beef+lamb new zealand GENETICS

Low Input Sheep Progeny Test

Cohort 2019 Report
June 2020

This publication is made possible by sheep and beef farmer investment in the industry.

Contents

Introduction

Background

The Low Input Sheep Progeny Test represents a group of sheep breeders in New Zealand who are focused on;

- animal welfare traits (e.g. tail length, dagginess, bareness of wool) meaning lambs will ultimately not need to be docked and require less, or no treatment, for dag control and flystrike
- breeding sheep that are disease resistant (parasites, pneumonia) and require less, or ultimately, no drenching
- breeding sheep that are environmentally efficient (methane and feed efficient) – who can produce quality lamb that is fit for purpose and underpins environmentally-sustainable principles

In partnership with breeders and MPI, B+LNZ Genetics' Sheep Progeny Test at Orari Gorge Station has been funded to evaluate rams for the above traits, in addition to New Zealand Maternal Worth (NZMW) traits.

Importantly, it will harness the fundamental genomic tools developed in previous research by PGgRc, to assess sires from the breeder group to produce low methane-emitting and feed-efficient lamb.

Acknowledgements

Special acknowledgements: Robert and Alex Peacock, and the staff at Orari Gorge Station. Alan Richardson, Kate Broadbent and Daniel Wheeler (Low Input Steering Group)

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Industry partners: AgResearch, PGgRC, Alliance Group, Genetics Gains Ltd - Julia Aspinall.

Participating breeders: Thank you to the breeders who have contributed rams to this progeny test. For a list of rams in the latest cohort, please visit our website: sil.co.nz/progeny-tests

Contact

For questions about the Low Input Sheep Progeny Test, please contact B+LNZ Genetics:
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Reporting

Seventeen sires from fifteen different birth flocks generated about 920 live progeny.

Data in this report is summarised as within-flock indexes and sub-indexes – this means the information relates to traits recorded in the Low Input Progeny Test Flock (5010) only.

Within-flock reporting was used because some sires come from flocks that have a long history of recording and selection for particular traits (e.g. WormFEC), and others haven't recorded or selected for this trait.

Within a flock, animals can vary considerably across recorded traits. Few, if any, are good at all traits, and some sires had no estimated merit for some traits when they were selected.

For selection decisions, B+LNZ Genetics recommends using all available information (NZGE) to get the most complete estimates of genetic merit.

Cautions

- A within-flock evaluation uses information recorded in one flock. It is scaled to the corrected within-flock average and should not be compared with other evaluations. Merit is based only on the limited data set and only for traits recorded to date.
- The scale and spread of indexes and breeding values does not relate in any way to other evaluations (e.g. NZGE) and should not be used for any other purpose than a relative comparison within the 5010 flock.
- Data is corrected for known environmental effects; e.g. birth date, age of dam, sex, birth rank, rearing rank and management mob, so it is a better basis for comparison than raw data.
- It's important to remember that one or two rams are not representative of a whole flock

Outline of objectives

The key objectives of this trial are to focus on improvements to animal welfare and livestock emissions. In addition to New Zealand Maternal Worth (NZMW), low input traits recorded are;

- tail measurements (length and bare skin length)
- growth
- propensity to produce dags at weaning and eight months,
- and faecal egg output (FEC)as an estimate of parasite resistance.

A proportion of ewe lambs will also be measured for Feed Efficiency (RFI) at AgResearch's Invermay site, and the same animals measured for methane production using the AgResearch mobile PAC chambers.

Management of lambs

There were three lambing mobs, one of singles and two of twins.

Tail traits were measured at docking/tailing. Female lambs were tailed, male lambs were not, and were made into cryptorchids. Female lambs were shorn in March.

All lambs were drenched at weaning (12/12/2019). Post-weaning, lambs were grazed in single-sex mobs. A group of 20, slightly later-born male lambs from commercial ewes were used as a control and grazed with the male lambs. They were weighed and drenched approximately monthly.

Although lambs grew well between their first and second weighing, Faecal Egg Counts (FEC) did not lift to a high enough average to measure the first FEC sample in the male lambs (ideally >880 eggs per gram). In an effort to lift epg levels, males were grazed to lower residuals which saw a reduction in weight gain from 30/01/2020 to 20/02/2020.

After FEC testing, male lambs were grazed on red/white clover to recover growth rates, and then moved to grass until they were processed in mid-May. Ewe lambs also spent a short time on clover (see report section on liveweight).

The occasional lamb was drenched and removed from the trial, but the majority remained un-drenched from the time of their initial weaning drench, until processing (males). Ewe lambs will be drenched prior to going onto winter crop.

The majority of male lambs were processed at Alliance Group's Smithfield plant on 22 May and ViaScan data was recorded. Seventeen lambs who were under 35kg, were retained on farm.

Seven mixed-age teaser rams with harnesses were joined with ewe lambs from 1-27 May and marks recorded.

Future measurements: Methane and Feed Efficieny

A focus within this progeny test is identifying progeny that are environmentally efficient. A sample of ewe lambs from each sire will be assessed at Invermay for Feed Efficiency over winter, and the same individuals will be assessed for Methane Production through the mobile PAC chambers in early November.

The intention had been to do Methane testing in Autumn, but this was not possible because of restrictions in place during the Covid-19 lockdown.

Tail traits were measured during docking. Female lambs were tailed, male lambs were not, and were made into cryptorchids

Rams used in Cohort 2019

Seventeen rams from diverse flocks and breed composition were used in 2019.
Reminder: a single ram is not representative of a whole flock.

