beef+lamb new zealand

Central Progeny Test Results

2009-10

with the support of

Alliance Group

in conjunction with

ABACUSBIO LIMITED

agresearch

Lincoln University
Te Whare Wānaka o Aoraki
CHRISTCHURCH•NEW ZEALAND
New Zealand's specialist land-based university

On-Farm Research

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KEY:

Sites:
A = Ashley Dene
W = Woodlands
P = Poukawa

Years:

98 = 1998/1999 season	04 = 2004/2005 season
99 = 1999/2000 season	05 = 2005/2006 season
00 = 2000/2001 season	06 = 2006/2007 season
01 = 2001/2002 season	07 = 2007/2008 season
02 = 2002/2003 season	08 = 2008/2009 season
03 = 2003/2004 season	09 = 2009/2010 season

BV	Breeding value	**GGT21**	Facial Eczema
EMA	Eye Muscle Area	**NLB**	Number of lambs born
FEC or Worm FEC	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 top 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®.

For information relating to the Beef + Lamb New Zealand Central Progeny Test, information on the source of individual rams, or if you want Central Progeny Test results presented to a farmer's meeting, contact:

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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 sires) that 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 used 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/Latest-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. The 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.

Changes to the presentation of results for 2009/2010 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 was introduced two years ago, whereby rams that are older than ten years of age **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 for breeding value has been changed from "BV" to "eBV" (for "estimated breeding value") in this booklet. This is because breeding values based on DNA tests ("molecular breeding values") are being released and there is the need to distinguish between the different types of breeding value.

Accuracies of breeding values are also presented this year for all breeding values. They appear in parentheses beside the breeding value in the tables. Information on what accuracies are and how they are to be used is included in an article on page 17 entitled "Breeding Value Accuracies".

There is a new summary table for dual purpose rams this year. It lists the top 19 rams on the basis of their dual purpose performance. The table includes the "Dual Purpose Production" (DPP) index, 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 table of the top 20 dual purpose and terminal sire rams overall. They will continue to be measured so that the genetic relationships between these quality traits and growth and yield traits can be monitored.

In all of the dual purpose results tables (with the exception of the number of lambs born table) there is a ram called "1980s Sires". These are the average results 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, rams used in the Elite Lamb programme at Poukawa from 1998 to 2004 have been included for the evaluation of growth. A total of 193 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 higher values are more likely to be for terminal sire rams.

A breeding index is simply a way of adding together the breeding values for a number of traits, but 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.

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 the do not meet the Central Progeny Test aging policy.

Central Progeny Test results are also available to download on the B+LNZ website (www.beeflambnz.co.nz; follow the links “Farm”, “Genetics” and Central Progeny Test” results.

CENTRAL PROGENY TEST GROWTH INDEX ($)

Terminal: **Range: -$1.14 to $3.94**

TAG	Flock	Breed	Sites	Progeny	Growth Index	Rank
296/05	**Waikite / Esselmont & Tamlet**	**Texel**	**A09**	**33**	**$3.94**	***1***
241/04	Ohio Poll Dorset	Poll Dorset	A08	37	$3.51	*2*
447/03	**Blackdale Stud**	**Texel**	**P06**	**43**	**$3.49**	***3***
570/06	MegaMeat Glengarry	Poll Dorset	P08	98	$3.21	*4*
***128/97**	**Punchbowl**	**Suffolk**	**W03**	**38**	**$3.00**	***5***
341/05	Premier Suffolk	Suffolk	W09	37	$2.99	*6*
17/02	**Tyanee**	**Suffolk**	**P06**	**106**	**$2.98**	***7***
4012/99	Bilberry Oaks	Hampshire	W02 W03	55	$2.93	*8*
430/03	**Glengarry**	**Poll Dorset**	**A05 P05 W05**	**126**	**$2.93**	***9***
299/01	Ohio Poll Dorset	Poll Dorset	A04	39	$2.74	*10*
25/99	**Tyanee**	**Suffolk**	**Link sire**	**735**	**$2.73**	***11***
402/07	MegaMeat Glengarry	Poll Dorset	P09	113	$2.54	*12*
211/98	**Kurralea**	**Poll Dorset**	**W02**	**28**	**$2.50**	***13***
767/99	Darenal	Dorset Down	A03	14	$2.45	*14*
275/04	**Goldstream**	**Suffolk**	**A07**	**53**	**$2.43**	***15***
33/04	Myola	South Suffolk	P06	60	$2.39	*16*
231/97	**Bankhead**	**Southdown**	**A05**	**53**	**$2.36**	***17***
3091/03	One Stop Ram Shop	Texel/Suffolk	P09	36	$2.22	*18*
1010/03	**Punchbowl**	**Suffolk**	**W07**	**34**	**$2.19**	***19***
120/00	Glendhu	Dorset Down	W03	34	$2.14	*20*
***419/96**	**Punchbowl**	**Suffolk**	**W02**	**13**	**$2.08**	***21***
X0050/87	Sheepac	Oxford	W03	31	$2.05	*22*
61/04	**Twin Farm**	**Suffolk**	**W06**	**31**	**$2.00**	***23***
35/01	Glengarry	Poll Dorset	A03 W03	39	$1.96	*24*
14/07	**Torresdale (NZ Suffolk)**	**Suffolk**	**A09**	**39**	**$1.95**	***25***

Dual Purpose: **Range: -$3.66 to $2.63**

TAG	Flock	Breed	Sites	Progeny	Growth Index	Rank
D110/04	**Blackdale Stud**	**Textra**	**W07**	**85**	**$2.63**	***1***
2165/97	Wairere	Romney	W02 W03 A04	127	$1.03	*2*
50394/06	**Kelso**	**Kelso Composite**	**A08 W09**	**109**	**$1.01**	***3***
409/06	Blythburn	Romney	W09	69	$0.98	*4*
742/04	**Cairnlea**	**Coopworth**	**W07**	**79**	**$0.85**	***5***
245/04	Tamlet	Coopworth	W09	70	$0.84	*6*
23253/05	**Longdowns**	**Composite**	**W08**	**70**	**$0.69**	***7***
232/01	TRIGG	Romney	W03	21	$0.57	*8*
542/04	**Hazeldale**	**Perendale**	**W06**	**66**	**$0.33**	***9***
1233/02	SRDG Romney	Romney	W08	34	$0.23	*10*
777/05	**Tamlet**	**Coopworth**	**W08**	**80**	**$0.17**	***11***
301/04	Hazeldale	Perendale	A08	51	$0.16	*12*
5093/99	**Meadowslea**	**Romney**	**A03**	**24**	**$0.14**	***13***
426/99	Mt Guardian	Perendale	W03	22	$0.14	*14*
HG552/02	**Clifton**	**Corriedale**	**A05**	**123**	**$0.09**	***15***
55/01	Bonnieview	Perendale	W05	60	$0.07	*16*
D611/04	**Glenovis**	**Corriedale**	**A07**	**95**	**$0.03**	***17***
1218/06	Hinenui	Coopworth	A09	71	$0.03	*18*
1227/06	**Ngaputahi**	**Growbulk**	**P09**	**151**	**-$0.03**	***19***
300/03	MNCC	Coopworth	W05	67	-$0.06	*20*
358/04	**MNCC**	**Coopworth**	**P07**	**99**	**-$0.08**	***21***
2247/04	Rosedale	Growbulk	W07	74	-$0.09	*22*
833/02	**Tamlet**	**Coopworth**	**W05 W06**	**133**	**-$0.10**	***23***
493/00	Hazeldale	Perendale	W03	23	-$0.15	*24*
97/02	**Raywell**	**Borderdale**	**A03 A04**	**79**	**-$0.20**	***25***
5 sires	1980s sires	Romney	W07	32	-$2.53	84

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

CENTRAL PROGENY TEST MEAT VALUE INDEX ($)

