beef+lamb new zealand GENETICS

Beef Progeny Test
Sire Report: Cohort 2

APRIL 2019

EBVs deliver on what they predict

James van Bohemen is Farm Operations Manager at Landcorp's Rangitaiki Station. He has been involved in the B+LNZ Genetics Beef Progeny Test since Day 1. The test compares bull performance under New Zealand commercial farming conditions. To date, it's involved 8623 cow matings, 202 AI bulls and 5986 calves over four seasons.

We asked James:

Q:

What are the most valuable farmer messages, so far?

A:

1) Is it worth paying more for a bull with good EBVs? Absolutely.

2) I've seen bulls' EBVs being verified under large-scale commercial conditions for several seasons, now. I can tell you that EBVs deliver on what they predict.

Want to know more?
Visit **morebullforyourbuck.co.nz**

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EBVs work

Hamish Gibb is Assistant Manager at Mendip Hills Station. He has been involved in the B+LNZ Genetics Beef Progeny Test since Day 1. The test compares bull performance under New Zealand commercial farming conditions. To date, it's involved 8623 cow matings, 202 AI bulls and 5986 calves over four seasons.

We asked Hamish:

Q:

What are the most valuable farmer messages, so far?

A:

1) When I go to a bull sale, I know the EBVs work.

2) The better condition your herd at mating, the higher the pregnancy rate.

3) AI isn't as much work as you think, especially for the genetic gain you make.

If you live in Canterbury, come along and see for yourself.

BEEF PROGENY TEST FIELD DAY
Mendip Hills – 11am-4.30pm, Tuesday 1 May

Visit: **morebullforyourbuck.co.nz**

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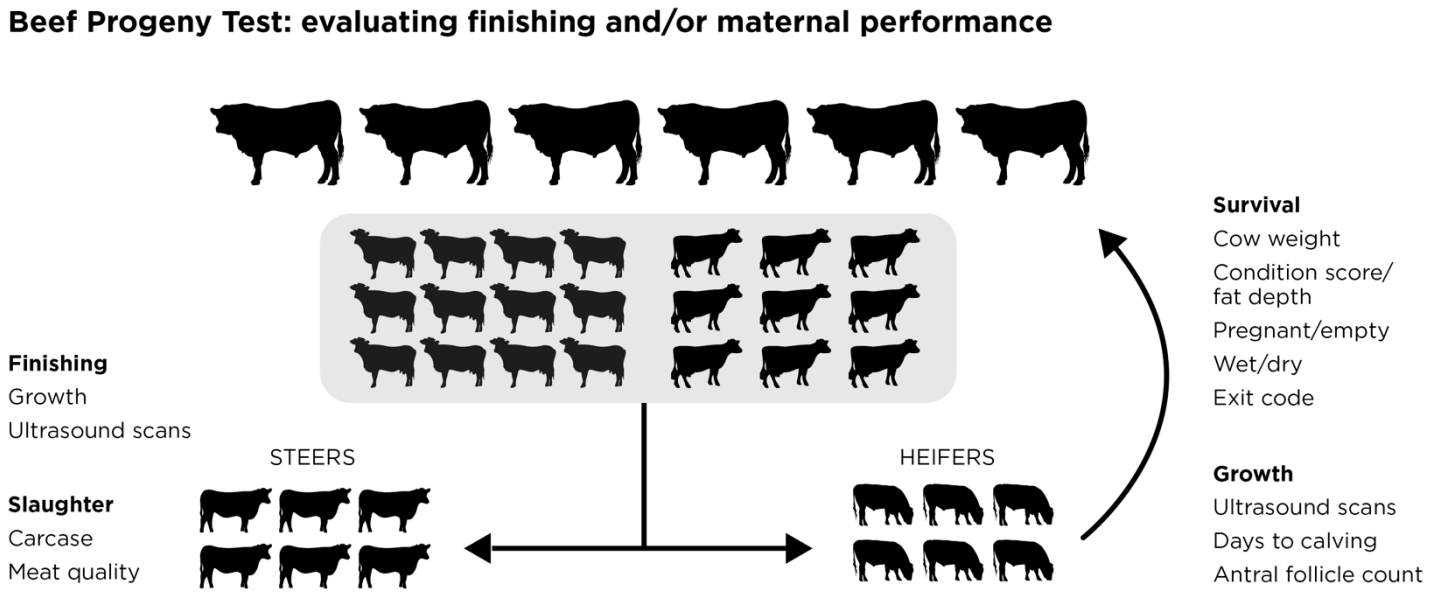
B+LNZ Genetics Beef Progeny Test

The Beef Progeny Test (BPT) compares bulls under New Zealand commercial farming conditions. The test was established in 2014 and involves mating about 2200 cows and heifers on five large properties across New Zealand every year. Steers are assessed on their finishing performance and carcase traits, while replacement heifers are tracked for their maternal characteristics.

A mix of both internationally-sourced and New Zealand semen has been used. The breeds include Angus, Hereford, Stabilizer, Simmental and Charolais. Some bulls are specifically included to provide genetic links to international programmes, where carcase data is being collected (e.g. the Australian Angus Sire Benchmark Programme, Hereford Progeny Test and Angus Sire Alliance). Over time, the test will:

- Evaluate maternal performance and survival for different cow types in commercial conditions.
- Generate potential new EBVs for cow performance – e.g. antral follicle count (measured in heifers to predict cow fertility); cow condition score; and cow stayability.
- Evaluate the relationship between maternal performance, finishing performance and carcase quality/market attributes.
- Evaluate across breeds.



Acknowledgements

The BPT project is a partnership which includes: Progeny test properties: Whangara Farms (Gisborne), Landcorp's Rangitaiki Station (Taupo), Taratahi's Tautane Station (Hawke's Bay), the Black family's Mendip Hills Station (North Canterbury) and Lonestar's Caberfeidh Farm (South Canterbury).

Project sponsors: Focus Genetics and Simmental New Zealand.

Industry partners: AbacusBio, Angus New Zealand, New Zealand Hereford Association, New Zealand Charolais Association.