Sire Birth ID	Birth Flock	Breed1	Breed2	Breed3
151.G197/14	Kikitangeo	Romney		
228.25/16	Wheeler	Finn		
1072.737/17	Newhaven	Perendale		
1425.209/17	Nikau	Coopworth		
1811.54/17	Orari Gorge	Romney		
1811.606/17	Orari Gorge	Romney		
2368.7165/17*	Arvidson	Wiltshire		
2629.1020/17	Nithdale	Romney (76%)	Texel (24%)	
2744.51137/16	Kelso Maternal	Texel (30%)	Finn (26%)	Coopworth (26%)
2744.50985/17	Kelso Maternal	Comp (40%)	Texel (27%)	Finn (13%)
3666.383/17	Ardo Eazicare	Poll Dorset (34%)	Texel (26%)	Texel Cross (25%)
4480.3167/17	Ngaputahi Glen Growbulk	Romney (73%)	Texel (23%)	Poll Dorset (3%)
4548.3049/15	Avalon Ultimate	Texel (39%)	Perendale (25%)	Finn (23%)
4591.9506/15	Waipuna Highlander	HIghlander (75%)	Romney(25%)	
4626.2318/15	Avalon Texel	Texel (68%)	Perendale (24%)	Romney (8%)
4851.75/17	Romani	Coopworth (93%)	Romney (7%)	
4989.282/17	Readstock	Composite (75%)	Wiltshire (25%)	

*The current SIL ID of sire 2368.7165/17 is 2351.7165/17 and current flock is Richwilt.

The team from Genetics Gains Ltd artificially inseminating ewes in the mating programme

Within-flock SIL evaluation

A within-flock evaluation uses information recorded in one flock. Data presented below relates to the traits recorded to date in the Low Input Progeny Test Flock 5010 only.

As the evaluation covers one year of data in the progeny test flock, the Indexes and sub-indexes are scaled relative to the flock average - so approximately half the values will be positive (above the flock average for the trait) and half the values will be negative.

Reminder

The scale and spread of indexes and breeding values does not relate to other evaluations (e.g. NZGE), and should only be used as a relative comparison within the 5010 flock.

Data is corrected for environmental effects (e.g. birth date, age of dam, sex, birth rank, rearing rank, management mob) and is a better basis for comparison than raw data.

Index Merit

Generally, all sires had similar accuracy levels by trait: about 20% for Dual Purpose Survival (DPS), 81% for Dual Purpose Growth (DPG), 84% for Dual Purpose Meat (DPM), 84% for Dual Purpose WormFEC and 77% for Dual Purpose Dag score. DPS accuracy is low as it only includes Survival Direct of the lambs born.

- DPG includes weaning weight and liveweight at 6 and 8 months
- DPM is based on ultra-sound eye muscle scanning and ViaScan data
- DPD is based on dag scores at weaning and at 8 months
- DPF is based on FEC1, NEM1 and FEC2, NEM2 data

The Overall within-flock Index (Overall (SGMFD)) is based on Survival Direct, Growth, Meat, Parasite Resistance and Dags. These are within-flock values only and are not comparable with any other evaluation.

Overall (GMFD) excludes Survival – it has low accuracy due to being a low heritability trait and only survival direct information available in flock 5010.

There are 3 sires that are above average for all five traits and four sires above average for four traits (Growth, Meat, FEC and Dag). See Table 1 on the next page.

Table 1. Overall Index and sub-index merit of sires within-flock

SIL B ID	Overall (SGMFD)	Overall (GMFD)	DPG	DPM	DPF	DPD	DPS
151.G197/14							
228.25/16							
1072.737/17							
1425.209/17							
1811.54/17							
1811.606/17							
2368.7165/17							
2629.1020/17							
2744.51137/16							
2744.50985/17							
3666.383/17							
4480.3167/17							
4548.3049/15							
4591.9506/15							
4626.2318/15							
4851.75/17							
4989.282/17							

- Overall indexes (blue bars): values to the left are low, values to the right are high.
- Sub-indexes: green bars indicate merit above the flock average, and red bars indicate merit below the flock average.

Table 2. Within-flock indexes and sub-indexes by sire

SIL Birth ID	Overall (SGMFD)	Overall (GMFD)	DPG	DPM	DPF	DPD	DPS
151.G197/14	-611	-568	-1093	-194	930	-211	-43
228.25/16	511	362	968	-203	-524	121	149
1072.737/17	-1160	-1266	-348	-809	-69	-40	106
1425.209/17	813	778	253	-120	738	-93	35
1811.54/17	-1266	-1371	-46	-516	-843	34	105
1811.606/17	-1192	-938	542	-289	-1178	-13	-254
2368.7165/17	594	704	15	946	-322	65	-110
2629.1020/17	-114	-158	-472	-138	479	-27	44
2744.51137/16	1855	1635	1008	368	247	12	220
2744.50985/17	602	673	303	331	-127	166	-71
3666.383/17	970	1108	830	528	-287	37	-138
4480.3167/17	93	382	-117	919	-443	23	-289
4548.3049/15	246	352	574	114	-493	157	-106
4591.9506/15	-2246	-2343	-632	-515	-1111	-85	97
4626.2318/15	1225	1151	459	413	257	22	74
4851.75/17	1962	1863	868	451	538	6	99
4989.282/17	499	402	629	-41	-235	49	97
Sire Average	164	163	220	73	-144	13	1

Note: Higher index values indicate higher merit.

Variation in progeny

Within the progeny of the sires used in 2019 there was a lot of variation - some of this would have come from dams as well as the sires.

Breeding values and sub-indexes were produced for male progeny, then sorted on being above average for Growth, Meat, WormFEC and Dag sub-indexes.

Within the males, there were 29 progeny from 10 rams, who had values above the flock average for all four traits.

Breeding Values for tail traits

Tail Length is highly heritable (about 75%). There will be variation in tail length in all breeds, but in general Romney's have long tails.