Terminal: **Range: -$2.17 to $5.52**

TAG	Flock	Breed	Sites	Progeny	Meat Value Index	Rank
530/05	**Grasmere**	**Texel**	**P08**	**39**	**$5.52**	***1***
299/00	Landcorp Waikite	Texel	W02 W03	58	$3.55	*2*
110/03	**Murray Downs**	**Texel**	**W05**	**37**	**$2.80**	***3***
275/04	Goldstream	Suffolk	A07	54	$2.78	*4*
114/03	**Landcorp Kepler**	**Lamb Supreme**	**A05**	**33**	**$2.47**	***5***
101/03	Landover	Texel	W07	21	$2.46	*6*
XA2/99	**The Burn**	**Texel**	**W02**	**22**	**$2.41**	***7***
52/04	Mount Linton	Suftex	W06	32	$2.26	*8*
911/99	**Murray Downs**	**Texel**	**W03**	**31**	**$2.12**	***9***
44/02	WTD	Texel	P05	50	$2.05	*10*
296/05	**Waikite / Esselmont & Tamlet**	**Texel**	**A09**	**32**	**$1.99**	***11***
1296/03	Mount Linton	Texel Cross	W05	41	$1.97	*12*
299/01	**Ohio Poll Dorset**	**Poll Dorset**	**A04**	**34**	**$1.96**	***13***
400/00	Brandes Burton	Texel	W02 W04	62	$1.94	*14*
570/06	**MegaMeat Glengarry**	**Poll Dorset**	**P08**	**83**	**$1.87**	***15***
122/05	Blackdale Stud	Texel	W08	40	$1.79	*16*
60159/07	**Kelso**	**Kelso Ranger**	**A09**	**36**	**$1.68**	***17***
48/05	Premier Suffolk	Suffolk	W08	37	$1.67	*18*
1694/05	**Landcorp Kepler**	**Lamb Supreme**	**P09**	**28**	**$1.54**	***19***
70/01	Torresdale (NZ Suffolk)	Suffolk	W05	40	$1.52	*20*
3091/03	**One Stop Ram Shop**	**Texel/Suffolk**	**P09**	**33**	**$1.51**	***21***
021/01	Broken Hut	Texel	A03	29	$1.51	*22*
269/04	**Dorper**	**Dorper**	**W08**	**41**	**$1.46**	***23***
T210/04	Wharetoa	Meatmaker	W06	34	$1.39	*24*
25/99	**Tyanee**	**Suffolk**	**Link sire**	**677**	**$1.39**	***25***

Dual Purpose: **Range: -$3.21 to $3.36**

TAG	Flock	Breed	Sites	Progeny	Meat Value Index	Rank
D110/04	**Blackdale Stud**	**Textra**	**W07**	**39**	**$3.36**	***1***
50394/06	Kelso	Kelso Composite	A08 W09	51	$2.24	*2*
4203/02	**Kelso**	**Kelso**	**P06**	**39**	**$1.41**	***3***
386/03	Rene	Perendale	A07	33	$1.27	*4*
569/07	**Longview Perendale**	**Perendale**	**P09**	**84**	**$1.05**	***5***
88/02	TRIGG	Romney	W05	26	$1.01	*6*
23253/05	**Longdowns**	**Composite**	**W08**	**21**	**$0.93**	***7***
431/04	Twin Farm	TEFRom	W07	22	$0.89	*8*
179/07	**Wattlebank**	**Corriedale**	**A09**	**34**	**$0.88**	***9***
401/05	Hazeldale	Perendale	W08	38	$0.71	*10*
1227/06	**Ngaputahi**	**Growbulk**	**P09**	**82**	**$0.70**	***11***
542/04	Hazeldale	Perendale	W06	29	$0.70	*12*
358/04	**MNCC**	**Coopworth**	**P07**	**43**	**$0.62**	***13***
132/01	Kelso	Kelso	W03	31	$0.48	*14*
1218/06	**Hinenui**	**Coopworth**	**A09**	**34**	**$0.47**	***15***
11/01	Little River	Cheviot	A03 W03	60	$0.28	*16*
301/04	**Hazeldale**	**Perendale**	**A08**	**21**	**$0.28**	***17***
435/98	Kelso	Kelso	W02	29	$0.27	*18*
781/00	**Shoreford**	**Romney**	**W03**	**30**	**$0.27**	***19***
138/01	Edale	Growbulk	A03	34	$0.27	*20*
55/01	**Bonnieview**	**Perendale**	**W05**	**20**	**$0.25**	***21***
574/06	Kylemore	Perendale	A08	21	$0.22	*22*
34/01	**Twin Farm**	**TEFRom**	**W03 W06**	**51**	**$0.15**	***23***
107/97	Strathblane	Corriedale	A03	15	$0.10	*24*
774/02	**Flockton**	**Perendale**	**A04**	**37**	**$0.09**	***25***
5 sires	1980s sires	Romney	W07	18	-$0.62	*48*

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: -4.46 to 4.69**

TAG	Flock	Breed	Sites	Progeny	WWT eBV (Acc)	Rank
17/02	**Tyanee**	**Suffolk**	**P06**	**106**	**4.69 (88)**	***1***
296/05	Waikite / Esselmont & Tamlet	Texel	A09	33	4.39 (75)	*2*
447/03	**Blackdale Stud**	**Texel**	**P06**	**43**	**4.12 (80)**	***3***
341/05	Premier Suffolk	Suffolk	W09	37	3.80 (77)	*4*
25/99	**Tyanee**	**Suffolk**	**Link sire**	**735**	**3.59 (98)**	***5***
231/97	Bankhead	Southdown	A05	53	3.46 (82)	*6*
33/04	**Myola**	**South Suffolk**	**P06**	**60**	**3.36 (84)**	***7***
430/03	Glengarry	Poll Dorset	A05 P05 W05	126	3.35 (91)	*8*
402/07	**MegaMeat Glengarry**	**Poll Dorset**	**P09**	**113**	**3.34 (89)**	***9***
767/99	Darenal	Dorset Down	A03	14	3.26 (78)	*10*
***128/97**	**Punchbowl**	**Suffolk**	**W03**	**38**	**3.24 (86)**	***11***
211/98	Kurralea	Poll Dorset	W02	28	3.20 (83)	*12*
4012/99	**Bilberry Oaks**	**Hampshire**	**W02 W03**	**55**	**3.18 (85)**	***13***
570/06	MegaMeat Glengarry	Poll Dorset	P08	98	3.14 (88)	*14*
1010/03	**Punchbowl**	**Suffolk**	**W07**	**34**	**2.99 (77)**	***15***
X0050/87	Sheepac	Oxford	W03	31	2.92 (77)	*16*
***419/96**	**Punchbowl**	**Suffolk**	**W02**	**13**	**2.90 (78)**	***17***
241/04	Ohio Poll Dorset	Poll Dorset	A08	37	2.79 (77)	*18*
3091/03	**One Stop Ram Shop**	**Texel/Suffolk**	**P09**	**36**	**2.77 (78)**	***19***
77/95	Douglas Downs	Dorset Horn	W02 W04	121	2.76 (91)	*20*
275/04	**Goldstream**	**Suffolk**	**A07**	**53**	**2.71 (81)**	***21***
236/07	Pahiwi	Suffolk	P09	100	2.62 (88)	*22*
14/07	**Torresdale (NZ Suffolk)**	**Suffolk**	**A09**	**39**	**2.45 (78)**	***23***
169/02	Ohio Poll Dorset	Poll Dorset	W06	37	2.41 (77)	*24*
514/00	**Linton**	**Poll Dorset**	**W04**	**46**	**2.41 (81)**	***25***

