51	4.40	1.24	3.16	2.18	-2.3	2.18	1.47%	-0.39	0.85	-0.07
486/08	Landcorp Kepler	Lamb Supreme	23	4.28	2.18	2.10	2.15	11.0	1.96	0.84%	-1.55	-1.29	0.03
499/08	Arngibbon	Poll Dorset	35	4.03	0.75	3.28	3.05	-16.4	-1.21	-0.60%	-0.16	0.30	0.01
141/04	Crest	Texel	32	3.99	3.48	0.51	-0.25	29.2	2.17	1.27%	-1.50	-0.10	0.01
*128/97	Punchbowl	Suffolk	114	3.97	1.04	2.93	3.12	7.4	1.36	-0.50%	-1.51	-1.38	0.07
447/03	Blackdale	Texel	43	3.93	0.62	3.31	3.88	-0.6	1.26	0.32%	-3.90	-0.17	0.00
341/05	Premier Suffolk	Suffolk	38	3.85	1.07	2.78	3.50	8.7	1.82	0.11%	-0.46	0.14	0.01
25/99	Tyanee	Suffolk	1034	3.82	1.15	2.67	3.52	-10.6	0.28	-0.99%	2.11	-0.76	0.03
231/08	Goldstream	Suffolk	38	3.62	-0.06	3.68	3.84	-0.6	-1.08	-0.98%	0.83	-0.14	0.07
48/05	Premier Suffolk	Suffolk	37	3.53	1.38	2.15	2.39	-7.6	-0.09	0.10%	-0.19	-0.29	0.00
TB126/08	The Burn	Texel	31	3.49	2.27	1.22	0.30	-14.7	0.10	-1.15%	0.75	0.63	-0.04
101/03	Landover	Texel	18	3.44	2.34	1.10	0.15	-7.5	1.22	1.16%	0.10	-0.71	0.00

* The combined Growth and Meat Value indexes, calculated by adding together the two individual indexes.

Positive (i.e. higher) values are better for all traits except WormFEC, fat colour and pH eBV where a negative (i.e. lower) value is better.