Some breeds such as Finn, Dorper and Texel have shorter tails. As the ewes are Romney, the variation in tail length will predominantly come from the ram.

Tail traits were recorded at docking (7/10/2019). Tail Length was recorded with a ruler from the base of the tail to the tip, and clear skin area is also recorded with a ruler.

Currently Tail Length and Tail Skin are research BVs and no sub-index is available. Negative Tail Length BVs indicate shorter tails, and for tail skin a higher value indicates more bare skin on the underside of the tail.

Table 3. Research Breeding Values for Tail Length and Tail Skin

SIL Birth ID	TLENSCrBV	TSKINrBV
151.G197/14	0.76	-0.78
228.25/16	-0.32	1.44
1072.737/17	0.55	-0.88
1425.209/17	0.42	-0.07
1811.54/17	0.14	-3.15
1811.606/17	0.11	-2.73
2368.7165/17	0.44	5.85
2629.1020/17	-0.08	-0.32
2744.51137/16	-0.03	0.55
2744.50985/17	0.11	-0.68
3666.383/17	0.16	2.14
4480.3167/17	-0.03	-0.78
4548.3049/15	0.05	4.51
4591.9506/15	-0.29	0.09
4626.2318/15	-0.17	0.12
4851.75/17	0.31	0.66
4989.282/17	0.11	1.93
Sire average	0.13	0.47

Tails ranged in length from 15cm to 32cm and averaged 23.7cm.

TLENSCrBV - a lower value means a shorter tail
TSKINrBV - a higher value means more bare skin on tail.

Data Summary

Liveweight gains

Ewes were lambed in three mobs; singles and two mobs of twins. Lambs were weaned on 12/12/2019 and drenched and run as separate mobs (male and ewe lambs) after weaning.

Between 30/01/2020 and 20/02/2020 the male lambs were grazed to a lower residual in an effort to lift FEC count to an average high enough to achieve a good spread of values for this trait – growth virtually stopped with some lambs losing weight.

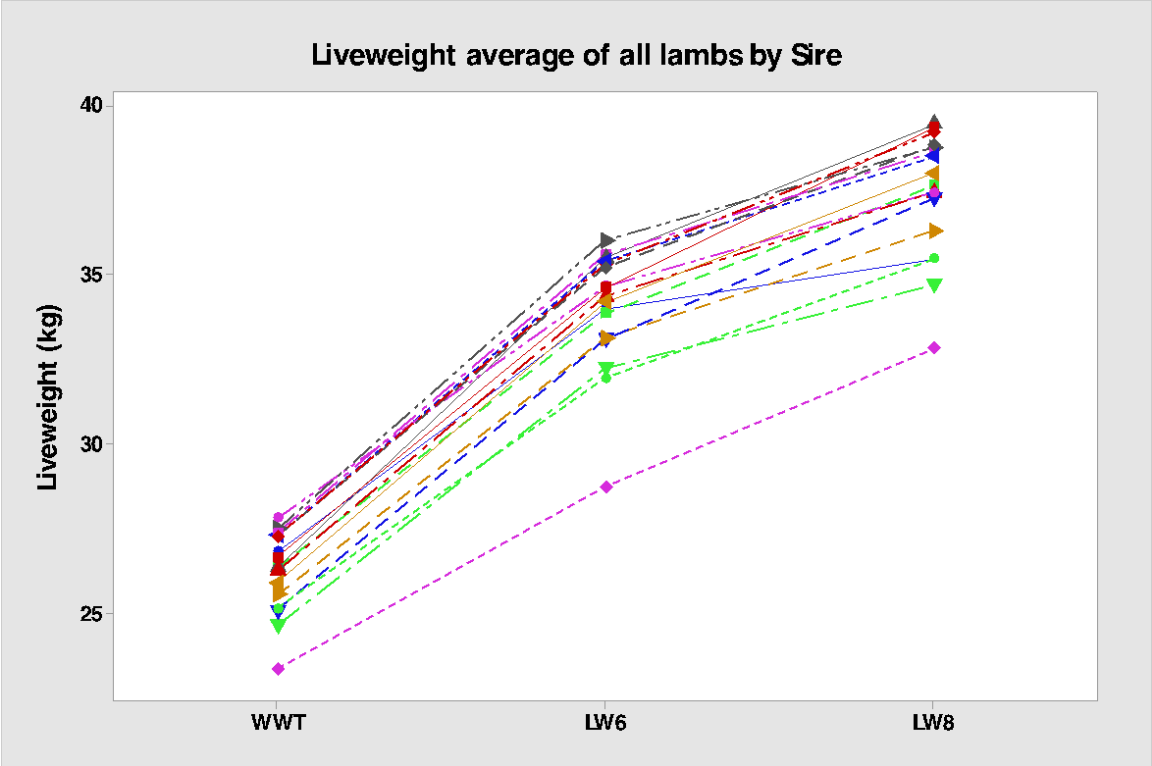
After 20/02/2020 weights and FEC samples were taken, male lambs were grazed on red/white clover to recover growth rates for a period before being put onto grass.

Ewe lambs were weighed less often and like the male lambs, had a short period on red/white clover when their condition looked to have dropped.

Extra weights were recorded on the male lambs. The period from 30/01/2020 to 20/02/2020 is when the lambs were grazed to lower residuals (this also means lower quality). This corresponded with a period of flat to slightly negative growth on average (see Figure 2, pg12)

Male lambs were cryptorchids and there was considerable sexual activity in the period from 20/04/2020 to 18/05/2020, which may have affected growth rates of some more than others.

Figure 1. Average liveweight at weaning, LW6 and LW8 by sire



Note: The data on growth rates has been presented separately because ewe lambs and ram lambs were managed as separate mobs with slightly different weigh dates.

