



Dairy Beef Progeny Test
Interim Sire Report: Cohort 1/2

November 2018

B+LNZ Genetics Dairy Beef Progeny Test

Phase 1: Limestone Downs

Stats

- 800 Friesian and KiwiCross cows + 220 heifers mated in 2015. 800 cows and 150 heifers mated in 2016.
- Cows mated to 31 Angus and 34 Hereford sires by AI
- Heifers naturally mated to 6 Angus and 6 Hereford sires (compared with 8 breed-average liveweight and gestation length Jersey bulls)
- Bred and finished at Limestone Downs (C. Alma Baker Trust NZ Ltd.), Port Waikato.

Objectives

1. To demonstrate the successful use of beef bulls in a dairy system and dairy-beef finishing system
2. To assess the value added by selection of high merit, recorded bulls
3. To assess the value added by use of easy calving bulls compared with Jersey bulls in a dairy system
4. To identify through a progeny test, appropriate bulls for dairy-beef systems

Phase 2: Wairakei Estate

Stats

- 1600 crossbred cows milked once-daily, mated at Wairakei Estates' Renown farm in 2017 and 2018.
- Cows are lower-merit, typical of those that would be mated to beef bulls in the dairy industry.
- Mated to 26 nominated beef sires each year and is open to all breeds.
- Calves will be reared at Wairakei, and finished on the associated Wairakei dairy support blocks at 18-28 months.

New objectives

1. Identify and prove bulls that have short gestation length, easy calving, excellent growth rates to 600 days of age and high intramuscular fat that would be suitable for widespread use in the dairy industry via AB.
2. Provide a central herd in which bulls from multiple breeds can be progeny tested and benchmarked
3. Allow comparison of finishing performance of dairy-beef versus traditional beef calves, through links with the B+LNZ Genetics BPT

Into the future

The 2018 Sire Cohort intake incorporated the Beef and Dairy Beef Progeny Tests. The objectives of Phase 2 will continue.

Understanding the sire report

This listing provides an indication of how the sires are performing within the DBPT, and can't be directly compared against BREEDPLAN EBVs. For selection purposes it is strongly advised that BREEDPLAN EBVs and selection indexes be used primarily. They are the highest accuracy information to use in selection as they take into account all available industry data. They also account for information from all known relatives and genetic correlations between traits as well as being able to be compared across cohorts and the breed population.

Interpreting the Progeny Performance Listing

Trait = The average performance of sires' progeny. This is calculated using a least squares means (LSM) model which adjusts calving traits for sex of calf and year, and rearing traits for management group and age of calf based on actual birth date. Weaning age is also adjusted for live weight at weaning.

Rank = The ranking position of the sire within the cohort. The ranking order will depend on the trait. E.g. 200 Day weight ranked in descending order, while gestation length is in ascending order. The length of the coloured bars are related to the ranking - higher ranked sires will always have longer bars.

Trait Definitions

Trait	Unit	Definition	Ranking Order
Birth Weight	Kg	Weight at birth recorded on steer and heifer progeny	Sires are ranked in ascending order with lower values indicating lighter calves at birth
Gestation Length	Days	Number of days from insemination until calving	Sires are ranked in ascending order with lower values indicating fewer days in gestation
Weaning Age	Days	Number of days from birth to weaning at a minimum of 85 kg, recorded on steer and heifer progeny	Sires are ranked in ascending order with lower values indicating fewer days till weaning
200 Day Weight	Kg	Weight at 200 days of age (6 months) recorded on steer and heifer progeny	Sires are ranked in descending order with higher values indicating more weight
400 Day Weight	Kg	Weight at 400 days of age (13 months) recorded on steer and heifer progeny	Sires are ranked in descending order with higher values indicating more weight

B+LNZ Genetics Dairy Beef Progeny Test: Cohort 1/2 summary of adjusted progeny averages (rank) across 47 sires