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

Contact

For further questions about the Beef Progeny Test contact Max Tweedie:

Mobile: 027 404 5205

Email: max.tweedie@blnzgenetics.com

B+LNZ Genetics Dunedin office:
Phone: 03 477 6632

Science design: Jason Archer

Understanding the sire report

This listing provides an indication on how the sires are performing within the BPT, 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. BPT data will be made available for incorporating into BREEDPLAN EBVs, although current EBVs do not include the 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

N. Calves = Number of recorded progeny of both sexes by each sire. This excludes any progeny in single animal contemporary groups and largely excludes heifer progeny for abattoir carcass results- bar terminal sired heifers.

Trait = The average performance of sires' progeny. This is calculated using a least squares means (LSM) model which adjusts for herd, management group, age of dam and age of animal based on estimated conception date.

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 conception date is in ascending order. The length of the coloured bars are related to the ranking i.e. higher ranked sires will have longer bars.

Trait Definitions

Trait	Unit	Definition	Ranking Order
Weaning Weight	Kg's	Weight at weaning recorded on steer and heifer progeny	Sires are ranked in descending order with higher values indicating more weight
Yearling Weight	Kg's	Weight at 1 year recorded on steer and heifer progeny	Sires are ranked in descending order with higher values indicating more weight
18 month Weight	Kg's	Weight at 18 months recorded on steer and heifer progeny	Sires are ranked in descending order with higher values indicating more weight
Conception Date	Days	Number of days from natural bull introduction to conception- at first joining as yearling heifers. Recorded using Ultrasound scanned foetal aging	Sires are ranked in ascending order with lower values indicating fewer days to conception and improved female reproduction
Rear Legs Hind View	Transformed Beefclass structural assesment score as a deviation from ideal	Rear Legs Hind View angle recorded by accredited Beefclass asessor at 18 months on steer and heifer progeny	Sires are ranked in ascending order with lower values indicating improved structure
Front Feet Angle	Transformed Beefclass structural assesment score as a deviation from ideal	Front Feet Angle recorded by accredited Beefclass asessor at 18 months on steer and heifer progeny	Sires are ranked in ascending order with lower values indicating improved structure
Front Feet Claw Set	Transformed Beefclass structural assesment score as a deviation from ideal	Front Feet Claw Set recorded by accredited Beefclass asessor at 18 months on steer and heifer progeny	Sires are ranked in ascending order with lower values indicating improved structure

Trait	Unit	Definition	Ranking Order
Scan Eye Muscle Area (EMA)	Cm2	Area of Eye Muscle as captured at the 12th/13th rib site from ultrasound scanning both steer and heifer progeny at 18 months	Sires are ranked in descending order with higher values indicating larger eye muscle area
Scan Rib Fat	mm	Rib Fat captured at the 12th/13th rib site from ultrasound scanning both steer and heifer progeny at 18 months of age	Sires are ranked in descending order with higher values indicating more fat over the ribs
Scan Rump Fat	mm	Rump Fat captured at the P8 site from ultrasound scanning both steer and heifer progeny at 18 months of age	Sires are ranked in descending order with higher values indicating more fat over the rump
Scan Intramuscular Fat (IMF)	%	Intramuscular Fat captured at the 12th/13th rib site from ultrasound scanning both steer and heifer progeny at 18 months of age	Sires are ranked in descending order with higher values indicating more intramuscular fat
Abattoir Carcass Weight	Kg's	Weight of the hot carcass at slaughter recorded on steer progeny- and terminal sired heifers	Sires are ranked in descending order with higher values indicating more carcass weight
Abattoir Dressing Percentage	%	Weight of the hot carcass recorded on steer progeny- and terminal sired heifers, relative to liveweight at slaughter	Sires are ranked in descending order with higher values indicating more dressing
Abattoir Beef EQ Reserve Grade	%	Percentage progeny that achieved Beef EQ reserve grade, generated from the Beef EQ index- an indication of the overall eating quality of beef as influenced by a range of traits. Traits recorded by SFF Beef EQ master grader in the chiller on steer progeny- and terminal sired heifers	Sires are ranked in descending order with higher values indicating higher eating quality
Abattoir Eye Muscle Area	Cm2	Eye muscle area at the 12th/13th rib site recorded by photograph in the chiller on steer progeny- and terminal sired heifers	Sires are ranked in descending order with higher values indicating larger eye muscle areas
Abattoir Rib Fat	mm	Subcutaneous fat measurement at the 12th/13th rib site recorded by SFF Beef EQ master grader in the chiller on steer progeny- and terminal sired heifers	Sires are ranked in descending order with higher values indicating more fat over the ribs
Abattoir Marbling	MSA Marble Score	Marble score recorded by SFF Beef EQ master grader in the chiller on steer progeny- and terminal sired heifers	Sires are ranked in descending order with higher values indicating more marbling in the carcass
Abattoir Ossification	Score	Ossification score recorded by SFF Beef EQ master grader in the chiller on steer progeny- and terminal sired heifers	Sires are ranked in ascending order with lower values indicating younger physiological maturity at slaughter

Other traits

Other traits were recorded but are not included in the sire report because;

- The trait showed very little variation i.e. it is not under significant genetic control. These traits included pH, fat colour, meat colour.
- There was not enough progeny recorded for the sires average to be useful e.g. maternal traits are not recorded on terminal sire's progeny.

Proving EBVs

Expectation (Growth example)

1kg in Bull EBV = 0.5kg in actual calf weaning weight

- 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= 80kg, Bull #2 EBV= 40kg you would expect to see a difference of 20kg 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 (Growth example)

1kg in Bull EBV = 0.41kg in calf weaning weight

- This is a strong result. That means 82% of the sires EBV has been turned into extra calf weight at weaning.
- 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. In fact, **73% of the sires EBVs (that we looked at) turned into actual calf performance.**
- **If you use improved EBVs you will get improved calves.**

So why bother?