Liveweight change - males

The male lambs were cryptorchids. They were weighed six times from weaning to processing.

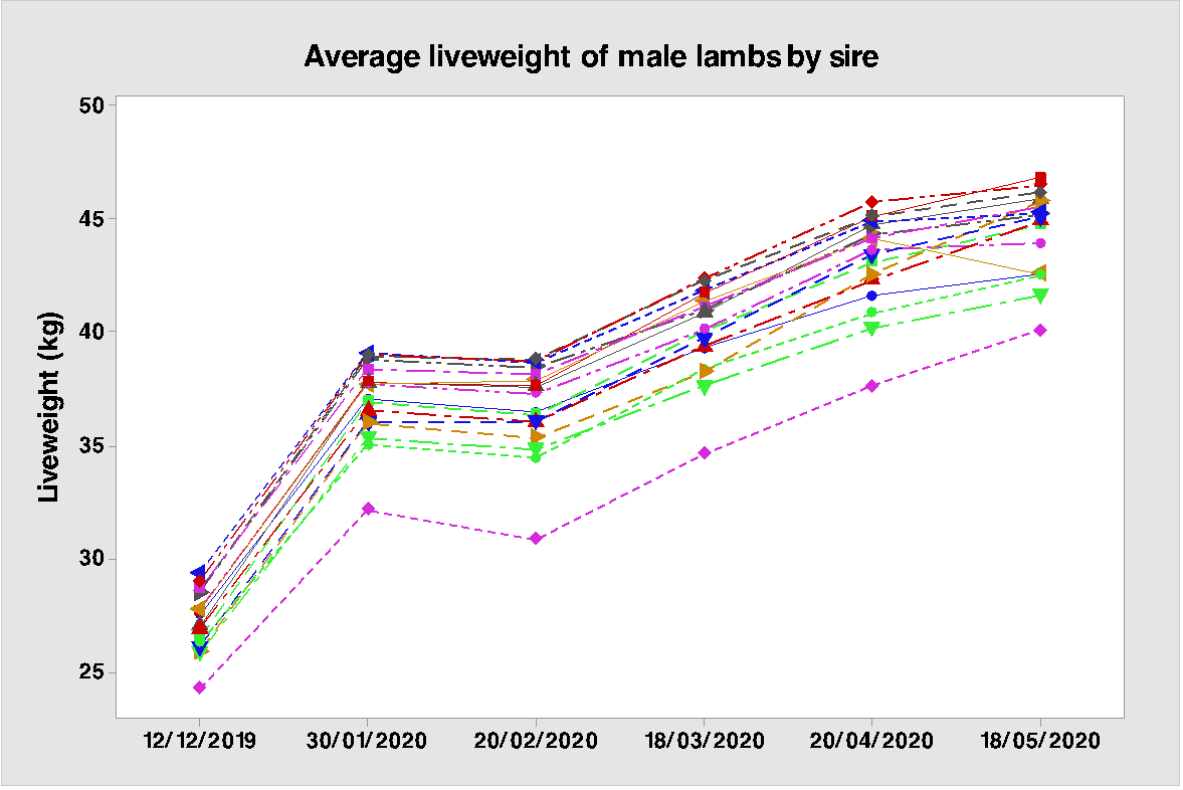
Although these weights are all tracked, only three weights are used in the genetic evaluation. Data relates to weaning on 12/12/2020, LW6 on 20/02/2020 and LW8 on 18/03/2020.

Table 4. Average liveweight of all male lambs for each period.

Date	N	Mean	StDev	Min	Q1	Q3	Max
12/12/2019	460	27.4	5.3	14.0	23.9	30.8	42.0
30/01/2020	467	37.2	5.9	16.6	33.6	41.2	52.6
20/02/2020	464	36.8	5.6	18.0	33.2	40.8	51.6
18/03/2020	458	40.1	5.4	21.2	36.8	44.0	53.0
20/04/2020	456	43.3	5.5	25.0	40.0	47.2	56.6
18/05/2020	451	44.6	5.0	28.5	41.6	48.0	58.2

Notes: Q1 and Q3 correspond to the 25% and 75% percentile values. When displaying minimum and maximums, one unusual animal can have a big impact. Looking at Q1 & Q3 gives an impression of the middle 50% range of values.

Figure 2. Change in male lamb liveweight by sire - weaning to May



Generally, lambs under 25kg at weaning struggle to meet their protein needs from grass only. These lambs had a faster-than-average gain from LW6 to LW8 which noticeably reduced the gap for both male and ewe lambs

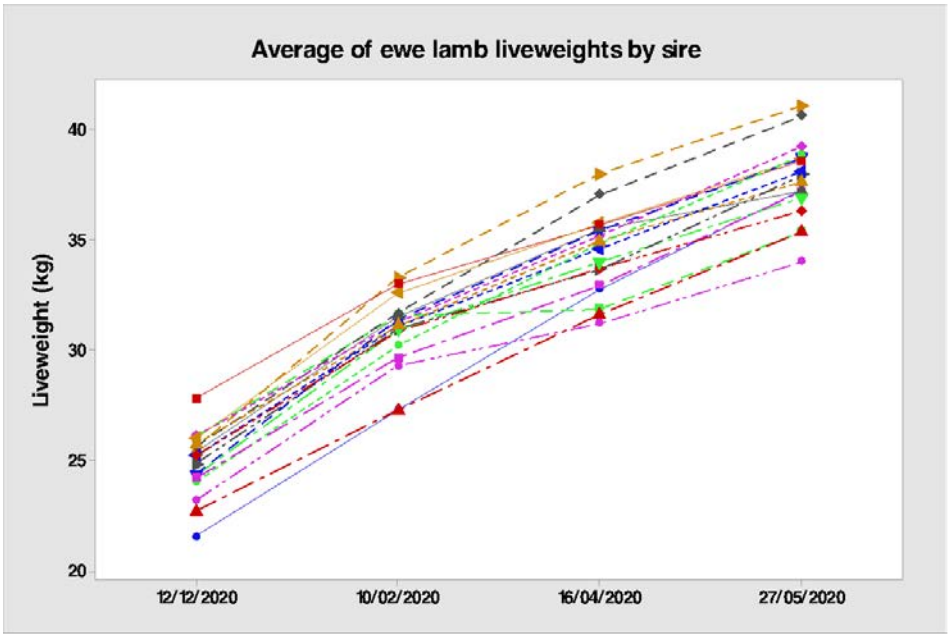
The flat period from 30/1/2020 to 20/02/2020 corresponds to the period when ram lambs were grazed to low residuals for FEC testing. Lambs were grazed on red/white clover for a recovery period before going back on grass, through to processing.