Breed	AB code	Sire	Calving Ease				Growth					
			Birth Weight (kg)	Rank	Gestation Length (Days)	Rank	Weaning age (days)	Rank	200 Day Weight (Kg)	Rank	400 Day Weight (Kg)	Rank
Angus	715061	BLUE MOUNTAIN BRILLIANZ O5	38.5	41	279.8	19	77.7	6	167.9	11	276.5	30
Angus	716043	EARNSCLEUGH TUSSOCK 144307	35	8	280	21	82.8	30	169.8	3	290.0	5
Angus	712171	RISSINGTON PROTEGE 110002	35.8	14	279.1	12	78.9	13	170.3	2	294.9	3
Angus	716073	GRAMPIANS LOTTERY K13	36.9	31	277.2	3	83.8	34	150.9	46	263.2	46
Angus	715103	KAKAHU 13059	36.4	26	281.8	33	77.7	6	159.8	36	265.3	44
Angus	715058	KAKAHU FOR BOND 13007	36.2	21	281.3	30	79.4	14	168.9	8	281.5	20
Angus	715060	KAKAHU JUBILANT 13054	37.2	33	279.2	13	80.1	19	169.3	6	288.2	8
Angus	710016	MATAURI REALITY 839	36.1	17	278	6	80.5	23	161.9	30	278.3	27
Angus	715105	MEADOWSLEA F540	36.3	23	277.2	3	78.4	10				
Angus	715102	MT LINTON 13041	33.2	1	280.5	27	85.5	41	160.5	34	275.7	31
Int'l Angus	711067	RENNYLEA EDMUND E11	36.8	30	279.3	14	81	24	164.2	22	281.0	22
Angus	708057	SEVEN HILLS 161-06	36.3	23	279.3	14	81.9	26	172.0	1	286.7	10
Angus	715104	SEVEN HILLS 173-06	35.2	11	276.7	2	86.6	45	155.4	41	266.3	43
Angus	716058	STORTH OAKS ANGUS PRIME K5	34.4	4	277.8	5	82.7	28	154.8	45	268.2	40
Angus	715038	STORTH OAKS EVEREST J20	35.8	14	278.5	10	85.2	40	166.1	15	282.9	16
Angus	714042	STORTH OAKS H41	38.8	44	280.2	24	78.1	9	168.6	10	290.2	4
Angus	715099	STORTH OAKS J29	35.3	12	280.4	26	83.4	31	158.6	38	273.0	36
Angus	716084	STORTH OAKS K134	41	47	279.7	17	78	8	169.4	5	296.2	2
Angus	716086	STORTH OAKS K154	38.6	42	280	21	82.7	28	168.8	9	287.1	9
Int'l Angus	713089	THOMAS UP RIVER 1614	35	8	278.2	9	80.2	21	165.2	21	282.9	17
Angus	715098	TOTARANUI 13007	36.1	17	278.9	11	80.3	22	163.3	25	279.7	25
Angus	710091	WAITANGI D213	33.8	3	282.6	36	86.1	43	161.0	33	273.7	35
Hereford	716017	ARDO BISMARCK 4256	33.6	2	279.7	17	87.6	46	159.3	37	270.0	38
Hereford	711022	ARDO EZICALVE CASPIAN	34.6	6	281	29	86.4	44	154.8	44	266.9	42