Dual Purpose: **Range: -4.46 to 3.08**

TAG	Flock	Breed	Sites	Progeny	WWT eBV (Acc)	Rank
D110/04	**Blackdale Stud**	**Textra**	**W07**	**85**	**3.08 (88)**	***1***
409/06	Blythburn	Romney	W09	69	1.77 (85)	*2*
742/04	**Cairnlea**	**Coopworth**	**W07**	**79**	**1.70 (88)**	***3***
232/01	TRIGG	Romney	W03	21	1.37 (71)	*4*
50394/06	**Kelso**	**Kelso Composite**	**A08 W09**	**109**	**1.17 (90)**	***5***
1233/02	SRDG Romney	Romney	W08	34	1.14 (78)	*6=*
245/04	**Tamlet**	**Coopworth**	**W09**	**70**	**1.14 (85)**	***6=***
2165/97	Wairere	Romney	W02 W03 A04	127	1.05 (92)	*8*
HG552/02	**Clifton**	**Corriedale**	**A05**	**123**	**0.93 (90)**	***9***
D611/04	Glenovis	Corriedale	A07	95	0.90 (87)	*10*
23253/05	**Longdowns**	**Composite**	**W08**	**70**	**0.81 (86)**	***11=***
833/02	Tamlet	Coopworth	W05 W06	133	0.81 (92)	*11=*
531/98	**Wharetoa**	**Coopworth**	**W03**	**48**	**0.70 (84)**	***13***
542/04	Hazeldale	Perendale	W06	66	0.57 (86)	*14*
97/02	**Raywell**	**Borderdale**	**A03 A04**	**79**	**0.52 (88)**	***15***
2247/04	Rosedale	Growbulk	W07	74	0.48 (88)	*16*
5093/99	**Meadowslea**	**Romney**	**A03**	**24**	**0.44 (72)**	***17***
781/00	Shoreford	Romney	W03	43	0.40 (83)	*18*
358/04	**MNCC**	**Coopworth**	**P07**	**99**	**0.28 (89)**	***19=***
1227/06	Ngaputahi	Growbulk	P09	151	0.28 (91)	*19=*
4334/07	**Landcorp Waihora**	**Romney**	**W09**	**43**	**0.23 (81)**	***21***
4399/06	Landcorp Waihora	Romney	P08	63	0.21 (85)	*22*
107/97	**Strathblane**	**Corriedale**	**A03**	**15**	**0.18 (66)**	***23***
55/01	Bonnieview	Perendale	W05	60	0.17 (86)	*24*
512/05	**Kamahi**	**Perendale**	**W07**	**28**	**0.09 (77)**	***25=***
301/04	Hazeldale	Perendale	A08	51	0.09 (82)	*25=*
5 sires	**1980s sires**	**Romney**	**W07**	**32**	**-3.50 (79)**	***87***

**SIL eBV. The average weaning weight was 29.6kg*

WORMFEC EBV* (%)

Terminal: **Range: -39.12% to 93.8%**

TAG	Flock	Breed	Sites	Progeny	WormFEC eBV (Acc)	Rank
299/00	**Landcorp Waikite**	**Texel**	**W02 W03**	**26**	**-39.12 (76)**	***1***
E-140/00	Turnberry	Composite	W02	10	-39.06 (57)	*2*
44/02	**WTD**	**Texel**	**P05**	**14**	**-30.86 (58)**	***3***
3/04	Egilshay	Texel	A08	32	-24.76 (71)	*4*
77/95	**Douglas Downs**	**Dorset Horn**	**W02 W04**	**23**	**-21.78 (75)**	***5***
61/97	Oringi	Oxford Down	A04	32	-21.29 (74)	*6*
167/02	**MEBA**	**Texel**	**W04**	**16**	**-21.26 (70)**	***7***
110/03	Murray Downs	Texel	W05	16	-21.06 (60)	*8*
9/03	**Pahiwi**	**Suffolk**	**P05**	**15**	**-20.60 (61)**	***9***
X0050/87	Sheepac	Oxford	W03	11	-20.27 (58)	*10*
49/05	**MegaMeat**	**Poll Dorset**	**P07**	**16**	**-17.53 (61)**	***11***
252/05	Brandes Burton	Texel	W09	14	-17.39 (58)	*12*
19/03	**Tasvic Downs**	**Southdown**	**P05**	**15**	**-16.65 (59)**	***13***
929/00	Craig Annat	South Suffolk	W02	10	-15.39 (58)	*14*
65/03	**Pahiwi**	**Suffolk**	**A06**	**36**	**-15.35 (74)**	***15***
165/00	Torresdale (NZ Suffolk)	Suffolk	W02	7	-13.81 (53)	*16*
18/02	**Brandes Burton**	**Texel**	**A07**	**25**	**-13.06 (67)**	***17***
14/07	Torresdale (NZ Suffolk)	Suffolk	A09	16	-11.56 (60)	*18*
62/02	**Silverstream**	**Dorset Down**	**W05**	**16**	**-11.49 (60)**	***19***
127/05	Douglas Downs	Poll Dorset	W07	16	-11.46 (62)	*20*
911/99	**Murray Downs**	**Texel**	**W03**	**16**	**-11.28 (67)**	***21***
400/00	Brandes Burton	Texel	W02 W04	26	-9.57 (71)	*22*
78/02	**Lincoln**	**Dorset Down**	**W04**	**16**	**-8.35 (59)**	***23***
120/00	Glendhu	Dorset Down	W03	16	-8.17 (65)	*24*
48/05	**Premier Suffolk**	**Suffolk**	**W08**	**16**	**-7.75 (61)**	***25***

Dual Purpose: **Range: -60.43% to 86.6%**

TAG	Flock	Breed	Sites	Progeny	WormFEC eBV (Acc)	Rank
386/03	**Rene**	**Perendale**	**A07**	**25**	**-60.43 (71)**	***1***
722/03	Rose Mains	Perendale	W05	16	-50.75 (72)	*2*
649/01	**ARDG Romney**	**Romney**	**P06**	**8**	**-43.97 (53)**	***3***
4014/96	Waihora	Romney	W04	16	-41.54 (68)	*4*
1127/95	**Awareka**	**Romney**	**W03**	**14**	**-40.49 (63)**	***5***
5 sires	1980s sires	Romney	W07	16	-40.48 (68)	*6*
348/06	**Sponsored Romney**	**Romney**	**A08**	**58**	**-40.18 (78)**	***7***
4203/02	Kelso	Kelso	P06	8	-38.38 (52)	*8*
JL1695/1	**WRIG**	**Romney**	**P05**	**13**	**-35.23 (57)**	***9***
417/04	ARDG	Romney	P08	34	-32.78 (52)	*10*
1035/02	**Newhaven**	**Perendale**	**W04**	**16**	**-31.84 (72)**	***11***
50394/06	Kelso	Kelso Composite	A08 W09	37	-31.51 (77)	*12*
664/98	**ARDG Elite**	**Romney**	**W03**	**15**	**-31.22 (64)**	***13***
850/00	Hillcrest	Perendale	W03	16	-30.87 (66)	*14*
300/03	**MNCC**	**Coopworth**	**W05**	**16**	**-30.65 (71)**	***15***
706/00	Lincoln	Coopworth	link sire	405	-28.29 (97)	*16*
574/06	**Kylemore**	**Perendale**	**A08**	**28**	**-28.09 (70)**	***17***
34/02	Wai-Iti Romneys	Romney	P06	8	-27.61 (53)	*18*
1617/04	**Awareka**	**Romney**	**W07**	**16**	**-27.16 (74)**	***19***
132/01	Kelso	Kelso	W03	16	-26.04 (65)	*20*
147/01	**Tresco**	**Romney**	**W05**	**17**	**-24.92 (67)**	***21***
D110/04	Blackdale Stud	Textra	W07	16	-24.90 (74)	*22*
5093/99	**Meadowslea**	**Romney**	**A03**	**16**	**-23.94 (61)**	***23***
179/07	Wattlebank	Corriedale	A09	27	-18.86 (69)	*24*
1235/00	**Strathblane**	**Corriedale**	**A04**	**42**	**-18.28 (79)**	***25***