A final weight was recorded on 18 May and Robert commented that there was a lot of sexual activity in the period prior to measurement. This may have impacted individuals and sire groups differently in the last weigh period.

Liveweight change ewe lambs

Ewe lambs were weighed four times – from weaning to 27/05/2020. Weaning weight recorded on 12/12/2019, LW6 on 10/02/2020 and 16/04/2020 are used in the evaluation.

Figure 3. Change in ewe lamb liveweight by sire - weaning to May



Lambs being brought in to measure growth rate from week 7 to week 10 (post their weaning drench)

Control lambs vs. progeny test lamb growth rates

A group of 20 male lambs from commercial ewes were run with the male progeny test lambs as a control group. These lambs were born about three weeks later (on average) than the progeny test lambs so were initially smaller in comparison.

They were weighed and drenched approximately monthly. The progeny test males were un-drenched from weaning to processing.

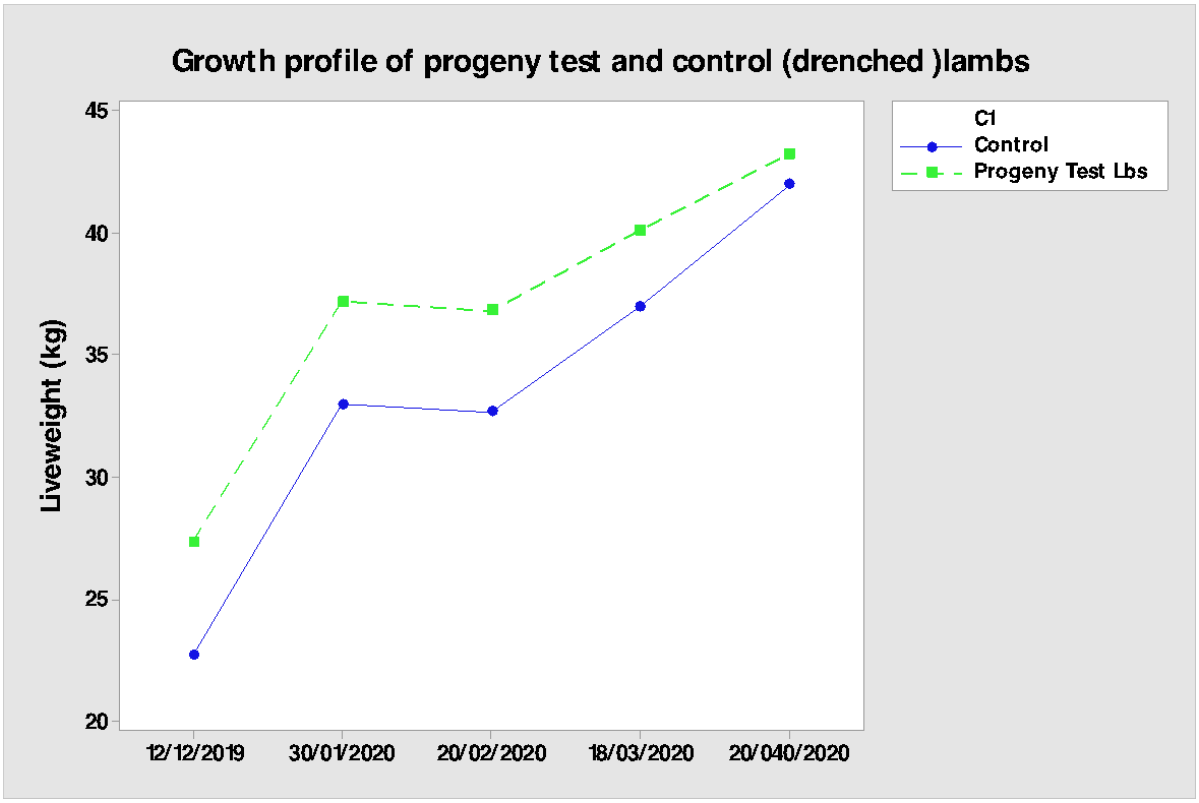
Table 5. Liveweights of male progeny test lambs and control lambs

	12/12/19	30/01/20	20/02/20	18/03/20	20/04/20	grams/day Feb to Apr
Progeny Test Lbs	27.33	37.21	36.84	40.13	43.31	107
Control	22.70	33.00	32.70	37.00	42.00	155

As variable levels of puberty behaviour was expressed in the April to May period – Table 5 (above) and Figure 4 (below) exclude this last period.

Growth rates were similar until the end of February (see Figure 4). Growth rates of the drenched lambs averaged 155 grams/day from the end of February to the end of March compared with 107 grams/day for progeny test lambs.

Figure 4. Growth profile of average progeny test and control (drenched) male lambs.