Hereford	715086	ARDO FARGO 1154	34.4	4	284.2	43	87.9	47	160.0	35	274.7	33
Hereford	716098	BEECHWOOD DOUBTLESS	36.1	17	279.8	19	79.8	17	163.9	23	284.1	15
Hereford	714037	BEECHWOOD TURK	36.6	28	281.6	31	76.7	5	162.9	27	280.4	23
Hereford	715091	BLUESTONE 080014	38.3	39	282.3	35	80.1	19	165.9	17	282.2	19
Hereford	714003	BLUESTONE 120061	36.3	23	279.6	16	84.6	38	161.0	32	272.4	37
Hereford	716087	BLUESTONE 140015	38.8	44	278.1	7	84.7	39	158.3	39	274.1	34
Hereford	716088	BLUESTONE 140027	36.2	21	275.8	1	83.8	34	163.4	24	277.4	29
Hereford	715101	COLRAINE CODE WORD 13 139	35.9	16	282.8	37	83.9	36	162.1	29	279.1	26
Hereford	716016	CRAIGMORE OPIUM 10214	36.7	29	280.1	23	85.8	42	155.1	43	265.1	45
Hereford	715073	FLAGSTAFF BIG RED E8	38.7	43	283.4	40	81.8	25	165.8	18	289.4	6
Hereford	715084	FLAGSTAFF DYNAMO G6	35.6	13	278.1	7	84.2	37	163.2	26	280.1	24
Hereford	715092	KAIRAUMATI COAL FACE 1482	38.3	39	284.6	45	74	2	167.7	12	277.8	28
Hereford	716097	KOANUI BRITON 2044	34.6	6	283.7	41	74.8	3	165.4	20	285.8	12
Hereford	703131	KOANUI ROCKET 0219 (BM)	35.1	10	282.1	34	82.2	27	169.5	4	286.5	11
Hereford	715093	KOANUI UNANIMOUS 0408	38.1	38	283.7	41	76.1	4	169.2	7	296.4	1
Hereford	715089	OKAWA MARSHALL 0109	40.4	46	289.3	47	70.5	1	165.9	16	285.6	13
Hereford	716044	ORARI GORGE MISCHIEF 120083	37.7	35	281.6	31	79.9	18	161.5	31	268.2	39
Hereford	705090	OTAPAWA SPARK 3060 (ET) (BM)	37.8	36	280.3	25	78.5	11	162.6	28	281.2	21
Hereford	666931	PLATFORM QUEBEC (BM)	37.4	34	285.7	46	79.5	15	155.5	40	268.2	41
Hereford	715087	RIVERTON BALTIC 09 183 (EZI)	37	32	284.2	43	83.7	33	167.3	14	285.0	14
Hereford	714043	TE TAUMATA DELUXE 12520	37.9	37	280.7	28	83.4	31	155.1	42	274.8	32
Hereford	715085	WESTHOLM KOALA K13	36.1	17	282.9	38	78.8	12	165.6	19	282.6	18
Int'l Hereford	712049	WIRRUNA ECHUCA E99 (IMP AUS)	36.5	27	283.2	39	79.5	15	167.5	13	288.9	7
Minimum			33.2		275.8		70.5		150.9		263.2	
Average			36.5		280.7		81.3		163.4		279.5	
Max			41.0		289.3		87.9		172.0		296.4	