TOP 20 DUAL PURPOSE RAMS FOR MEAT AND GROWTH

TAG	Flock	Breed	Progeny	Meat & growth Index* (\$)	Meat Value Index (\$)	Growth Index (\$)	WWT eBV (kg)	Worm FEC eBV (%)	EMA eBV (cm2)	Dress % eBV (%)	Fat colour eBV (b*)	Meat colour eBV (a*)	pH eBV	NLB eBV	FW12 eBV (kg)	FE eBV
D110/04	Blackdale	Textra	39	6.51	3.51	3.00	3.37	-21.9	2.68	0.86%	-1.91	-0.18	0.02	-0.04	-0.77	-0.01
187/09	Twin Farm	TEFRom	47	3.90	1.79	2.11	2.94	1.7	-0.95	-0.54%	-2.02	-0.73	0.03			-0.27
626/08	Blackdale	Texel	27	3.69	2.53	1.16	1.57	-25.4	1.81	0.45%	-1.48	-0.35	0.01		-0.08	0.61
50394/06	Kelso	Kelso	51	3.48	2.53	0.95	0.97	-30.4	-0.92	-0.02%	-0.44	-0.58	0.08	0.33	-0.75	-0.47
1645/07	The Gree	Greeline	37	2.04	2.00	0.04	0.22	-20.6	-0.40	-0.09%	0.13	-0.60	0.03		-0.01	-0.46
50177/09	Kelso	Kelso	43	1.74	1.72	0.02	0.82	-14.2	0.11	0.16%	-0.14	-1.06	0.09			0.09
3091/08	Rosedale	Growbulk	25	1.28	1.28	0.00	-0.47	23.6	-0.23	-0.46%	0.48	0.41	-0.02			-0.16
23253/05	Longdowns, SIL 916	Composite	23	1.22	0.53	0.69	0.96	29.4	1.28	-0.40%	0.38	-0.43	-0.02	-0.09	-0.05	0.20
409/06	Blythburn	Romney	39	1.20	0.14	1.06	1.80	13.2	0.40	-0.90%	-0.62	-0.12	0.02	0.03	-0.05	0.27
279/07	Cairnlea	Coopworth	21	1.05	-1.16	2.21	3.38	-22.5	-0.58	-0.26%	0.73	0.30	-0.03		0.47	-0.47
301/04	Hazeldale	Perendale	20	0.88	0.80	0.08	-0.25	-18.3	-1.74	-0.87%	-0.25	0.05	-0.03	0.00	-0.18	-0.03
406/06	MNCC	Coopworth	40	0.81	1.27	-0.46	-0.34	8.5	-0.43	-0.95%	0.50	1.01	-0.02		0.48	-0.04
542/04	Hazeldale	Perendale	30	0.7	0.35	0.35	0.75	-9.9	0.17	-0.72%	1.12	0.38	-0.01	0.19	-0.50	-0.23
358/04	MNCC	Coopworth	44	0.45	0.58	-0.13	0.14	31.4	-0.98	-0.62%	1.21	1.21	-0.04	0.22	0.36	-0.16
198/09	SRDG	Romney	35	0.32	1.06	-0.74	-0.49	-42.3	-1.35	-1.74%	-1.71	0.11	0.05			0.45
1218/06	Hinenui	Coopworth	34	0.26	0.29	-0.03	-0.41	34.1	-0.32	-0.13%	-0.99	-0.75	0.03	0.39	0.10	0.18
245/04	Tamlet	Coopworth	22	0.23	-0.56	0.79	1.13	-16.4	-0.29	-0.29%	1.52	0.86	-0.06	0.21	0.29	0.54
569/07	Longview	Perendale	83	0.22	1.03	-0.81	-0.26	-10.3	-0.08	0.41%	-1.53	0.53	-0.02	-0.06	-0.29	-0.27
1227/06	Ngaputahi	Growbulk	117	0.19	0.43	-0.24	-0.11	50.5	-0.50	0.35%	-1.51	1.35	0.00	-0.10	0.01	0.63
2247/04	Rosedale	Growbulk	35	0.16	-0.09	0.25	0.70	-3.7	0.90	-0.30%	0.20	0.45	-0.04	0.08	-0.23	0.21

* The combined Growth and Meat Value indexes, calculated by adding together the two individual indexes.

Positive (i.e. higher) values are better for all traits except WormFEC, fat colour, pH and FE eBV where a negative (i.e. lower) value is better.

Rams with no values for NLB do not yet have an two-tooth daughters lambing, and missing FW12 eBV have no progeny yet assessed

TOP 20 DUAL PURPOSE RAMS FOR DUAL PURPOSE INDEXES*

TAG	Flock	Breed	Production (\$)*	Lamb growth (\$)	Adult size (\$)	Meat (\$)	Wool (\$)	Reproduction (\$)	WormFEC (\$)	Facial Eczema (\$)
742/04	Cairnlea	Coopworth	25.98	11.89	-2.28	0.34	3.52	11.95	-8.24	0.83
1617/04	Awareka	Romney	22.91	6.84	-3.54	0.49	1.07	13.80	1.37	0.70
134/03	Hinenui	Coopworth	21.46	10.16	-2.48	1.02	0.38	8.90	1.59	-2.34
300/03	MNCC	Coopworth	20.73	6.80	-2.39	1.28	1.97	9.50	1.93	0.30
4/06	Corriedale Breeder Group	Corriedale	19.75	9.40	-3.84	0.24	3.42	6.06	-3.77	3.32
5203/04	Marlow	Coopworth	19.09	10.99	-2.16	0.45	2.89	5.50	-3.10	5.07
1218/06	Hinenui	Coopworth	18.74	12.42	-4.94	0.50	1.02	9.58	-0.54	-1.59
1560/03	The Gree	Greeline	18.74	8.47	-0.61	1.06	0.89	8.39	2.97	-9.17
214/05	TRIGG	Romney	17.90	8.04	-1.46	-0.76	-0.05	11.30	0.66	5.12
480/04	View Hill	Romney	17.46	8.77	-4.27	0.88	1.79	9.46	0.61	1.59
412/06	Anui	Romney	17.30	7.82	-2.12	-0.13	1.97	5.29	-2.86	0.61
358/04	MNCC	Coopworth	17.27	10.80	-4.56	-1.10	2.33	5.22	1.84	1.49
278/03	MNCC	Coopworth	17.17	5.80	2.72	-1.50	3.10	6.15	1.47	4.38
245/04	Tamlet	Coopworth	16.17	10.33	-1.43	-1.28	1.87	5.01	0.89	-4.87
2247/04	Rosedale	Growbulk	15.47	8.89	-2.21	-0.12	0.80	1.84	-0.59	-1.88
777/05	Tamlet	Coopworth	15.12	13.51	-4.81	0.43	0.61	3.76	-4.04	-5.65
206/05	Glenrannoch	Perendale	14.58	9.80	-5.40	-0.43	1.77	3.17	-3.09	-3.18
457/00	Nithdale	Romney	13.60	7.17	-0.37	-0.89	1.90	3.59	2.58	-0.59
179/07	Wattlebank	Corriedale	13.54	7.92	-4.46	0.24	0.73	6.58	-0.56	6.40
301/04	Hazeldale	Perendale	13.40	9.08	-1.88	1.27	0.93	-0.05	-2.53	0.26