The table below shows Growth sub-index (DPG) and breeding values for weaning weight (WWTeBV), liveweight at 8 months (LW8eBV) and carcass weight based on growth (CWeBV)

Values are based on liveweight measurements recorded at weaning, in February and in March.

Table 6. Within-flock sub-index and breeding values for growth

SIL Birth ID	DPG	WWTeBV	LW8eBV	CWeBV
151.G197/14	-1093	-2.48	-5.44	-1.69
228.25/16	968	2.01	5.00	1.55
1072.737/17	-348	0.37	-3.01	-0.84
1425.209/17	253	0.67	1.25	0.37
1811.54/17	-46	-0.09	-0.18	-0.08
1811.606/17	542	1.25	2.94	0.83
2368.7165/17	15	-0.93	1.25	0.28
2629.1020/17	-472	-1.00	-2.33	-0.75
2744.51137/16	1008	2.68	4.43	1.46
2744.50985/17	303	0.94	1.16	0.40
3666.383/17	830	0.88	5.68	1.55
4480.3167/17	-117	-0.70	-0.39	-0.07
4548.3049/15	574	1.40	2.69	0.86
4591.9506/15	-632	-1.57	-3.02	-0.94
4626.2318/15	459	1.96	1.16	0.47
4851.75/17	868	1.70	4.77	1.41
4989.282/17	629	1.59	3.10	0.93
Sire Average	220	0.51	1.12	0.34

Note: Within-flock values are not comparable with other evaluations.

Parasite resistance measurements

All lambs were drenched at weaning on 12 December. Faecal Egg Counts (FEC) were measured on all ewe and male lambs on 18/02/2020 and 7/05/2020.

Levels were quite variable; some individuals having 0 and others up to 9940 egg/gram(epg). Ewe lambs had higher values than male lambs at FEC1 and lower values at FEC2.

The breeding value for FEC is a better estimate of merit as it includes all information and includes all known environmental correction factors. As minimum and maximum values can be due to a single animal being more extreme than most, the 1st and 3rd quartiles are presented to show the middle range which 50% of the lambs fall within.

It is recommended that epg should exceed 800 when sampling. Despite grazing male lambs to low residuals and reducing weight gain (to virtually 0) in the period prior to sampling, the levels averaged 463 for males. Ewe lambs averaged 1615 epg at FEC1 – see table 6.

A small number of lambs (about four) were drenched and removed from the trial for welfare reasons. The male and ewe lambs had short periods of grazing red/white clover pasture to give them a boost when their condition looked to have dropped. The remaining ram lambs remained un-drenched from weaning to processing, and ewe lambs will remain un-drenched from weaning and will be drenched prior to going onto winter crop.

Note: Robert has worked to improve the parasite resistance of the Orari Gorge ewe flock so there may be some merit contributed from ewes as well as the sires, combined with the judicious use of red/white clover pasture.

A second FEC measurement was taken in early May. The counts were reversed with females averaging 730 epg and males 2480 epg.

Table 6. Average FEC values for male and ewe lambs (faecal egg count/gram)

Males	**N**	**Mean**	**StDev**	**Min**	**Q1**	**Q3**	**Max**
FEC1	454	463	356	0	210	595	2275
FEC2	421	2480	1646	0	1330	3354	9450
Females	**N**	**Mean**	**StDev**	**Min**	**Q1**	**Q3**	**Max**
FEC1	434	1615	1431	0	665	2048	9940
FEC2	417	730	786	0	210	1033	8112

Q1 and Q3 represent the 25th and 75th percentile bands – so 50% of the animals fit between these two values. Minimums and maximum can be a few extreme animals

Table 7. Within-flock sub-index and breeding values by sire: worm resistance (DPF, FEC)

SIL Birth ID	DPF	FEC1eBV	FEC2eBV	AFECeBV
151.G197/14	930	-63.3	-71.6	-57.9
228.25/16	-524	32.7	55.1	17.0
1072.737/17	-69	10.4	-20.7	31.2
1425.209/17	738	-45.9	-54.2	-55.1
1811.54/17	-843	42.1	68.4	68.0
1811.606/17	-1178	64.4	100.9	80.5
2368.7165/17	-322	9.2	42.4	13.6
2629.1020/17	479	-25.6	-44.9	-28.5
2744.51137/16	247	-20.5	-9.1	-23.5
2744.50985/17	-127	-2.7	27.7	-0.8
3666.383/17	-287	48.7	10.5	-5.5
4480.3167/17	-443	25.1	37.6	29.8
4548.3049/15	-493	26.7	47.5	27.1
4591.9506/15	-1111	48.2	81.9	110.2
4626.2318/15	257	-7.4	-29.7	-16.3
4851.75/17	538	-27.1	-36.5	-52.6
4989.282/17	-235	15.5	21.0	11.5
Sire average	-144	7.7	13.3	8.7

- A higher DPF value indicates higher merit for parasite resistance.
- Lower or negative FEC eBVs indicate % fewer eggs per gram than the flock average, positive FEC eBV indicate % more eggs per gram than the flock average.
- Some sires are from flocks that have not been selecting for parasite resistance, and values only relate to the management and records in the low progeny flock.
- As these are within-flockvalues, they cannot be compared with other evaluations

Dag Score

All lambs were scored (DAG3) at weaning on 12/12/2019, ewe lambs were rescored (DAG8) on 10/02/2020 and male lambs on 18/02/2020. All lambs were drenched at weaning and remain un-drenched post-weaning.

A score of 0 = no dags
A score of 5 = dags around the crutch and down legs.

The grazing management and parasite burdens were different for male and ewe lambs, but overall, the scores were not that dissimilar.