To note:

Higher ranked sires have the longer colored bars – no matter the trait.

Birth weight, gestation length and weaning age - lower progeny averages are more preferable.

Proving EBVs

Expectation (Birthweight example)

1 kg in Bull EBV = 0.5 kg in actual calf birthweight

- In the calf - half the calf genes come from the dam and half from the sire. SO, we expect that half of the bulls EBV will be passed on to his calves in ACTUAL calf weight. Or, if we compare two bulls; Bull #1 EBV= 8kg, Bull #2 EBV= 4kg you would expect to see a difference of 2kg in actual average calf weight between 1 & 2.
- We expect the sires EBVs to (on average) perform well in predicting the performance of their calves. In doing this they should show a positive upward slope where groups of bulls have better EBVs and a result- their calves are better. **In a perfect world the slope of the graph would be slope = 0.5 where the EBV perfectly predicts calf performance.** However, it is most useful to see whether there is a positive trend line, as EBVs are estimated. This shows us whether selection on an EBV will deliver actual improvement on a commercial farm. How strong that trend-line is compared to the theoretical expected value of 0.5, is the relationship to look at when proving an EBV to work (or not).



Reality (Birthweight example)

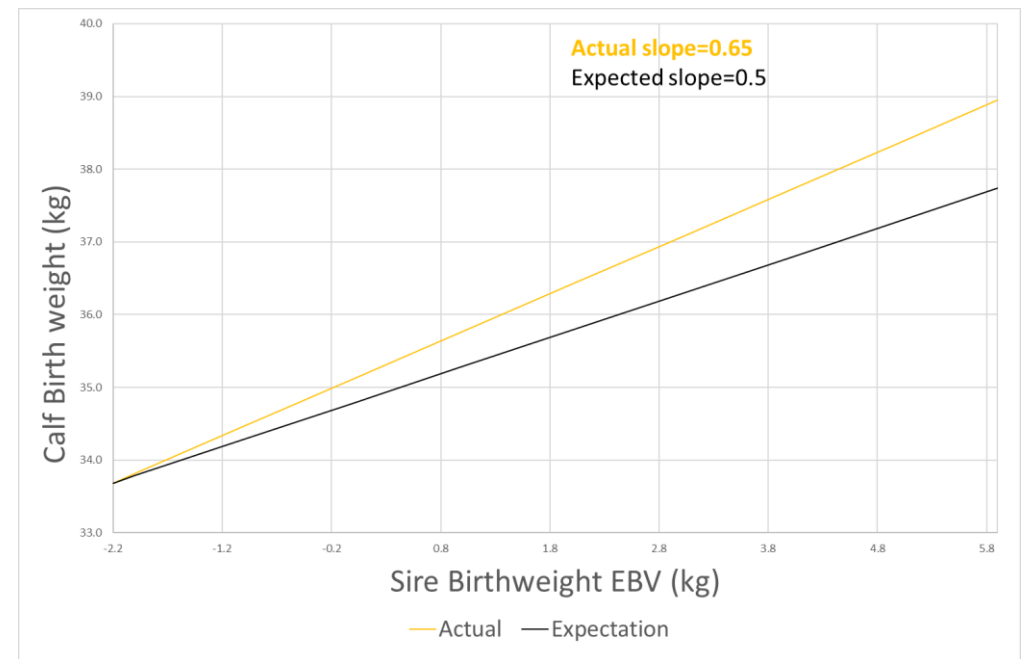
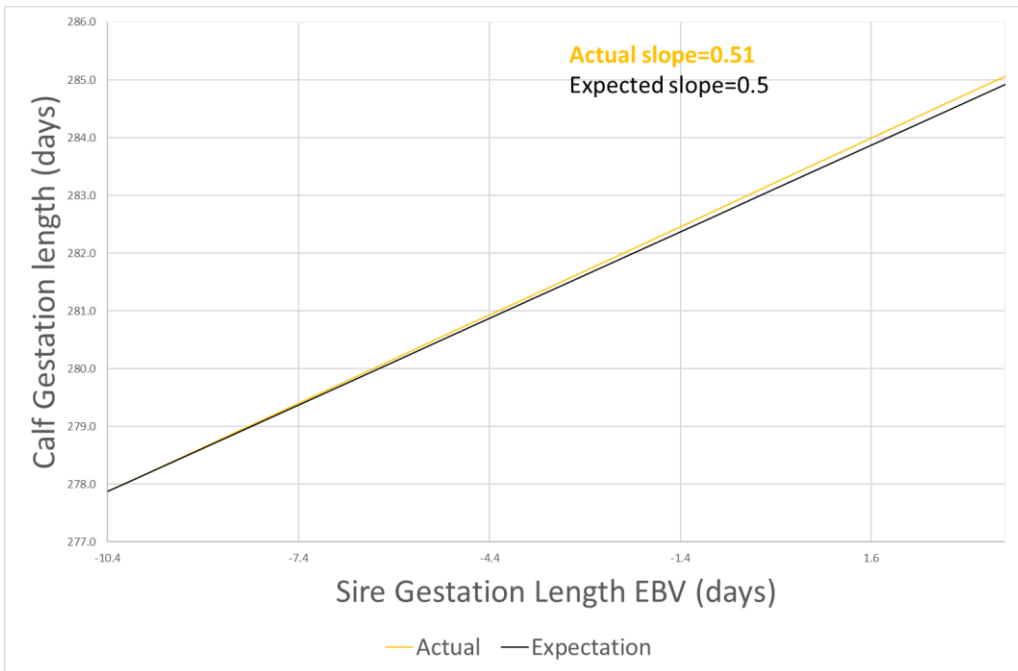
1 kg in Bull EBV = 0.65 kg in calf birth weight

- This is a strong result. In fact, the calves were slightly heavier than the sires EBV predicted. Similarly, the Gestation Length EBV did an excellent job of predicting calf performance.
- Most sires EBVs (across the traits) lined up well and predicted the performance of their calves. On average they did a good job of improving ACTUAL performance. The calving ease traits more so than the early growth traits.