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

EYE MUSCLE AREA EBV (cm^2)

Terminal: **Range: -1.02 to 3.58**

TAG	Flock	Breed	Sites	Progeny	EMA eBV(Acc)	Rank
299/00	**Landcorp Waikite**	**Texel**	**W02 W03**	**58**	**3.58 (95)**	***1***
299/01	Ohio Poll Dorset	Poll Dorset	A04	34	3.15 (91)	*2*
114/03	**Landcorp Kelper**	**Landcorp Lamb Supreme**	**A05**	**33**	**3.06 (91)**	***3***
2002/02	Mount Linton	Texel Cross	A04	34	2.66 (91)	*4*
34/06	**Southern Poll Dorset**	**Poll Dorset**	**W08**	**50**	**2.57 (91)**	***5***
1694/05	Landcorp Kepler	Lamb Supreme	P09	28	2.57 (89)	*6*
530/05	**Grasmere**	**Texel**	**P08**	**39**	**2.42 (90)**	***7***
570/06	MegaMeat Glengarry	Poll Dorset	P08	83	2.41 (94)	*8*
91892/05	**Kelso**	**Kelso Ranger**	**P08**	**52**	**2.32 (92)**	***9***
106/99	Ohio Poll Dorset	Poll Dorset	W02	45	2.31 (92)	*10*
127/05	**Douglas Downs**	**Poll Dorset**	**W07**	**32**	**2.30 (88)**	***11***
021/01	Broken Hut	Texel	A03	29	1.95 (90)	*12*
T210/04	**Wharetoa**	**Meatmaker**	**W06**	**34**	**1.89 (89)**	***13***
65/03	Pahiwi	Suffolk	A06	53	1.88 (93)	*14=*
3/04	**Egilshay**	**Texel**	**A08**	**69**	**1.88 (93)**	***14=***
430/03	Glengarry	Poll Dorset	A05 P05 W05	117	1.81 (96)	*16*
458/02	**Waikite**	**Texel**	**A06**	**42**	**1.78 (92)**	***17***
485/05	Mount Linton	Texel/Poll Dorset	W09	20	1.78 (85)	*18*
18/02	**Brandes Burton**	**Texel**	**A07**	**60**	**1.72 (93)**	***19***
341/05	Premier Suffolk	Suffolk	W09	37	1.70 (89)	*20*
275/04	**Goldstream**	**Suffolk**	**A07**	**54**	**1.68 (93)**	***21***
89/05	South Suffolk Breeders	South Suffolk	A08	29	1.65 (89)	*22*
19/03	**Tasvic Downs**	**Southdown**	**P05**	**60**	**1.59 (93)**	***23***
110/03	Murray Downs	Texel	W05	37	1.55 (89)	*24*
252/05	**Brandes Burton**	**Texel**	**W09**	**24**	**1.54 (87)**	***25***

Dual Purpose: **Range: -2.85 to 2.27**

TAG	Flock	Breed	Sites	Progeny	EMA eBV (Acc)	Rank
D110/04	**Blackdale Stud**	**Textra**	**W07**	**39**	**2.27 (91)**	***1***
1560/03	The Gree	Greeline	W06	24	2.04 (90)	*2*
23253/05	**Longdowns**	**Composite**	**W08**	**21**	**1.97 (87)**	***3***
138/01	Edale	Growbulk	A03	34	0.91 (90)	*4*
2247/04	**Rosedale**	**Growbulk**	**W07**	**35**	**0.86 (91)**	***5***
722/03	Rose Mains	Perendale	W05	36	0.65 (93)	*6*
5203/04	**Marlow**	**Coopworth**	**W08**	**14**	**0.64 (81)**	***7***
55/01	Bonnieview	Perendale	W05	20	0.54 (89)	*8*
1127/95	**Awareka**	**Romney**	**W03**	**19**	**0.53 (86)**	***9***
542/04	Hazeldale	Perendale	W06	29	0.51 (91)	*10*
426/99	**Mt Guardian**	**Perendale**	**W03**	**19**	**0.36 (87)**	***11***
401/05	Hazeldale	Perendale	W08	38	0.33 (91)	*12*
107/97	**Strathblane**	**Corriedale**	**A03**	**15**	**0.25 (83)**	***13***
85/00	Tahakita	Coopworth	W04 A04	75	0.22 (96)	*14*
11/01	**Little River**	**Cheviot**	**A03 W03**	**60**	**0.16 (94)**	***15***
300/03	MNCC	Coopworth	W05	27	0.15 (91)	*16*
409/06	**Blythburn**	**Romney**	**W09**	**38**	**0.08 (90)**	***17***
569/07	Longview Perendale	Perendale	P09	84	0.07 (94)	*18*
115/05	**ARDG Romney**	**Romney**	**P09**	**51**	**0.02 (92)**	***19***
JL1695/1	WRIG	Romney	P05	36	0.02 (90)	*20*
4203/02	**Kelso**	**Kelso**	**P06**	**39**	**-0.02 (93)**	***21***
435/98	Kelso	Kelso	W02	29	-0.08 (90)	*22*
5 sires	**1980s sires**	**Romney**	**W07**	**18**	**-0.11 (86)**	***23***
214/05	TRIGG Romney	Romney	W08	31	-0.16 (89)	*24*
833/02	**Tamlet**	**Coopworth**	**W05 W06**	**54**	**-0.22 (95)**	***25***

The average eye muscle area was 11.7cm^2.

NUMBER OF LAMBS BORN EBV*

Dual Purpose: **Range: -0.294 to 0.551**

TAG	Flock	Breed	Sites	Daughters lambed	NLB eBV (Acc)	Rank
742/04	**Cairnlea**	**Coopworth**	**W07**	**156**	**0.551 (90)**	***1***
1617/04	Awareka	Romney	W07	157	0.433 (91)	*2*
147/01	**Tresco**	**Romney**	**W05**	**217**	**0.377 (95)**	***3***
300/03	MNCC	Coopworth	W05	276	0.292 (95)	*4*
313/01	**Valley**	**Coopworth**	**W04**	**80**	**0.289 (89)**	***5***
84/04	ARDG Elite	Romney	P07	68	0.287 (82)	*6*
4014/96	**Waihora**	**Romney**	**W04**	**403**	**0.278 (98)**	***7***
1560/03	The Gree	Greeline	W06	107	0.277 (90)	*8*
1035/02	**Newhaven**	**Perendale**	**W04**	**184**	**0.262 (95)**	***9***
358/04	MNCC	Coopworth	P07	99	0.259 (87)	*10*
278/03	**MNCC**	**Coopworth**	**W06**	**70**	**0.234 (85)**	***11***
422/00	Wattlebank	Corriedale	A04 A05	184	0.232 (95)	*12*
431/04	**Twin Farm**	**TEFRom**	**W07**	**104**	**0.217 (88)**	***13***
706/00	Lincoln	Coopworth	Link sire	302	0.213 (95)	*14*
D611/04	**Glenovis**	**Corriedale**	**A07**	**58**	**0.206 (79)**	***15***
722/03	Rose Mains	Perendale	W05	105	0.189 (91)	*16*
18/04	**White Rock**	**Corriedale**	**A06**	**40**	**0.183 (78)**	***17***
2247/04	Rosedale	Growbulk	W07	104	0.182 (87)	*18*
34/01	**Twin Farm**	**TEFRom**	**W03 W06**	**110**	**0.174 (91)**	***19***
457/00	Nithdale	Romney	W06	278	0.152 (96)	*20*
627/01	**TRIGG**	**Romney**	**A06**	**167**	**0.131 (94)**	***21***
833/02	Tamlet	Coopworth	W05 W06	278	0.130 (96)	*22*