Table 8. Raw dag score by sex

	DAG3	DAG8
Ewe lambs	0.61	1.53
Male lambs	0.88	2.00
Average	**0.75**	**1.77**

Table 9. Within-flock DPD and DAGeBVs

SIL Birth ID	DPD	LDAGeBV	ADAGeBV
151.G197/14	-211	2.00	1.50
228.25/16	121	-1.12	-0.89
1072.737/17	-40	0.31	0.36
1425.209/17	-93	0.89	0.66
1811.54/17	34	-0.31	-0.26
1811.606/17	-13	0.11	0.11
2368.7165/17	65	-0.50	-0.57
2629.1020/17	-27	0.23	0.21
2744.51137/16	12	-0.16	-0.04
2744.50985/17	166	-1.54	-1.23
3666.383/17	37	-0.36	-0.26
4480.3167/17	23	-0.20	-0.18
4548.3049/15	157	-1.43	-1.17
4591.9506/15	-85	0.83	0.58
4626.2318/15	22	-0.27	-0.10
4851.75/17	6	-0.10	-0.01
4989.282/17	49	-0.46	-0.35
Sire average	**13**	**0.12**	**-0.10**

- A higher value for sub-index DPD indicates higher merit (less dags)
- For Dag eBVs, a lower value indicates less dags

Dagginess is not strongly correlated with WormFEC - animals with a propensity to dags may be more sensitive to changes in feed, or have softer faecal matter.

A group of progeny test lambs at the end of March, 100 days after weaning drench

Muscle Scanning

Male lambs (448) were ultra-sound muscle scanned on 20/03/20 at an average liveweight of 40kg.

Male lambs were weighed on 18/05/2020 prior to processing on 22/05/2020. Weights were very variable – 28.5kg was the lightest, 58kg the heaviest and overall averaged 44.6kg. There were 17 lambs under 35kg.

All male lambs over 35kg (plus an under 35kg 'volunteer' who jumped in), were processed by Alliance Smithfield on 20/05/2020. ViaScan data was captured on these animals. There were some health remarks: pleurisy (45), bruising (1), abscess (1) and other (1).

Ten lambs labelled 'CUTTER' – their data is excluded from the analysis as we can't be confident of the carcass weight measurement.

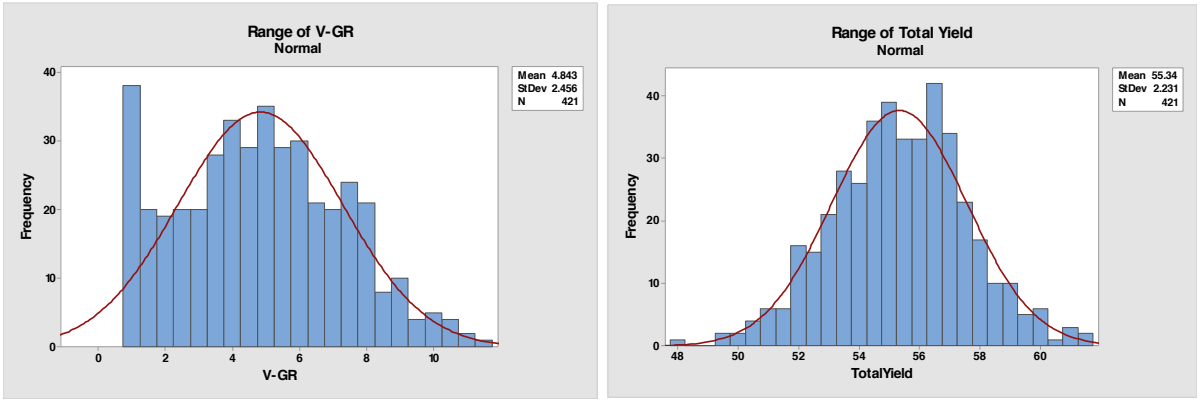
Average hot carcass weight (HCW) was 19.4 kg with a minimum of 12.3 kg and maximum of 27.3kg hot carcass weight (12 to 26.7kg cold carcass weight). The majority of carcasses were between 16.75 and 22kg. ViaScan GR fat measurements ranged from 0 to 11.6mm, and yields varied from m 48 to 61.6% (excluding cutters. Q1 and Q3 show the 25th and 75th percentile band values – so 50% of all lambs fitted between these values.

As the line was quite variable – so were the carcass parameters

Table 10. Average and range of carcass weights, GR and total yield from ViaScan.

Variable	N	Mean	StDev	Min	Q1	Q3	Max
HCW	427	19.4	2.6	12.3	17.6	21.1	27.3
V-GR	421	4.8	2.5	1.0	2.9	6.6	11.6
Total Yield	421	55.3	2.2	48.0	53.8	56.8	61.6

Figure 5. Range of GR and Yields



There was a considerable range in GR from 1mm to about 8mm, averaging 4.8mm with a few greater than 8mm.

ViaScan yield average 55% with most lambs ranging from 53 to 58%.

ViaScan data has been added into SIL and incorporated into the Meat BVs.

Table 11. Within-flock Meat yield index and Meat eBVs using all available information (ultra-sound and ViaScan)

Sire Birth ID	DPM	CWYeBV	LEANYeBV
151.G197/14	-194	0.134	-0.384
228.25/16	-203	-0.744	0.171
1072.737/17	-809	-2.599	0.311
1425.209/17	-120	-0.226	-0.093
1811.54/17	-516	-0.626	-0.324
1811.606/17	-289	-0.791	0.108
2368.7165/17	946	2.471	-0.117
2629.1020/17	-138	-0.593	0.171
2744.51137/16	368	0.168	0.350
2744.50985/17	331	0.091	0.320
3666.383/17	528	1.345	0.079
4480.3167/17	919	2.278	-0.171
4548.3049/15	114	0.505	-0.125
4591.9506/15	-515	-0.676	-0.297
4626.2318/15	413	0.714	0.122
4851.75/17	451	0.986	0.050
4989.282/17	-41	-0.377	0.145

Notes:

- A higher DPM (Dual Purpose Meat) indicates higher merit based on carcass yield.
- These are within-flock values and cannot be compared with NZGE values or other evaluations.