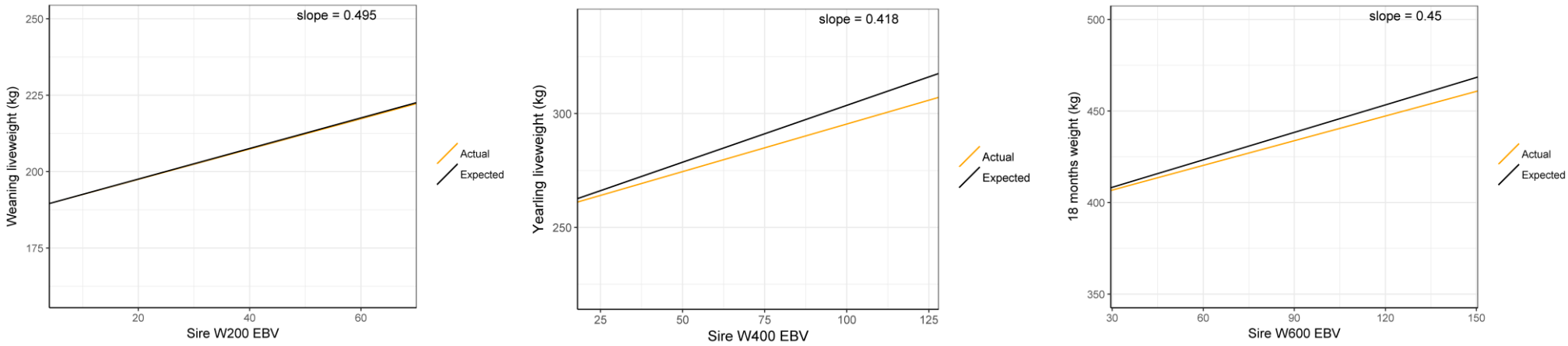
- Most traits are developed into EBVs because they have an economic consequence or result in more or less revenue.
- **Better EBVs = better calves = better money**

Proving Growth

	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 = 0.49kg *in calf weight*	Strong	99%	The heaviest sire's calves had an extra 19kg at weaning. At $4/kg* that's worth an extra $76 per calf
400 Day Weight EBV	1kg in Bull EBV = 0.5kg *in calf weight*	1kg in Bull EBV = 0.41kg *in calf weight*	Strong	82%	The heaviest sire's calves had an extra 43kg as yearlings. At $3/kg* that's worth an extra $129 per calf
600 Day Weight EBV	1kg in Bull EBV = 0.5kg *in calf weight*	1kg in Bull EBV = 0.45kg *in calf weight*	Strong	90%	The heaviest sire's calves had an extra 66kg at 18 months. At $3/kg* that's worth an extra $198 per calf

* Beef + Lamb NZ Economic Service 2018

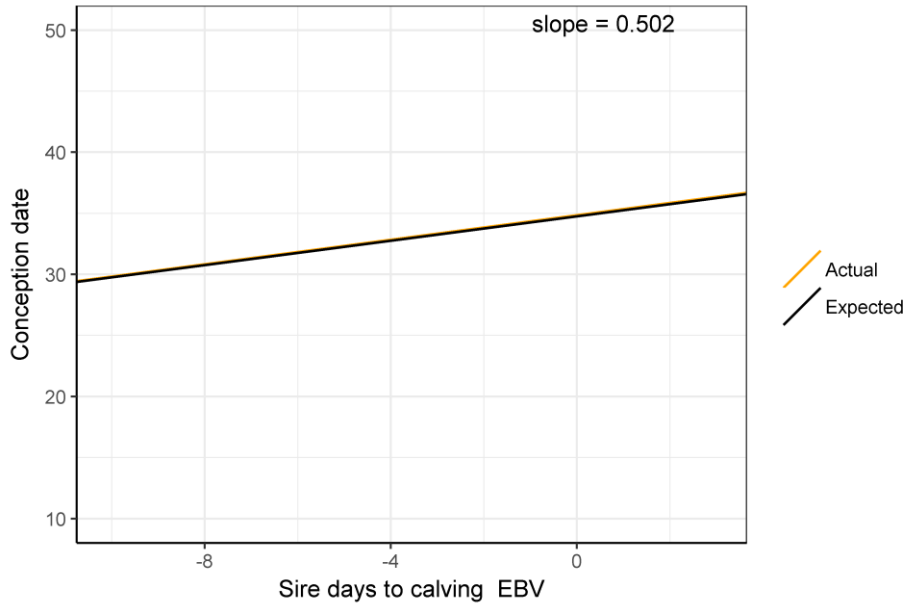
Proving Growth: Matching EBVs to actual calf weight (expected slope = 0.5)



Proving Fertility

	Expectation	Reality	Result	% of EBV turned into calf performance	So why bother?
Days to Calving EBV*	1day in Bull EBV = 0.5 days *in heifer conception date- days to calving**	1kg in Bull EBV = 0.50 days *in heifer conception date*	Strong	100%	Cows that get in calf early have more productive lifetimes. 1 day of conception date results in an approximate extra 1% calving rate. That's an extra calf at $900 or $9 per cow

* Conception date as recorded in the BPT is calculated similarly to DTC but doesn't include Gestation length and is based off conception.



B+LNZ Genetics Beef Progeny Test: Cohort 2 summary of adjusted progeny averages (rank) across 52 sires