* These results are the SIL Dual Purpose Production (DPP) index, and the sub-indexes that make up the DPP (www.sil.co.nz). The DPP does not include health traits, so WormFEC and facial eczema are listed as well. All indexes are in dollar values. Maternal traits have only been collected from daughters of dual purpose sires since 2005, so 55 rams have been evaluated to date.

MEASUREMENT OF FACIAL ECZEMA TOLERANCE

Facial eczema (FE) is a disease caused by a fungus that lives in the base of pasture and which releases a toxin called sporidesmin. Sporidesmin can affect a grazing animal's metabolism and cause liver damage, loss of productivity and, in severe cases, death. A difficulty for farmers in managing FE is that the severity of outbreaks can vary greatly within and between years due to environmental conditions (temperature, humidity and pasture condition). While there are pasture and livestock treatments that can be used to reduce the impact of an FE outbreak, breeding for tolerance to facial eczema offers commercial farmers a longer-term, welfare-friendly approach to FE management.

Ram breeders are able to test rams for their resistance to sporidesmin using the Ramguard system and have breeding values for FE tolerance calculated in Sheep Improvement Ltd (SIL). FE tolerance testing has occurred for progeny from each dual purpose ram evaluated in the Central Progeny Test since 2005, and breeding values for Central Progeny Test animals are presented in this results booklet each year. Briefly, five progeny (ram lambs, or surplus ewe lambs) from each dual purpose sire at each site are sent to one central location and evaluated for their resistance to FE. Each lamb is artificially challenged with a measured dose of sporidesmin. An enzyme called gamma glutamyl transferase (GGT) is released from the liver in response to the sporidesmin toxin. A blood sample is taken 21 days after treatment and the amount of GGT is measured. A low amount of GGT in the blood indicates good FE tolerance and a high amount indicates poor tolerance.

Setting the correct dose rate for the challenge is difficult. The desired response is for tolerant animals to have a small or no response to challenge while intolerant animals have a larger response. If the dose rate is too low then no animals respond to the challenge, and if the dose rate is too high, then all animals have a large response and genetic differences are hidden. In addition, a natural challenge may occur in some years which adds an unknown amount of sporidesmin to the artificial challenge. The dose rates used each year in the Central Progeny Test are listed in the table below.

Year	Sporidesmin dose rate (mg/kg)
2005	0.250
2006	0.250
2007	0.200
2008	0.250
2009	0.300
2010	0.275
2011	0.275

The levels vary from year to year as the correct dose rate has been refined. These dose rates are lower than those used in flocks with a history of strong selection for FE tolerance. However, the dose rates must be lower because ewes used at the three Central Progeny Test sites are sourced from flocks without a history of selection for FE tolerance, and the ewe provides around half of the genetic merit for tolerance/susceptibility, to FE. Also, many of the sires come from lines with no history of selection for FE tolerance.

The Central Progeny Test has been actively choosing rams from flocks or groups that measure FE tolerance to improve genetic connections between flock groups and so enhance the breeding values estimated in across flock analyses. Farming an FE tolerant flock will mean less time and money are spent on pasture and livestock management treatments and in time lead to greater peace of mind without the worry of when the next FE outbreak will be.