Male lambs with tails on, Dec 2019.

Hogget Oestrus

Seven mixed-age teaser rams with crayons were joined with ewe lambs on 1 May and exited 27 May. There are records for 441 hoggets, 175 were not marked and 266 had crayon marks. Average weight on 16 April was 34.5kg (15 days before teasers went out) and 38kg on 27 May when teasers were removed, so hoggets were gaining 129grams a day on average.

Robert commented "The top 80% with only a 20% cull rate averaged nearly 40kg, with over 70% marked. Nearly 25% of those under 35kg marked, pleased teasers and not rams"

Results

One lamb under 30kg (29kg) was marked and 33 out of 89 ewe lambs between 30 and 34.9kg were marked. Generally, as liveweights increased so did the proportion marked.

Table 12. Proportion of marked and unmarked hoggets at different weights

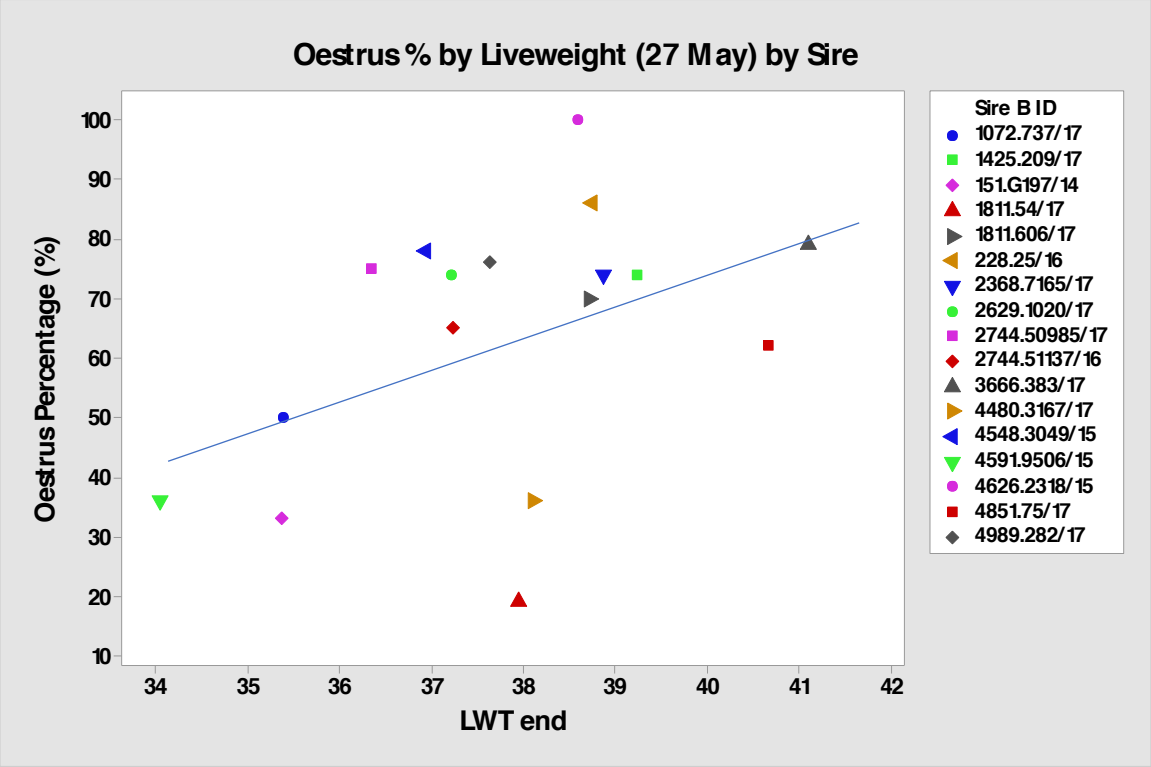
Liveweight	Marked	% Marked	Unmarked	Total
<30kg	1	5%	19	20
30-34.9kg	33	37%	56	89
35-39.8kg	110	60%	72	182
40-50kg	122	82%	27	149

Table 13. Oestrus percentage by sire
with liveweight on 27th May at end of mating period

Sire B ID	No.	Ave LWT	Oestrus Ave
151.G197/14	29	35.4	33%
228.25/16	34	38.7	86%
1072.737/17	30	35.4	50%
1425.209/17	27	39.2	74%
1811.54/17	15	38	19%
1811.606/17	19	38.7	70%
2368.7165/17	32	38.9	74%
2629.1020/17	21	37.2	74%
2744.51137/16	19	37.2	65%
2744.50985/17	13	36.3	75%
3666.383/17	32	41.1	79%
4480.3167/17	27	38.1	36%
4548.3049/15	23	36.9	78%
4591.9506/15	19	34.0	36%
4626.2318/15	27	38.6	100%
4851.75/17	26	40.7	62%
4989.282/17	24	37.6	76%

As marked may not directly relate to pregnancy scanning, no hogget indexes or BVs are available for this trait.

Figure 6. Oestrus by Liveweight



Two sires 1811.54/17 and 4480.3167/17 had lower-than-average oestrus rates for their average liveweight. The 1811 ram had slightly above-average hogget oestrus rate for its progeny average liveweight.

All daughters of 4626,2318/15, a predominantly Texel Perendale cross, were marked.

There is no BV currently for Hogget Oestrus.

Ewe lambs in yards showing teaser crayon marks, May 2020.

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