					Growth						Fertility		Structure					
Breed	Born	Name	Herdbook number	N. Calves	Wean Wt (kg)	Rank	Yearling Wt (kg)	Rank	18 mth Wt (kg)	Rank	Conception date (days)	Rank	Rear Leg Hind View (deviation from ideal)	Rank	Front Feet Angle (deviation from ideal)	Rank	Front Feet Claw Set (deviation from ideal)	Rank
NZ Angus	2014	FOCUS 143143	194990143143	24	209.0	11	280.3	15	450.8	4	26.4	14	0.95	40	0.86	32	0.87	48
NZ Angus	2013	FOCUS 131511	194730131511	22	201.1	50	266.3	50	432.2	40	26.4	17	1.03	50	0.82	21	0.85	39
NZ Angus	2013	FOCUS 131539	194730131539	26	202.1	48	272.3	43	420.2	50	26.6	25	0.98	44	0.83	22	0.87	50
NZ Angus	2013	KAKAHU BOND 13007	13300013007	21	205.0	31	279.3	21	436.8	31	26.0	1	0.82	17	0.82	19	0.82	22
NZ Angus	2013	KAKAHU JUBILANT 13054	13300013054	22	210.6	5	275.1	34	429.7	43	26.6	26	0.81	14	0.83	23	0.82	23
NZ Angus	2013	LINTON 13543	20305013543	18	204.1	37	274.6	37	431.9	41	26.6	28	0.81	15	0.84	28	0.80	15
NZ Angus	2010	MEADOWSLEA F540	19134010540	18	206.0	24	278.7	22	436.2	33	26.7	32	0.84	20	0.86	31	0.78	6
NZ Angus	2006	MT MABLE FAT BOY 373	12188006373	23	200.4	51	264.7	51	417.7	51	26.3	6	0.77	5	0.86	30	0.83	32
NZ Angus	2013	STORTH OAKS EVEREST J20	19507013J20	33	204.8	33	277.7	25	432.3	38	26.6	30	0.99	47	0.94	45	0.83	34
NZ Angus	2013	STORTH OAKS JACK J7	19507013J7	31	210.2	6	279.4	20	454.6	2	26.5	19	0.94	39	0.85	29	0.83	31
NZ Angus	2013	TE MANIA JONAH 13588	16932013588	29	204.5	35	269.7	47	436.9	30	26.9	35	0.85	23	0.84	26	0.77	3
NZ Angus	2009	TURIHAUA SIR CRUMBLE E222	17691009E222	31	207.7	18	277.5	26	438.5	26	26.4	8	0.73	3	0.84	25	0.81	18
NZ Angus	2008	WAITANGI D213	18954008D213	24	203.0	45	272.0	44	431.4	42	26.4	9	0.91	36	0.77	11	0.78	7
NZ Angus	2012	WHANGARA 12323	13649012323	25	209.3	9	280.0	16	443.8	12	26.1	3	0.79	11	0.89	38	0.85	43
Intl Angus	2012	DEER VALLEY ALL IN (USA)	US17307074	27	209.5	8	286.1	3	439.0	23	26.7	33	0.96	41	0.93	44	0.85	41
Intl Angus	2011	V A R RESERVE 1111 (USA)	US16916944	18	208.1	16	271.2	45	427.6	46	26.4	16	0.99	48	0.88	36	0.83	30
Intl Angus	2011	TE MANIA GARTH G67	AUVTMG67	25	206.7	20	283.5	8	445.0	9	26.6	27	1.03	51	0.94	46	0.88	51
Intl Angus	2008	TUWHARETOA REGENT D145 (AUS)	AUBNAD145	40	209.0	10	278.2	23	442.0	15	26.1	2	0.91	37	0.89	39	0.86	46
NZ Hereford	2011	ARDO FARGO 1154	277111154	25	199.9	52	261.0	52	421.1	49	26.4	15	0.83	19	0.97	50	0.84	38
NZ Hereford	2008	BLUESTONE 080014	1683080014	6	205.8	27	279.6	19	432.9	37	26.4	11	0.90	34	0.75	7	0.80	14
NZ Hereford	2013	COLRAINE CODE WORD 13 139	1660130139	18	203.5	44	274.7	36	455.2	1	26.3	7	0.88	32	0.79	14	0.84	37
NZ Hereford	2008	GRASSMERE SPARK 555	200080555	19	202.4	47	275.1	35	440.1	19	26.4	13	0.76	4	0.76	10	0.79	10
NZ Hereford	2012	KOANUI CHIEFLY 2510	216122510	13	208.0	17	281.5	11	440.7	18	26.5	21	0.86	26	0.86	33	0.85	40
NZ Hereford	2010	KOANUI UNANIMOUS 0408	216100408	12	201.5	49	273.2	41	433.7	36	26.7	31	0.90	35	1.04	52	0.82	28
NZ Hereford	2012	LIMEHILLS STAMPER 20719	677120719	18	208.2	15	275.9	31	439.4	21	26.5	20	0.84	21	0.75	5	0.80	16
NZ Hereford	2011	MONYMUSK GALLANT 110089	272110089	11	203.6	43	272.9	42	449.2	6	26.5	18	0.77	6	0.81	17	0.79	9
NZ Hereford	2012	OKAWA MAJOR 2008	617120008	16	206.1	22	276.3	29	438.6	25	26.4	10	0.88	31	0.75	8	0.79	13
NZ Hereford	2012	ORARI GORGE MISCHIEF 120083	0400120083	19	210.9	4	285.8	4	428.4	45	26.4	12	1.00	49	0.90	42	0.79	12
Intl Hereford	2011	EFBEEF U208 FORTUNE Y848 (USA)	US43187500	25	204.9	32	273.3	40	424.1	48	26.6	24	0.86	24	0.95	48	0.82	25
Intl Hereford	2009	WIRRUNA ECHUCA E99	AUWNAE99	25	208.7	12	279.7	18	438.7	24	26.3	5	0.87	27	0.87	35	0.82	29
NZ Stabilizer	2012	FOCUS BIG GENE 121293	121293	25	211.7	2	283.4	9	442.3	13	26.5	22	1.11	52	0.69	1	0.79	11
NZ Stabilizer	2012	FOCUS FOREFRONT 121599	121599	30	203.0	46	275.3	33	432.3	39	26.6	23	0.87	28	0.78	13	0.80	17
NZ Stabilizer	2013	FOCUS FORCEFUL 135159	135159	20	204.3	36	270.9	46	416.8	52	26.1	4	0.97	42	1.00	51	0.77	5
NZ Stabilizer	2013	FOCUS TRINITY 135263	135263	19	204.6	34	281.4	12	438.3	27	26.6	29	0.63	1	0.70	2	0.85	42
NZ Stabilizer	2013	FOCUS PORTERHOUSE 135361	135361	31	205.1	29	274.4	38	427.5	47	26.7	34	0.98	45	0.97	49	0.95	52
NZ Simmental	2014	GLENSIDE CATALYST C23	1312AC0023	14	203.9	40	268.7	48	434.8	35			0.78	8	0.75	6	0.73	1
NZ Simmental	2009	KERRAH AX49	1667AX0049	13	205.7	28	279.9	17	439.1	22			0.97	43	0.87	34	0.86	47
NZ Simmental	2013	KERRAH BANDWAGON B306	1667AB0306	14	204.0	38	267.3	49	435.7	34			0.79	9	0.80	16	0.86	44
NZ Simmental	2013	KERRAH BANKER B464	1667BB0464	14	206.4	21	283.9	7	441.8	16			0.88	33	0.80	15	0.81	21
NZ Simmental	2014	RISSINGTON AC244	0049AC0244	10	205.9	25	278.1	24	445.6	8			0.83	18	0.82	20	0.82	26
NZ Simmental	2013	WAIKITE AB2038	1455AB2038	14	203.8	41	276.3	30	442.1	14			0.98	46	0.76	9	0.81	20
NZ Simmental	2012	WAIKITE AMPLE AA2241	1455AA2241	14	203.8	42	276.8	28	438.1	28			0.87	29	0.88	37	0.81	19
NZ Simmental	2014	WAIKITE AC2016	1455AC2016	5	205.9	26	281.0	13	444.7	10			0.86	25	0.95	47	0.84	35
Intl Simmental	2012	CDI RIMROCK 325Z (USA)	US2700121	13	212.3	1	288.2	1	453.3	3			0.78	7	0.71	3	0.77	4
Intl Simmental	2008	HOOKS YELLOWSTONE 97Y (USA)	US2612546	15	210.0	7	277.2	27	439.8	20			0.85	22	0.72	4	0.78	8
Intl Simmental	2003	RIVERBEND TAMARACK 60N PF (CAN)	CA618651	12	208.6	13	274.1	39	437.9	29			0.91	38	0.78	12	0.75	2
NZ Charolais	2013	CENTREWOOD 130516	001130516E	14	206.1	23	280.7	14	443.9	11			0.82	16	0.90	41	0.86	45
NZ Charolais	2011	HEMINGFORD GAMBLER G44	803110044E	6	205.0	30	275.5	32	441.5	17			0.79	10	0.84	27	0.83	33
NZ Charolais	2007	KAITOKE COMMODORE C22	471070022E	12	211.0	3	284.0	6	446.5	7			0.88	30	0.90	40	0.82	27
NZ Charolais	2011	SILVERSTREAM GEDDES G102	083110102D	13	204.0	39	285.2	5	428.5	44			0.80	13	0.90	43	0.84	36
NZ Charolais	2004	SIMCA HILLS VEEDUB	133040035E	6	208.3	14	287.4	2	449.8	5			0.80	12	0.82	18	0.82	24
Intl Charolais	2010	LEACHMAN WHITE GOLD P0002X (USA)	USM796550	6	207.5	19	281.6	10	436.6	32			0.73	2	0.83	24	0.87	49
Minimum				**5**	**199.9**		**261.0**		**416.8**		**26.0**		**0.63**		**0.69**		**0.73**	
Average				**19**	**206.1**		**277.1**		**437.4**		**26.5**		**0.87**		**0.84**		**0.82**	
Maximum				**40**	**212.3**		**288.2**		**455.2**		**26.9**		**1.11**		**1.04**		**0.95**	
											Lower number more preferrable		Lower number more preferrable		Lower number more preferrable		Lower number more preferrable	