**SIL ACE eBV. Results are presented for rams with at least 20 daughters with two-tooth lambing records. Only 44 sires qualify to date.*

FLEECE WEIGHT EBV*

Dual Purpose: **Range: -0.78 to 0.81**

TAG	Flock	Breed	Sites	Progeny	FW12 eBV (Acc)	Rank
742/04	**Cairnlea**	**Coopworth**	**W07**	**40**	**0.81 (85)**	***1***
1832/02	Awareka	Romney	W04 A04	28	0.60 (86)	*2*
313/01	**Valley**	**Coopworth**	**W04**	**32**	**0.53 (86)**	***3***
531/98	Wharetoa	Coopworth	W03	18	0.48 (81)	*4*
278/03	**MNCC**	**Coopworth**	**W06**	**30**	**0.38 (84)**	***5***
706/00	Lincoln	Coopworth	Link sire	224	0.35 (97)	*6*
348/06	**Sponsored Romney**	**Romney**	**A08**	**44**	**0.31 (84)**	***7=***
1617/04	Awareka	Romney	W07	36	0.31 (84)	*7=*
781/00	**Shoreford**	**Romney**	**W03**	**13**	**0.30 (76)**	***9***
5828/02	Waihora	Romney	W04	42	0.28 (88)	*10=*
358/04	**MNCC**	**Coopworth**	**P07**	**46**	**0.28 (83)**	***10=***
4399/06	Landcorp Waihora	Romney	P08	28	0.27 (80)	*12*
5203/04	**Marlow**	**Coopworth**	**W08**	**27**	**0.25 (81)**	***13***
211/99	Blackdale Stud	Coopworth	W03	18	0.23 (80)	*14*
218/02	**Waiohine**	**Romney**	**P07**	**47**	**0.20 (84)**	***15=***
2165/97	Wairere	Romney	W02 W03 A04	4	0.20 (74)	*15=*
833/02	**Tamlet**	**Coopworth**	**W05 W06**	**30**	**0.17 (87)**	***17=***
1233/02	SRDG Romney	Romney	W08	15	0.17 (74)	*17=*
4/06	**Corriedale**	**Corriedale**	**A08**	**21**	**0.16 (78)**	***19***
18/04	White Rock	Corriedale	A06	37	0.13 (84)	*20*
457/00	**Nithdale**	**Romney**	**W06**	**17**	**0.12 (78)**	***21***
512/05	Kamahi	Perendale	W07	13	0.08 (71)	*22*
627/01	**TRIGG**	**Romney**	**A06**	**34**	**0.02 (84)**	***23***
D611/04	Glenovis	Corriedale	A07	39	0.00 (79)	*24*
1560/03	**The Gree**	**Greeline**	**W06**	**29**	**-0.01 (84)**	***25***
5 sires	1980s sires	Romney	W07	10	-0.48 (70)	*71*

**SIL eBV. Breeding values for fleece weight at 12 months of age. Average fleece weight was 3.17kg.*

FACIAL ECZEMA EBV*

Dual Purpose: **Range: -1.06 to 0.99**

TAG	Flock	Breed	Sites	Progeny	GGT21 eBV (Acc)	Rank
649/01	**ARDG Romney**	**Romney**	**P06**	**5**	**-1.06 (90)**	***1***
115/05	ARDG Romney	Romney	P09	5	-0.98 (78)	*2*
4399/06	**Landcorp Waihora**	**Romney**	**P08**	**5**	**-0.93 (87)**	***3***
4334/07	Landcorp Waihora	Romney	W09	5	-0.67 (85)	*4*
179/07	**Wattlebank**	**Corriedale**	**A09**	**5**	**-0.62 (60)**	***5***
358/04	MNCC	Coopworth	P07	5	-0.60 (80)	*6*
214/05	**TRIGG Romney**	**Romney**	**W08**	**5**	**-0.54 (57)**	***7***
34/01	Twin Farm	TEFRom	W03 W06	5	-0.53 (37)	*8*
50394/06	**Kelso**	**Kelso Composite**	**A08 W09**	**5**	**-0.52 (57)**	***9***
278/03	MNCC	Coopworth	W06	5	-0.47 (79)	*10*
5203/04	**Marlow**	**Coopworth**	**W08**	**5**	**-0.47 (79)**	***11***
722/03	Rose Mains	Perendale	W05	5	-0.44 (65)	*12*
4203/02	**Kelso**	**Kelso**	**P06**	**5**	**-0.38 (56)**	***13***
218/02	Waiohine	Romney	P07	5	-0.33 (56)	*14*
348/06	**Sponsored Romney**	**Romney**	**A08**	**5**	**-0.28 (58)**	***15***
569/07	Longview Perendale	Perendale	P09	5	-0.27 (49)	*16*
706/00	**Lincoln**	**Coopworth**	**Link sire**	**60**	**-0.27 (92)**	***17***
55/01	Bonnieview	Perendale	W05	5	-0.26 (75)	*18*
4/06	**Corriedale**	**Corriedale**	**A08**	**5**	**-0.24 (61)**	***19***
417/04	ARDG Romney	Romney	P08	5	-0.24 (83)	*20*
18/04	**White Rock**	**Corriedale**	**A06**	**5**	**-0.20 (56)**	***21***
512/05	Kamahi	Perendale	W07	5	-0.19 (18)	*22*
542/04	**Hazeldale**	**Perendale**	**W06**	**5**	**-0.14 (60)**	***23***
480/04	Viewhill	Romney	A09	5	-0.14 (64)	*24*
301/04	**Hazeldale**	**Perendale**	**A08**	**5**	**-0.13 (62)**	***25***
5 sires	1980s sires	Romney	W07	5	0.00 (8)	*36*

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 five years, so 57 rams have been evaluated to date.

TOP 20 TERMINAL RAMS FOR MEAT AND GROWTH

ID	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**	**39**	**7.27**	**5.52**	**1.75**	**1.32**	**0.1**	**2.42**	**1.6%**	**-0.15**	**0.49**	**-0.01**
296/05	Waikite / Esselmont & Tamlet	Texel	32	5.93	1.99	3.94	4.39	-5.0	1.07	0.2%	-0.16	-0.26	0.01
275/04	**Goldstream**	**Suffolk**	**54**	**5.21**	**2.78**	**2.43**	**2.71**	**93.9**	**1.68**	**-1.5%**	**-0.08**	**0.52**	**0.01**
570/06	MegaMeat Glengarry	Poll Dorset	83	5.08	1.87	3.21	3.14	32.2	2.41	0.8%	-1.26	-0.70	-0.01
299/01	**Ohio Poll Dorset**	**Poll Dorset**	**34**	**4.70**	**1.96**	**2.74**	**1.59**	**73.8**	**3.15**	**0.3%**	**-0.20**	**-1.45**	**0.00**
299/00	Landcorp Waikite	Texel	58	4.50	3.55	0.95	-0.36	-39.1	3.58	2.1%	-0.27	-0.90	0.00
241/04	**Ohio Poll Dorset**	**Poll Dorset**	**34**	**4.39**	**0.88**	**3.51**	**2.79**	**38.4**	**0.88**	**0.2%**	**-0.54**	**-0.03**	**-0.03**
447/03	Blackdale Stud	Texel	37	4.26	0.77	3.49	4.12	-1.3	1.28	0.3%	-0.14	-3.90	0.00
***128/97**	**Punchbowl**	**Suffolk**	**37**	**4.13**	**1.13**	**3.00**	**3.24**	**7.1**	**1.33**	**-0.5%**	**-1.37**	**-1.48**	**0.07**
25/99	Tyanee	Suffolk	677	4.12	1.39	2.73	3.59	-6.7	0.38	-1.0%	-0.84	2.18	0.03
341/05	**Premier Suffolk**	**Suffolk**	**37**	**4.09**	**1.10**	**2.99**	**3.80**	**8.7**	**1.70**	**0.1%**	**0.08**	**-0.54**	**0.01**
3091/03	One Stop Ram Shop	Texel/Suffolk	33	3.73	1.51	2.22	2.77	14.2	-1.00	-1.3%	0.32	-0.41	0.01
430/03	**Glengarry**	**Poll Dorset**	**117**	**3.59**	**0.66**	**2.93**	**3.35**	**30.7**	**1.81**	**0.5%**	**-0.71**	**-1.76**	**-0.02**
48/05	Premier Suffolk	Suffolk	37	3.59	1.67	1.92	2.13	-7.8	0.12	0.1%	-0.36	-0.23	0.00
911/99	**Murray Downs**	**Texel**	**31**	**3.59**	**2.12**	**1.47**	**0.67**	**-11.3**	**1.13**	**1.3%**	**-0.62**	**-0.49**	**0.02**
101/03	Landover	Texel	21	3.58	2.46	1.12	0.16	-7.4	1.09	1.1%	-0.76	0.20	0.00
114/03	**Landcorp Kepler**	**Landcorp Lamb Supreme**	**33**	**3.32**	**2.47**	**0.85**	**1.76**	**13.7**	**3.06**	**-0.5%**	**-0.63**	**2.82**	**0.02**
44/02	WTD	Texel	50	3.32	2.05	1.27	1.51	-30.9	-0.36	0.3%	-0.76	-1.21	0.04
1694/05	**Landcorp Kepler**	**Landcorp Lamb Supreme**	**28**	**3.23**	**1.54**	**1.69**	**2.17**	**3.4**	**2.57**	**-1.3%**	**-1.42**	**-0.56**	**0.02**
1296/03	Mount Linton	Texel Cross	41	3.20	1.97	1.23	1.28	34.7	0.43	0.1%	-0.94	-1.62	0.03