So why bother?

- Most traits are developed into EBVs because they have an economic consequence or result in more or less revenue.
- **Better EBVs = better calves = better money**

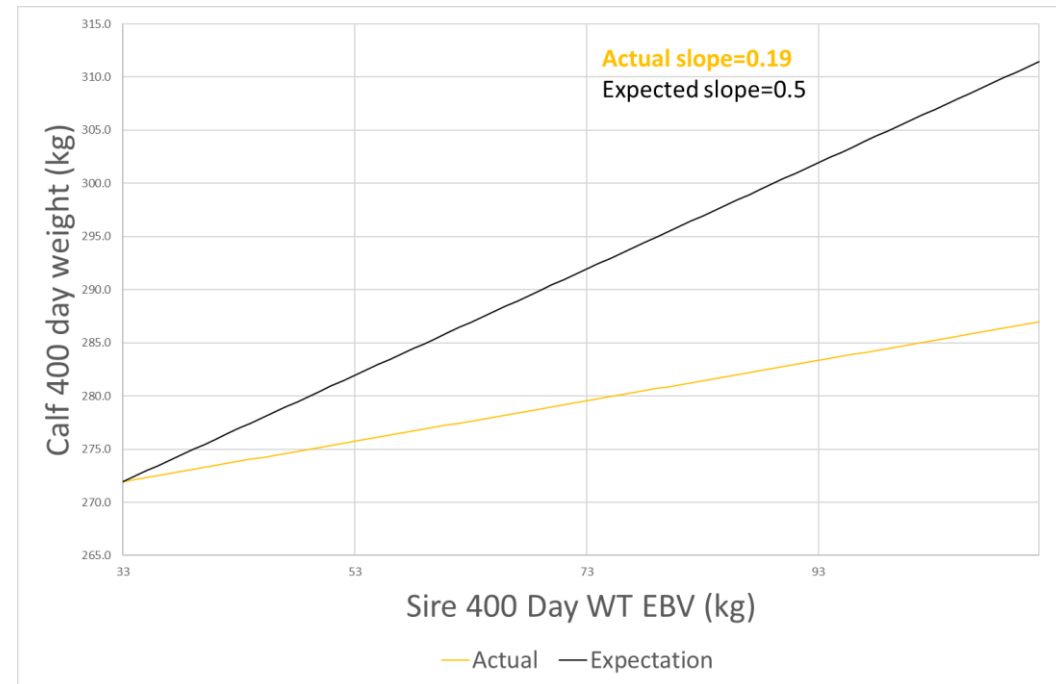
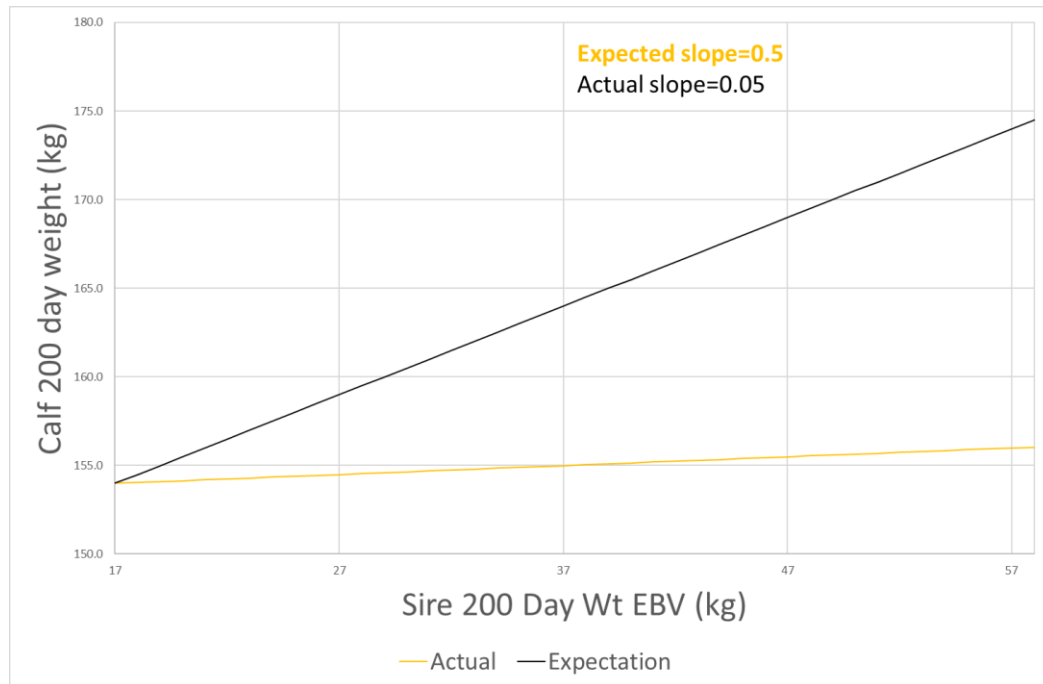
	Expectation	Reality	Result	% of EBV turned into calf performance	So why bother?
Gestation Length EBV	1 day in Bull EBV= 0.5 days in calf Gestation Length	1 day in Bull EBV= 0.51 days in calf Gestation Length	Strong	102% Calves had slightly longer GLs than expected	The shortest GL sire had calves born 14 days earlier than the longest sire. At \$5.50 per Milk Solid (1.4 MS/day) that's an extra \$107 per cow from using the better sire
Birth Weight EBV	1kg in Bull EBV = 0.5 kg in calf weight	1kg in Bull EBV = 0.65 kg in calf weight	Strong	130% Calves were slightly lighter than expected - from low birthweight bulls	Lighter birth weight calves often have reduced dystocia