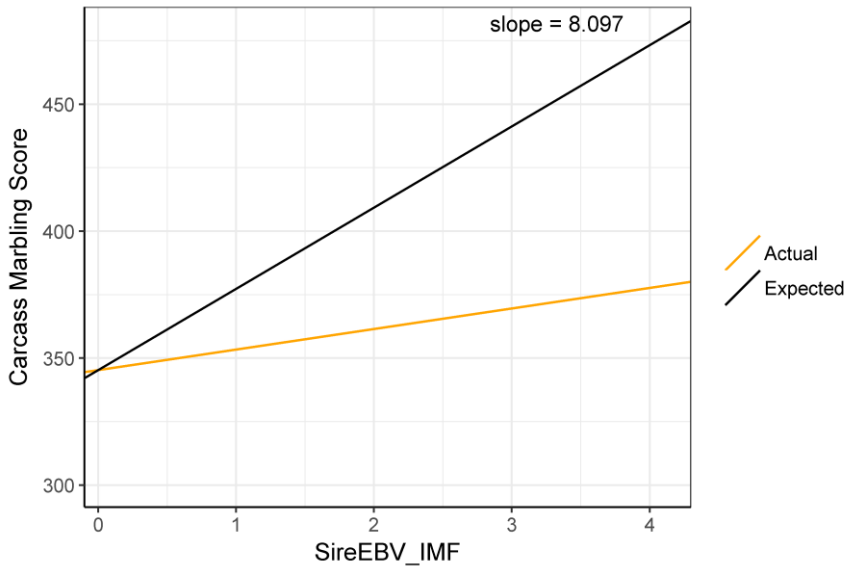
To note: Longer colored bars are associated with higher rank- which is more preferable

Proving Carcass: At the works

	Expectation	Reality	Result	% of EBV turned into calf performance	So why bother?
Rib Fat EBV	1mm in Bull EBV= 0.5mm *in calf rib fat*	1mm in Bull EBV= 0.75mm *in calf rib fat*	Strong	151%	If premiums total 40c/kg for high quality carcass' from processors that grade for rib fat that's worth an extra $120 per carcass. A minimum of 3mm rib fat is required in most grading systems to avoid cold shortening (tough meat)
Eye Muscle Area EBV	1cm2 in Bull EBV= 0.5 cm2 *in calf EMA*	1cm2 in Bull EBV= 0.33 cm2 *in calf EMA*	Moderate	67%	Improved eye muscle area is associated with increased meat yield or dressing percentage
Intra Muscular Fat EBV*	1% in Bull EBV= 32 *in calf MSA Marble Score**	1% in Bull EBV= 8.0 *in calf MSA Marble Score*	Satisfactory	25%	If premiums total 40c/kg for high quality carcass' from processors that grade for Marble Score that's worth an extra $120 per carcass. Marbling is a key reason for carcass' failing to meet EQ grading systems specifications
Carcass Weight EBV	1kg in Bull EBV= 0.5kg *in calf carcass weight*	1kg in Bull EBV= 0.15kg *in calf carcass weight*	Satisfactory	32%	The heaviest sire's calves had an extra 17kg of cwt. At $5.50/kg** that's worth an extra $93.50 per carcass

*MSA marble score has been scaled to relate to IMF%. So expectation is moderate.