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

TOP 20 DUAL PURPOSE RAMS FOR MEAT AND GROWTH

ID	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	NLB eBV	FW12 eBV (kg)	FE eBV
D110/04	**Blackdale Stud**	**Textra**	**39**	**5.99**	**3.36**	**2.63**	**3.08**	**-24.9**	**2.27**	**0.9%**	**-0.41**	**-1.33**	**0.03**	**-0.05**	**-0.77**	**-0.09**
50394/06	Kelso	Kelso Composite	51	3.25	2.24	1.01	1.17	-31.5	-1.05	0.0%	-0.64	-0.65	0.09		-0.53	-0.52
23253/05	**Longdowns**	**Composite**	**21**	**1.62**	**0.93**	**0.69**	**0.81**	**16.0**	**1.97**	**0.0%**	**-0.63**	**0.38**	**-0.02**		**-0.08**	**0.04**
542/04	Hazeldale	Perendale	29	1.03	0.70	0.33	0.57	-1.5	0.51	-0.4%	0.16	1.19	-0.02	0.13	-0.46	-0.14
409/06	**Blythburn**	**Romney**	**38**	**0.99**	**0.01**	**0.98**	**1.77**	**13.1**	**0.08**	**-1.1%**	**-0.21**	**-0.49**	**0.02**			**0.27**
1227/06	Ngaputahi	Growbulk	82	0.67	0.70	-0.03	0.28	-10.7	-0.29	0.2%	1.18	-1.58	0.00			0.25
358/04	**MNCC**	**Coopworth**	**43**	**0.54**	**0.62**	**-0.08**	**0.28**	**32.8**	**-1.12**	**-0.6%**	**1.39**	**1.17**	**-0.04**	**0.26**	**0.28**	**-0.60**
1218/06	Hinenui	Coopworth	34	0.50	0.47	0.03	-0.48	36.6	-0.35	0.0%	-0.57	-0.89	0.02			0.10
301/04	**Hazeldale**	**Perendale**	**21**	**0.44**	**0.28**	**0.16**	**0.09**	**-7.7**	**-1.54**	**-0.8%**	**-0.22**	**0.01**	**-0.03**		**-0.09**	**-0.13**
55/01	Bonnieview	Perendale	20	0.32	0.25	0.07	0.17	27.9	0.54	-0.6%	-0.76	-1.56	0.03	0.02	-0.08	-0.26
569/07	**Longview Perendale**	**Perendale**	**84**	**0.26**	**1.05**	**-0.79**	**-0.18**	**-16.8**	**0.07**	**0.3%**	**0.36**	**-1.28**	**0.00**			**-0.27**
245/04	Tamlet	Coopworth	23	0.10	-0.74	0.84	1.14	-12.8	-0.24	-0.2%	0.48	1.42	-0.02			0.55
386/03	**Rene**	**Perendale**	**33**	**-0.04**	**1.27**	**-1.31**	**-1.56**	**-60.4**	**-1.54**	**-0.7%**	**0.25**	**0.65**	**0.01**	**0.03**	**-0.17**	**0.00**
4203/02	Kelso	Kelso	39	-0.12	1.41	-1.53	-1.93	-38.4	-0.02	0.1%	0.04	0.50	0.01	0.08	-0.40	-0.38
627/01	**TRIGG**	**Romney**	**73**	**-0.16**	**0.08**	**-0.24**	**-0.08**	**18.4**	**-2.14**	**-0.4%**	**0.12**	**1.43**	**0.02**	**0.13**	**0.02**	**0.09**
781/00	Shoreford	Romney	30	-0.18	0.27	-0.45	0.40	15.6	-0.37	-1.8%	0.96	-0.16	-0.01		0.30	
2247/04	**Rosedale**	**Growbulk**	**35**	**-0.22**	**-0.13**	**-0.09**	**0.48**	**-9.8**	**0.86**	**-0.5%**	**0.34**	**0.70**	**-0.04**	**0.18**	**-0.20**	**0.14**
232/01	TRIGG	Romney	21	-0.22	-0.79	0.57	1.37	9.5	-1.63	-0.9%	0.34	-0.29	-0.02		0.09	
132/01	**Kelso**	**Kelso**	**31**	**-0.24**	**0.48**	**-0.72**	**-1.45**	**-26.0**	**-0.61**	**1.6%**	**-0.57**	**-0.11**	**0.00**		**-0.12**	
435/98	Kelso	Kelso	29	-0.26	0.27	-0.53	-0.13	-7.6	-0.08	-0.2%	-0.29	-0.23	0.02		0.07	