	Expectation	Reality	Result	% of EBV turned into calf performance	So why bother?
200 Day Weight EBV	1kg in Bull EBV = 0.5kg in calf weight	1kg in Bull EBV = 0.05 kg in calf weight	Not significant	10% **Calves were lighter than expected	**Although sire 200 Day Wt EBV was not a good predictor of calf weight at 200 Days, it did a good job of predicting weaning age. The earliest sire weaned calves 17 days earlier than the latest sire. At 4l milk per day (at 50c per litre) that's \$34 saved per calf
400 Day Weight EBV	1kg in Bull EBV = 0.5kg in calf weight	1kg in Bull EBV = 0.19 kg in calf weight	Moderate	38% Calves were lighter than expected	The heaviest sire's calves had an extra 33kg as yearlings. At \$3/kg* that's worth an extra \$99 per calf

*Beef + Lamb New Zealand Economic Service 2018

** 200-day weight EBV was not a good predictor of live weight at 200 days in the dairy beef system. This is likely because calves were weaned to a fixed weight (min. 85 kg) so calves of lower growth bulls were fed milk for longer. In addition, the rearing environment of early-weaned dairy-beef calves is quite different to that of the pre-weaned beef calf, so different genes may be required to achieve good growth in these two different environments. This effect appears to have reduced by 400 Day Weight and is expected to do the same for 600 Day Weight as shown in the Beef Progeny Test.



Acknowledgements

The BPT project is a partnership across 2 properties, which includes the C. Alma Baker Trust NZ Ltd's Limestone Downs at Port Waikato and Pamu's Wairakei Estate at Taupo.

Industry partners: Massey University, beef breed societies.

PhD students Natalia Martin & Lucy Coleman

Participating herds: Thank you to the numerous bull owners and nominators that have entered the progeny test. For sire information please visit our website: www.blznzgenetics.com/progeny-tests

Contact

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