** Beef + Lamb NZ Economic Service 2018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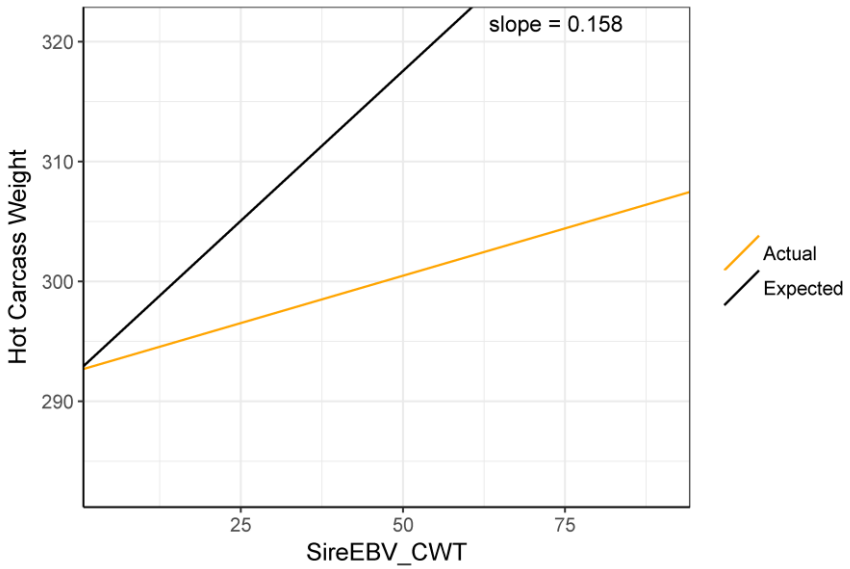
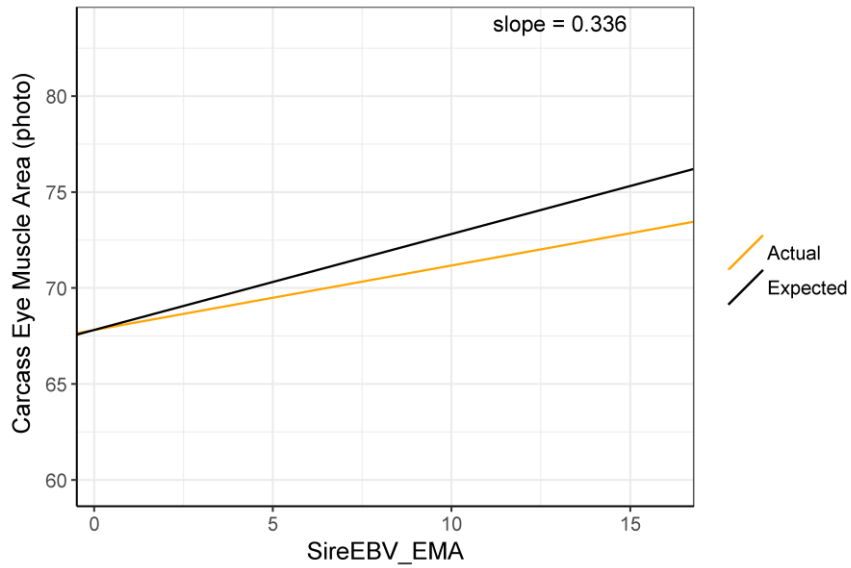
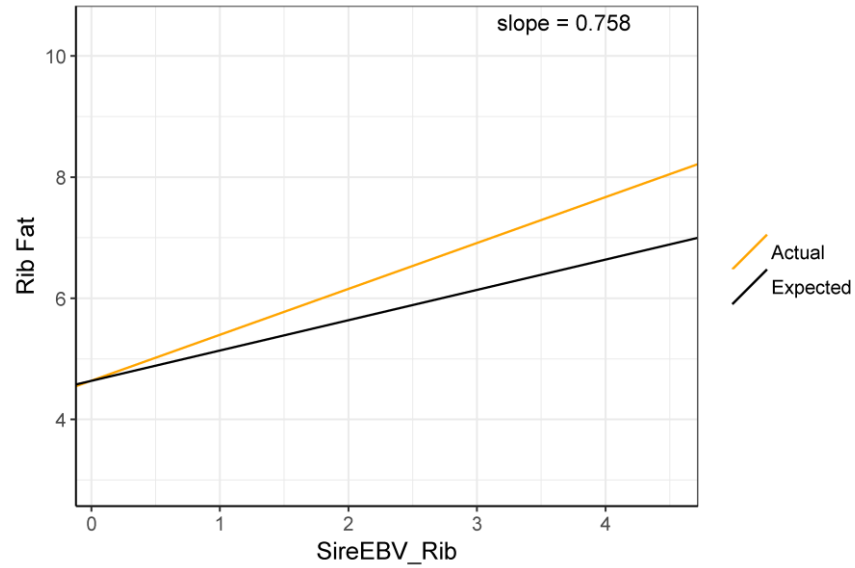
Carcass Marbling Score
450
400
350
300
0
1
2
3
4
SireEBV_IMF
Actual
Expected