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

TOP 19 DUAL PURPOSE RAMS FOR DUAL PURPOSE INDEXES*

ID	Flock	Breed	Production ($)	Lamb growth ($)	Adult size ($)	Meat ($)	Wool ($)	Reproduction ($)	Worm Fec ($)	Facial Eczema ($)
742/04	**Cairnlea**	**Coopworth**	**27.33**	**12.80**	**-2.92**	**0.56**	**3.51**	**13.38**	**-6.55**	**-2.19**
4/06	Corriedale	Corriedale	16.94	11.55	-4.61	0.55	2.18	7.27	-4.48	2.19
1560/03	**The Gree**	**Greeline**	**16.36**	**8.90**	**-1.53**	**1.25**	**1.00**	**6.74**	**2.79**	**-8.97**
278/03	MNCC	Coopworth	15.82	6.08	2.29	-1.33	3.09	5.69	1.55	4.27
300/03	**MNCC**	**Coopworth**	**15.12**	**6.35**	**-1.62**	**1.57**	**1.72**	**7.10**	**2.75**	**-0.66**
1617/04	Awareka	Romney	14.94	6.99	-4.38	0.72	1.07	10.53	1.43	-0.85
358/04	**MNCC**	**Coopworth**	**14.00**	**10.71**	**-5.26**	**0.03**	**2.24**	**6.27**	**0.17**	**5.39**
D611/04	Glenovis	Corriedale	12.78	13.11	-4.93	-1.38	0.94	5.05	-0.35	0.20
301/04	**Hazeldale**	**Perendale**	**12.42**	**8.85**	**-3.60**	**1.78**	**1.07**	**4.33**	**-3.43**	**1.16**
422/00	Wattlebank	Corriedale	12.15	9.98	-4.81	-1.00	2.34	5.63	-4.49	0.58
706/00	**Lincoln**	**Coopworth**	**11.84**	**3.37**	**0.95**	**0.27**	**2.06**	**5.18**	**1.89**	**2.39**
147/01	Tresco	Romney	11.83	4.00	-1.10	-0.53	0.29	9.17	1.16	-1.14
431/04	**Twin Farm**	**TEFRom**	**11.77**	**8.96**	**1.17**	**-1.75**	**-1.90**	**5.28**	**-0.70**	**-2.30**
2247/04	Rosedale	Growbulk	11.69	9.13	-2.36	0.04	0.47	4.41	0.05	-1.28
457/00	**Nithdale**	**Romney**	**11.20**	**6.84**	**-0.31**	**-0.84**	**1.80**	**3.70**	**2.38**	**0.72**
18/04	White Rock	Corriedale	10.34	7.68	-3.62	1.27	0.55	4.46	-5.00	1.76
833/02	**Tamlet**	**Coopworth**	**9.59**	**12.03**	**-6.24**	**-0.35**	**1.00**	**3.16**	**-1.53**	**-5.77**
542/04	Hazeldale	Perendale	8.84	11.19	-5.70	0.06	0.27	3.03	-3.85	1.30
84/04	**ARDG Elite**	**Romney**	**8.64**	**1.44**	**0.01**	**0.43**	**-0.20**	**6.97**	**2.67**	**0.49**

** These results are the SIL Dual Purpose Production (DPP) index, and the sub-indexes that make up the DPP. The DPP does not include health traits, so WormFEC and facial eczema are listed as well. All indexes are in dollar values. Only 38 rams meet the criteria to have results presented to date, so the results for the top half are presented.*

LINK SIRES ACROSS SITES AND YEARS

Terminal sire

			Years and sites used										
ID	**Flock**	**Breed**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
381/98	**Poukawa**	**Composite**	**P**		**P**								
T533/01	Wharetoa	Composite				W	W						
31/02	**Kaya Dorper**	**Dorper**							**A**		**P**		
767/99	Darenal	Dorset Down					A, P						
77/95	**Douglas Downs**	**Dorset Horn**				**W**		**W**					
4012/99	Bilberry Oaks	Hampshire				W	W						
263/95	**Aorere**	**Poll Dorset**	**P**	**P**	**P**	**P**	**P**						
35/01	Glengarry	Poll Dorset					A, P, W						
430/03	**Glengarry**	**Poll Dorset**							**A, P, W**				
211/98	Kurralea	Poll Dorset		P		W							
106/99	**Ohio**	**Poll Dorset**			**P**	**W**							
299/01	Ohio	Poll Dorset					P	A, P					
U33/97	**Mornish**	**Suffolk**				**P, W**							
*128/97	Punchbowl	Suffolk				P	W						
***326/94**	**Punchbowl**	**Suffolk**		**P**			**P**						
*419/96	Punchbowl	Suffolk			P	W							
165/00	**Torresdale (NZ Suffolk)**	**Suffolk**				**P, W**							
25/99	Tyanee	Suffolk			P	P	P	A, P	P	A, P, W	A, P, W	A, P, W	A, P, W
400/00	**Brandes Burton**	**Texel**				**W**		**W**					
299/00	Landcorp	Texel				W	W						

Dual Purpose

			Years and sites used										
ID	**Flock**	**Breed**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
97/02	**Raywell**	**Borderdale**					**A**	**A**					
11/01	Little River	Cheviot					A, W						
706/00	**Lincoln**	**Coopworth**					**A, W**	**A**	**A, W**	**A, P, W**	**A, P, W**	**A, P, W**	**A, P, W**
85/00	Tahakita	Coopworth						A, W					
833/02	**Tamlet**	**Coopworth**							**W**	**W**			
422/00	Wattlebank	Corriedale						A	A				
B40/94	**Silverstream**	**East Friesian**	**P**	**P**									
664/98	ARDG Elite	Romney					W	P					
50394/06	**Kelso**	**Kelso composite**										**A**	**W**
1832/02	Awareka	Romney						A, W					
2165/97	**Wairere**	**Romney**				**W**	**W**	**A**					
34/01	Twin Farm	TEFRom					W			W			

BREEDING FOR TOLERANCE TO FACIAL ECZEMA

Facial eczema (FE) is caused by a fungus that lives in the base of pasture 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 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.

Tolerance to FE is highly heritable (around 40%), so choosing a ram that has been part of a genetic improvement programme for FE tolerance is a simple and effective option for commercial farmers faced with FE challenges. An important point to note is that FE tolerance is genetically independent of important production traits. This means that it is possible to find rams with good productivity as well as FE tolerance.

To have an FE tolerant ewe flock, Beef + Lamb New Zealand's Geneticist, Dr Mark Young, advises commercial farmers to work with ram breeders using the Ramguard service. He. recommends they should:

1. Buy a team of FE tolerant rams from a Ramguard registered breeder (a list of 2009/2010 registered Ramguard breeders is available on SIL- www.sil.co.nz);
2. Select for production traits, such as meat yield and growth rate at the same time
3. Mate rams to commercial ewes and have FE tolerant ewe lambs on-farm within a year.
4. Mate these progeny to FE tolerant rams to lift FE tolerance of the ewe flock further.

Building an FE tolerant flock means less time and money will be spent on pasture and livestock management treatments and in time will lead to greater peace of mind through not having to worry as much about when the next FE outbreak will be.

How does a breeder select for FE tolerance?
SIL uses the Ramguard® system to rank rams for FE tolerance. Rams in the breeding programme are artificially challenged with sporidesmin. A blood sample is taken and gamma glutamyl transferase (GGT) is measured. GGT is an enzyme produced by the liver in response to toxins, including the sporidesmin toxin. A low amount of GGT in the blood indicates good FE tolerance. This is what the breeder selects for. Alternatively, a natural challenge can be used, where blood samples are taken from a monitor group of rams. Ramguard experts work with breeders to design the most appropriate strategy for a breeder's situation.

SIL applies an economic weight to genetic merit for FE based on the effects FE has on survival and performance of breeding ewes and ewe replacements. A SIL FE sub-index can be combined to rate rams for overall economic merit for ram buyers.

More information about the Ramguard 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.

BREEDING VALUE ACCURACIES

An addition to this year's results is an accuracy figure for "estimated" breeding values ('eBVs'). The accuracy value is a percentage which ranges from 0 to 100%. A high value means that there is a large amount of good data behind the breeding value, and the breeding value is unlikely to change much with additional data. Conversely, a low accuracy means that there is little, or poor, data behind the breeding value, and that the breeding value is more likely to change as more data is recorded i.e. it is less "reliable" than a high value. Accuracy values have been available in the dairy and beef industries for number of years, and will be available to the sheep industry through Sheep Improvement Limited later this year. The following is a brief description of what accuracy values mean and how they can be used most effectively.

An eBV rates the value that an animal passes on to its sons and daughters. There is some "uncertainty" or statistical error associated with all eBVs. Where there is a lot of data, the uncertainty is low and accuracies are therefore high. Where there is little data, then levels of uncertainty are higher and accuracies are correspondingly lower. The breeding value for a particular animal is assumed to be average until there is sufficient information to indicate that it is indeed better or worse than the average. eBVs are therefore more likely to be around an average value until the accuracy is sufficiently high to move the value away from that average, either in an upwards or downwards direction.