More information about facial eczema and SIL breeding values can be obtained at www.sil.co.nz, by email to silhelp@sil.co.nz or by telephone to 0800-745-435 (0800-SIL-HELP). Enquiries about the Ramguard service can be directed to **Neville Amyes**, C/o AgResearch Ruakura, Phone (07) 838 5421 or 029 838 5259.

TEN YEARS OF THE CENTRAL PROGENY TEST

This booklet marks the 10th year of results from the Beef + Lamb New Zealand Central Progeny Test. A total of 234 rams have been evaluated over ten years with very good representation of sheep breeds and strains present in New Zealand. A brief history of the Central Progeny Test is presented on page two of this booklet, from its beginning as the Alliance CPT in 2002 through to the present day Beef + Lamb New Zealand Central Progeny Test. During this period, the Central Progeny Test has achieved a number of notable milestones and made a significant contribution to the New Zealand sheep industry.

The most visible output of the Central Progeny Test is this results booklet. Compiled each June, results presented include the performance of lambs born the previous spring and their dams. Presentations on the Central Progeny Test results are made, and booklets distributed, at field days throughout New Zealand.

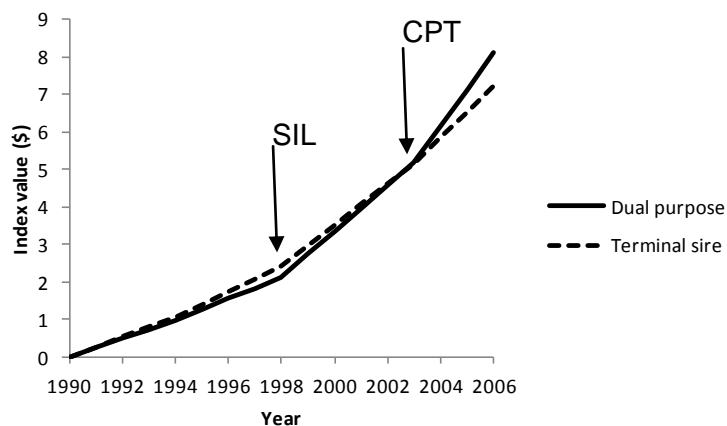
However, the greatest benefits that the Central Progeny Test provides to the New Zealand sheep industry is not through this booklet, but rather in the delivery of new genetic tools and services, including breeding values for new meat yield traits, and in creating and maintaining the necessary genetic connections between flocks that underpin the SIL-ACE analysis (Advanced Central Evaluation).

Significant milestones the Central Progeny Test has achieved over its ten year history are:

- 2002: The Alliance CPT established at AgResearch's Woodlands Research Station. Twelve industry rams used with the aim of evaluating dual purpose and terminal sire rams for growth and meat production based on performance of progeny.
- 2003: Lambs from the first group of sires slaughtered, and the first across-breed breeding values for meat production traits calculated.
- 2004: Lincoln University's Ashley Dene farm added as a second site in the Alliance CPT. Heritabilities for Alliance's VIAscan meat yield measurements presented for the first time. Results from first SIL-ACE analysis run were released on SIL's website.
- 2005: First time ewe lambs from dual purpose sires were retained to collect data for maternal performance breeding values.
- 2006: Meat & Wool New Zealand became principle investor in Central Progeny Test. On-Farm Research's Poukawa Research Station in Hawkes Bay was added as third Central Progeny Test site. Data collected in Poukawa Elite Lamb programme (1998-2004) added to Central Progeny Test dataset. First breeding values for maternal traits calculated.
- 2007: Faecal eczema breeding values added to results.
- 2008: Sufficient data had accumulated to undertake analysis of the genetic relationships between meat quality traits and growth traits.
- 2009: Semen from a group of leading Romney sires from the 1980s used in the Central Progeny Test to benchmark 1980 Romney genetics against 'current' genetics.
- 2011: Hogget oestrus information collected in Central Progeny Test analysed and results presented.

Meat yield data collected in the B+LNZ Central Progeny Test have been analysed to re-evaluate the genetic basis of growth and meat yield, leading to development of a new meat yield evaluation module in the SIL genetic engine. Prior to this data becoming available, the genetic parameters used by SIL to calculate meat breeding values were based on field studies of Romney and Romney cross animals from the late 1970s when average carcass weight was 13kg and average eye muscle area was 9cm². Information from the Central Progeny Test better represents the types of animals and carcass weights from New Zealand sheep farms today.