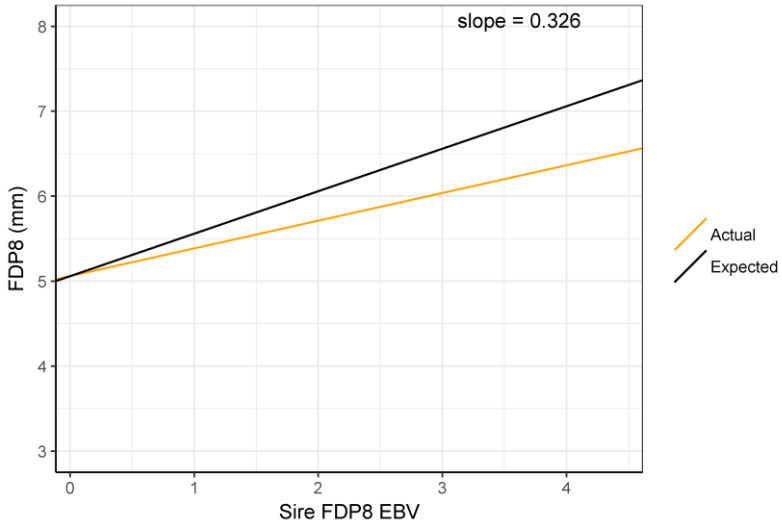

slope = 0.158
Hot Carcass Weight
320
310
300
290
25
50
75
SireEBV_CWT
Actual
Expected

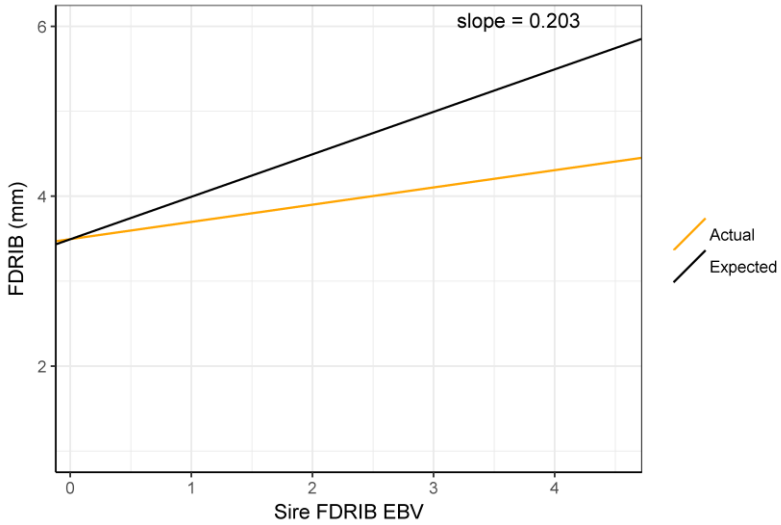

slope = 0.336
Carcass Eye Muscle Area (photo)
80
75
70
65
60
0
5
10
15
SireEBV_EMA
Actual
Expected

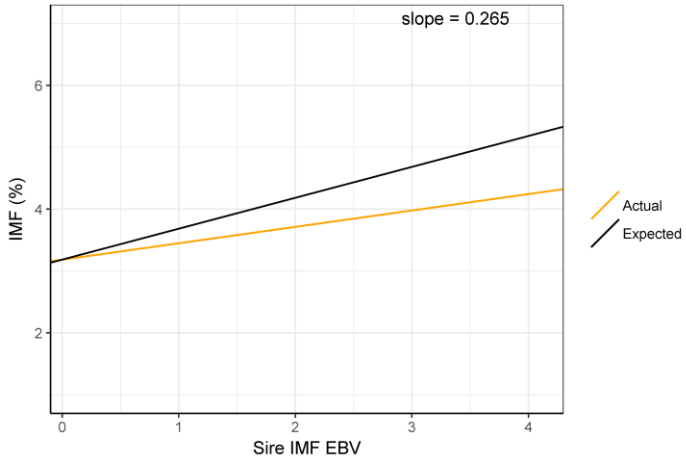

slope = 0.758
Rib Fat
10
8
6
4
0
1
2
3
4
SireEBV_Rib
Actual
Expected

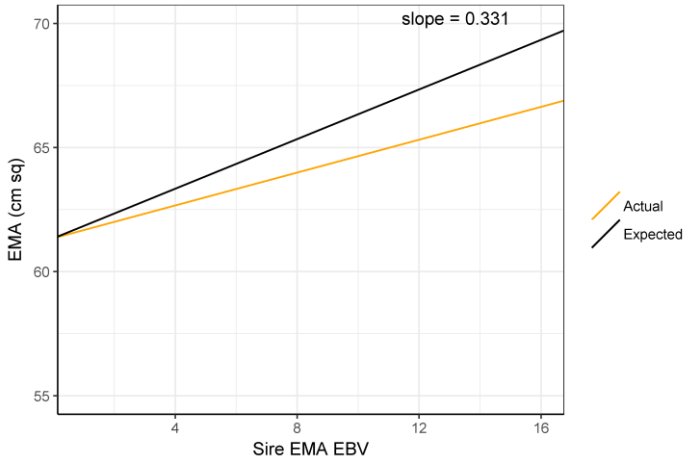
Proving Carcass: Ultrasound Scanning

	Expectation	Reality	Result	% of EBV turned into calf performance	So why bother?
Rib Fat EBV	1mm in Bull EBV= 0.5mm *in calf rib fat*	1mm in Bull EBV= 0.20mm *in calf rib fat*	Satisfactory	40%	If premiums total 40c/kg for high quality carcass' from processors that grade for rib fat that's worth an extra $120 per carcass.
Rump Fat EBV	1mm in Bull EBV= 0.5mm *in calf rump fat*	1mm in Bull EBV= 0.32mm *in calf rump fat*	Moderate	65%	
Eye Muscle Area EBV	1cm2 in Bull EBV= 0.5 *cm2 in calf EMA*	1cm2 in Bull EBV= 0.33 *cm2 in calf EMA*	Moderate	66%	
Intra Muscular Fat EBV	1% in Bull EBV= 0.5% *in calf IMF%*	1% in Bull EBV= 0.27% *in calf IMF%*	Moderate	54%	