Accuracy of an eBV is determined from a number of factors including:

- the heritability of the trait
- the number of relatives (particularly half-sibs and progeny) that have records for the trait
- the amount of information that comes from other correlated traits on the animal and its relatives

The key advantage of the accuracy value is that it gives an assessment of risk. With high accuracy eBVs you know what you are going to get, whereas with low accuracy eBVs there is a greater risk they will change as we collect more data. A breeding programme is a business and therefore risk is an important issue. Breeders will typically make some sure decisions e.g. using a well proven sire, alongside some more risky decisions e.g. testing some high ranking ram lambs or 2-tooths that are, as yet, 'unproven' sires. The low risk situation provides the means to produce rams for sale for which one can reliably predict their likely genetic performance, whereas the unproven sires are part of the search for the next superior sire to keep the breeding programme moving forward.

In theory, one should not select animals on both eBV and accuracy. As stated above, the eBV has the accuracy value "built-in" so there is no need to. When you select an animal with a good eBV but with lower accuracy, there is a small risk that it will perform worse than predicted. While this obviously seems like an issue when looked at on an individual animal basis, just as many rams should increase as those that decrease their breeding values. In the long run it is a case of "swings and roundabouts" for a flock with 'losses' equalling 'gains'.

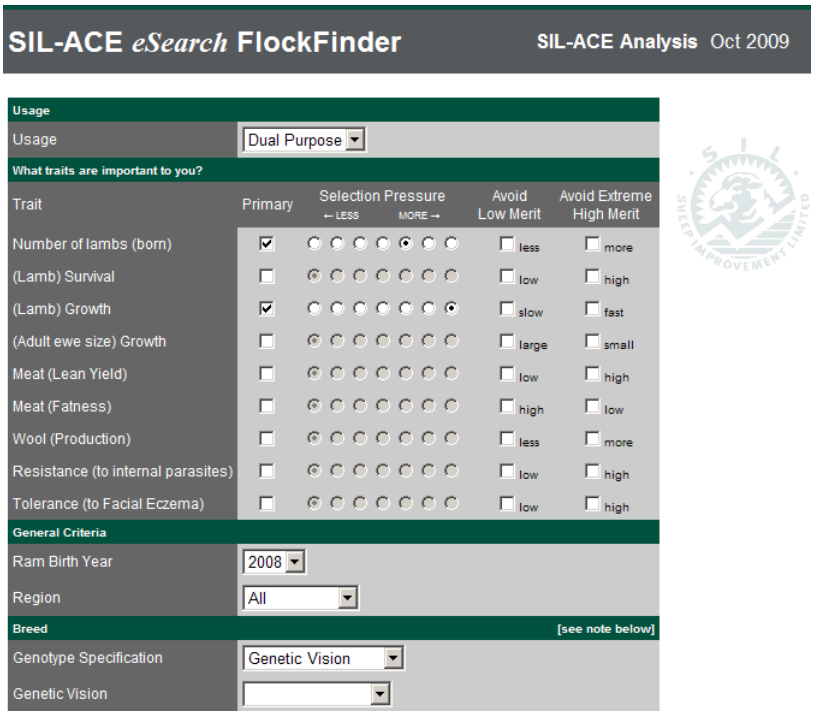
The accuracies we see for the B+LNZ Central Progeny Test sires are of good accuracy and in the general range of 60 to 90%. However, they will not be as high as some well used sires in industry with many more progeny. Accuracy values for the standard SIL and SIL ACE traits have been supplied by SIL. Helping introduce new technologies, like breeding value accuracies, to the sheep industry is one of the objectives of the B+LNZ Central Progeny Test.

FLOCKFINDER: A TOOL TO HELP FARMERS FIND BREEDERS THAT PRODUCE RAMS TO SUIT THEIR FARM

The best ram-team for one farm can be totally different to the best ram-team for another farm, and even the farm next-door. This is because individual farms have different performance goals, management systems and environments, and therefore require different ram genetics to reach their individual goals. FlockFinder is a new web-based tool developed by SIL, which allows farmers to electronically search the results of the large-scale SIL-Advanced Central Evaluation (ACE) and locate ram breeder flocks with rams which are the best-fit for their performance goals. FlockFinder can be found on the SIL website (www.sil.co.nz) under 'Buying Rams'.

FlockFinder works by searching the SIL-ACE results in which over 300 SIL flocks participate. FlockFinder then lists flocks that collect information for traits that the user has selected (see the figure below). The traits that can be currently selected include:

- Reproduction (NLB)
- Lamb survival
- Lamb growth
- Adult ewe size
- Meat (lean yield and fatness)
- Wool
- Internal parasite resistance
- Tolerance to facial eczema



Once a trait is selected, the user can give it their own weighting by assigning more or less selection pressure. More selection pressure means it is of greater importance to their farming system, and less selection pressure means it is of lesser importance. The user also has the option to exclude extremes in genetic merit, where they can exclude the extremely low merit, extremely high merit, or both low and high merit. In addition to trait selection, the results can be limited to a particular region of the country (currently North Island or South Island), specific ram age groups, and/or breeds.

Once the user has entered their information, FlockFinder returns a list of flocks which match their criteria. 'Matching' flocks are flocks that have recorded some data for the selected traits. For example, weaning weight and live weight at eight months of age are traits that are used to calculate lamb growth. If a flock measured either weaning weight or live weight at eight months, it would be considered a match. However, it would be considered a better match if it recorded both.

The resulting list of flocks found by FlockFinder are not rated for genetic merit. It lists flocks by size (largest to smallest) based on the number of animals it finds. Next to each flock is a list of traits that it has robust information for. Flock contact details are then just a click away.

ANIMAL MANAGEMENT PROCEDURES

To date, a total of 193 sires from 15 terminal and 11 dual purpose breeds 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 2009/2010

Event	Poukawa	Ashley Dene	Woodlands
Start of mating	3 March	6 April	16 April
Start of lambing	28 July	1 September	10 September
Docking	At birth	18 September	29 September
Weaning	4 November	3 December	8 December
First draft	11 November	4 December	10 December
Second draft	9 December	20 January	14 January
Third draft	26 January	24 February	11 February
Fourth draft	9 March		11 March

FUTURE OF THE CENTRAL PROGENY TEST

The ninth cycle of matings has been completed at Ashley Dene, Poukawa and Woodlands. A total of 11 new terminal sire rams and 11 new dual purpose rams have been mated this year to bring to 216 the total rams to be reported on in 2011.

The fifth year-group of ewe progeny (i.e. 2008 born) have now been mated as two-tooths so that rankings of dual purpose rams are increasing in value. Likewise, numbers of rams with facial eczema breeding values are increasing rapidly.

Sire entry into the Central Progeny Test

A call is made for expressions of interest to supply rams to the Central Progeny Test in November each year. All SIL recorded flocks in New Zealand receive notification of the call. The individual ram selection decision is left to the breeder, but spaces in the Central Progeny Test 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 performance information (e.g. ultrasonic eye muscle measurements) for the individual ram in SIL recorded flocks

Alternatively, rams can be entered into the Central Progeny Test on a cost-recovery basis. $5000 per terminal sire and $15000 per dual purpose sire.

Additional traits

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

Add-on projects

To date the unique genetic resources of the Central Progeny Test have been used for 13 add-on projects. Many of them assist with identification and evaluation of gene markers and whole genome scans. It is envisaged that such uses will continue to be an important contribution of the Central Progeny Test to advances in the sheep industry.

Genetic connectiveness between breeding groups

Permission has been granted for two breeding groups to use Central Progeny Test data to improve genetic connections between flocks in their groups. This use is positively supported by the Management Committee. Consideration is being given to changes in the objectives and structure of the Central Progeny Test that will increase its value to ram breeders and ram buyers. Suggestions are welcome.

To provide comment and to get further information including on the source of individual rams, or if you want results presented to a farmer meeting, contact Andy Bray andy.bray@beeflambnz.com Phone (03) 357 4855

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