In addition to using the Central Progeny Test data to produce breeding values better suited to the current yield based grading systems, the genetic connections between breeds and breed groups created by the Central Progeny Test have enabled a national across flock and across breed analysis to be run, the SIL-ACE evaluation. SIL-ACE requires good genetic connections between sire reference groups in the New Zealand sheep industry. Prior to the Central Progeny Test, genetic connections within breeds were reasonable but connections between breeds were poor. The Central Progeny Test has created and maintained genetic connections between breeds and breed groups, and has stimulated across breed genetic connections to be made in other places.



National genetic trends for overall Dual Purpose and Terminal Sire indexes are shown above, with the times marked when SIL and the Central Progeny Test were established. Rates of genetic gain increased after introduction of SIL, and increased again in the period after the first Central Progeny Test results were released. It is impossible to say how much of the increase in index value from 2003 onwards is directly due to the Central Progeny Test and how much is due to other initiatives undertaken in this period. However, it is fair to say the Central Progeny Test has stimulated a lot of interest in sire referencing and progeny testing which indirectly benefits genetic improvement in industry.

Finally, the animals evaluated in the B+LNZ Central Progeny Test represent a unique sampling of the New Zealand sheep industry, with leading sires from a wide range of breeds and strains represented in the dataset. As such, there has been considerable interest from other parties in using samples or data from Central Progeny Test animals in a wide range of research programmes. Permission has only been granted where there has been considered significant benefit of the 'add-on programme' to the New Zealand sheep industry. Examples of programmes that have used samples collected from Central Progeny Test animals include those studying greenhouse gas production, meat quality and wool quality. A total of 17 add-on projects have been completed over the first ten years of the Central Progeny Test.

The B+LNZ Central Progeny Test has delivered significant direct and indirect benefits to the New Zealand sheep industry over its ten year history. Ram breeders have benefited through being provided new breeding values which better reflect current selection goals and from a nationwide analysis. Commercial farmers have benefited through being able to buy rams with improved genetics, which deliver faster growing lambs with higher yielding carcasses, increased ewe fecundity, and reduced impact of key diseases, including internal parasites.

ANIMAL MANAGEMENT PROCEDURES

To date, a total of 234 sires from 22 terminal and 12 dual purpose breeds or composites have been evaluated in the B+LNZ Central Progeny Test (formerly the M&WNZ Central Progeny Test, and before that the Alliance CPT[®]). There are some differences in animal management across the three sites that reflect differences in geographical location and average performance of the ewe flock at each site. However, wherever possible animal management procedures are the same across sites. Following is a brief summary of management procedures applied across sites.

Mating

The aim across the three Central Progeny Test sites is to have at least 20 progeny per sire for the evaluation of a sire's meat and growth performance for both terminal and dual purpose sires, and 25 ewe progeny retained for maternal evaluations of the dual purpose sires. Numbers of ewes allocated varies between sites due to differences in fertility in the ewe flocks. All ewes are synchronised for mating using CIDRs, whether mated naturally or by AI.

Lambing

Flocks are split into single-bearing and multiple-bearing mobs prior to lambing. Lambs are tagged and weighed within 12 hours of birth. Sex, birth rank and rearing rank are recorded at the same time. At some sites, the smallest triplet is mothered onto a single bearing ewe.

Docking

Lambs are vaccinated for diseases and conditions that are relevant to each site. Live weights are collected at docking. Lambing mobs are usually joined together at docking and the grazing mob is recorded.

Weaning

Weaning occurs at 12 weeks of age. Live weight is recorded at weaning and a faecal sample collected to measure faecal egg count. Lambs are also dag scored at this time. Lambs which remain after weaning (the first draft for slaughter occurs at weaning) are drenched with an oral anthelmintic.

Drafting for meat and growth performance assessment

All lambs from the terminal sires are drafted for slaughter once they reach the target live weight to achieve a carcass weight of 18kg. All ram lamb progeny, plus surplus ewe lamb progeny from the dual purpose sires, are slaughtered. The first draft occurs at weaning, followed by drafts at monthly intervals thereafter. All remaining slaughter lambs are drafted at the March slaughter. Measurements collected at slaughter include the VIAscan[®] measurements of lean weight in the hindleg, loin and shoulder, dressing percentage, eye muscle area, meat and fat colour and meat pH.

Ewe maternal performance assessment for dual purpose sires

Some ewe lambs from dual purpose sires are retained for evaluation of maternal traits. Date of first oestrus is recorded in hoggets and they are mated as two-tooths and four-tooths. Number of lambs born and lamb survival are recorded at each lambing. No further data are recorded on the ewes after the four-tooth lambing results are collected.

Timetable of events for key dates at the three Central Progeny Test sites for 2011/2012

Event	Poukawa	Ashley Dene	Woodlands
Start of mating	2 March	31 March	11 April
Start of lambing	19 July	22 August	2 September
Docking	At birth	10 September	29 September
Weaning	7 November	2 December	12 December
First draft	22 November	7 December	14 December
Second draft	1 February	18 January	25 January
Third draft	19 March	16 February	29 February

FUTURE OF THE CENTRAL PROGENY TEST

This issue of the Beef + Lamb New Zealand Central Progeny Test results marks ten years of results from this initiative. It is timely to reflect on what we want from this investment for the future benefit of our sheep industry.

Beef + Lamb New Zealand is reviewing goals of the Central Progeny Test to extract more value from the investment. One option being considered is whether we should have one or more test sites in hill country given the significant proportion of sheep farms there.

While this booklet doesn't show it explicitly, a key contribution that the Central Progeny Test makes to industry, is through underpinning SIL-ACE evaluations, SIL's largest across flock group, in which about 65% of the animals added to SIL each year considered. Without key genetic connections made by the Central Progeny Test, we would not be able to genetically connect so many flocks and breeding groups in one analysis.

SIL-ACE is a work in progress. We want to get more flocks involved, more traits evaluated and more people using the results. The Central Progeny Test plays a lead role in this, through collecting critical data and providing opportunities to showcase traits that may be new to some farmers. Demonstrating the opportunities genetics offers to enhance flock performance is a key role of the Central Progeny Test. SIL **eSearch** tools (www.sil.co.nz) allow users to search through the latest SIL-ACE results using criteria they specify for genetic merit.

We want to hear your ideas as well. What do you think are priorities for sheep genetics work, or other aspects of sheep production in New Zealand? It may be that these could be incorporated into future plans or become add-on projects for the Central Progeny Test. Please take the opportunity to contact us about this, using the contact details given below.

Sire entry into the Central Progeny Test

A call is made for expressions of interest to supply rams to the Central Progeny Test every November. All SIL flocks actively recording performance in New Zealand receive notification of this. Individual ram selection is left to the breeder(s), but spaces are allocated on the basis of:

- widespread use of the ram across SIL flocks with existing across flock information available
- providing stronger connections across groups of flocks to enhance validity of across-flock analyses based on Central Progeny Test flock data
- availability of meat yield performance information (e.g. ultrasonic eye muscle measurements) for the individual ram and his relatives in SIL recorded flocks

Alternatively, rams can be entered into the Central Progeny Test on a cost-recovery basis: \$5,000 per terminal sire and \$15,000 per dual purpose sire.

Additional traits

The Management Committee will consider adding further traits, if they are of sufficient value to the sheep industry to justify cost of their inclusion. Currently dag score and breech/belly bareness are being recorded and will be included in future reports when enough information is available to produce reliable results.

Add-on projects

To date the unique genetic resources of the Central Progeny Test have been used for more than 20 add-on projects. These projects will continue to be an important contribution from the Central Progeny Test to advances in the sheep industry.

Genetic connectedness between breeding groups

Permission has been given to several breeding groups to use Central Progeny Test data to improve genetic connections between flocks in their groups. Any group wishing to use the CPT data in this way should get their SIL Across Flock Report Manager to apply to SIL for access to CPT flock data for this purpose (contact details below).

To provide comment or to get further information including the source of individual rams, or if you want results presented to a farmer meeting, contact Mark Young mark.young@beeflambnz.com Phone (03) 357 0694



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