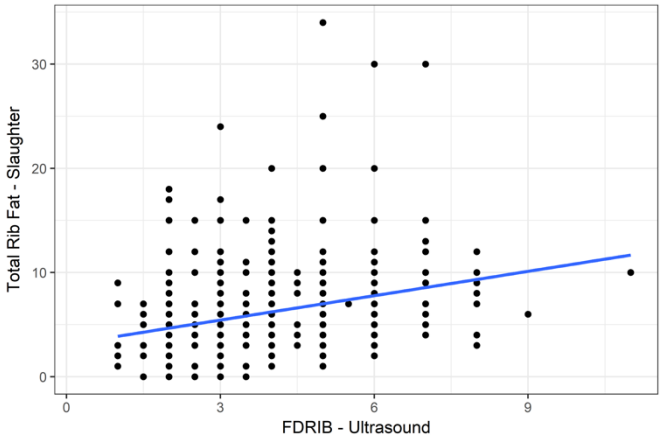


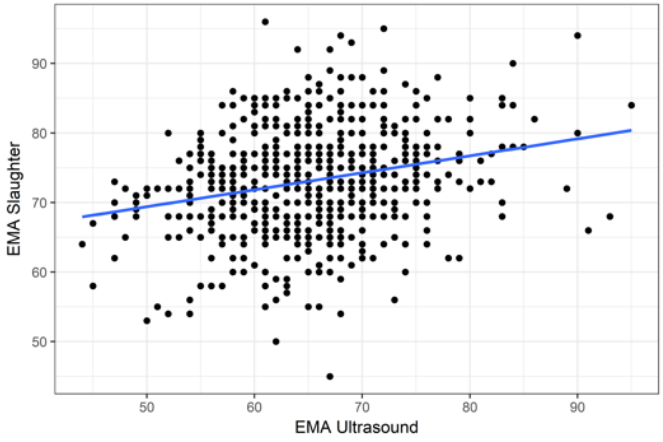


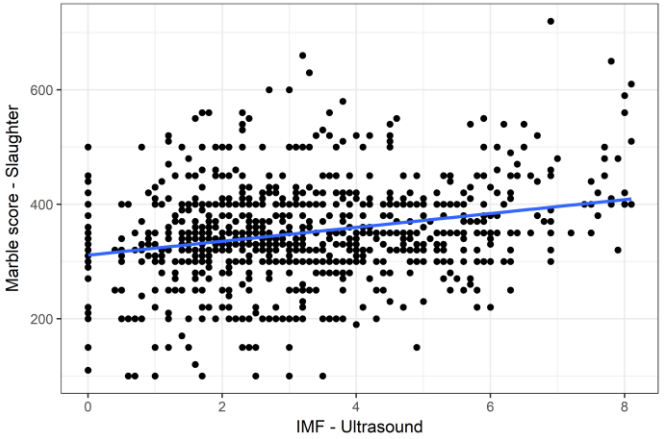
Relationship between Ultrasound scanning traits (for carcass) and abattoir collected carcass traits

Differences due to:

- Time between scanning and slaughter was up to a year for some mobs
- Other research shows a moderate relationship between scanning and carcass traits (phenotypically)
- There has been no abattoir carcass data from NZ submitted to BREEDPLAN analyses and ultrasound scanning has facilitated good levels of genetic gain internationally. It is still the most useful data for carcass analysis as most pedigree cattle cannot be killed in slaughter groups that are large enough to be useful i.e. small numbers of cull heifers and bulls rather than whole mobs of steers as has been possible in the BPT.







B+LNZ Genetics Beef Progeny Test: Cohort 2 summary of adjusted progeny averages (rank) across 52 sires

					Carcass - Ultrasound Scanning								Carcass- Abattoir											
Breed	Born	Name	Herdbook number	N. Calves	Scan Eye Muscle Area (cm2)	Rank	Scan Rib Fat (mm)	Rank	Scan Rump Fat (mm)	Rank	Scan IMF (%)	Rank	Carcass Wt (kg)	Rank	Dressing %	Rank	Beef EQ Reserve Grade (%)	Rank	Fat Depth (12/13th rib mm)	Rank	Marbling	Rank	Ossification	Rank
NZ Angus	2014	FOCUS 143143	194990143143	24	65.3	14	3.8	13	5.5	22	3.4	14	306.7	42	53.83%	44	45.9%	14	7.1	5	351.9	34	145.6	6
NZ Angus	2013	FOCUS 131511	194730131511	22	64.9	20	4.3	3	6.5	3	4.0	2	309.2	26	54.29%	16	45.7%	15	6.3	13	351.9	33	145.9	9
NZ Angus	2013	FOCUS 131539	194730131539	26	62.5	48	3.3	33	5.2	36	3.4	17	307.6	38	54.26%	17	42.2%	40	6.1	20	384.6	3	146.8	21
NZ Angus	2013	KAKAHU BOND 13007	13300013007	21	63.2	44	3.7	15	5.9	12	3.5	8	312.1	10	54.39%	12	44.0%	28	6.2	15	351.7	36	148.8	43
NZ Angus	2013	KAKAHU JUBILANT 13054	13300013054	22	63.2	43	3.5	24	5.0	39	3.4	9	313.8	5	54.10%	26	43.8%	30	7.0	6	364.2	13	148.8	41
NZ Angus	2013	LINTON 13543	20305013543	18	63.5	40	3.6	23	5.9	11	3.1	23	308.1	34	54.06%	30	45.3%	19	6.7	7	355.9	26	145.9	7
NZ Angus	2010	MEADOWSLEA F540	19134010540	18	63.6	37	3.7	17	5.6	21	3.4	11	306.8	40	53.93%	36	44.9%	22	6.3	14	360.9	16	147.4	27
NZ Angus	2006	MT MABLE FAT BOY 373	12188006373	23	63.5	39	3.7	19	5.3	29	3.0	34	307.6	36	54.07%	28	45.3%	18	5.1	48	349.0	41	144.8	3
NZ Angus	2013	STORTH OAKS EVEREST J20	19507013J20	33	63.4	41	4.1	5	6.2	8	3.5	6	305.8	47	53.52%	49	43.7%	31	7.6	2	366.5	8	148.8	42
NZ Angus	2013	STORTH OAKS JACK J7	19507013J7	31	63.6	36	3.4	30	5.2	35	3.6	4	305.9	46	52.91%	52	43.2%	35	5.7	37	360.2	17	148.0	36
NZ Angus	2013	TE MANIA JONAH 13588	16932013588	29	64.6	25	3.4	31	5.3	34	3.2	22	304.0	51	53.31%	51	44.8%	23	6.2	16	346.3	46	146.2	13
NZ Angus	2009	TURIHAUA SIR CRUMBLE E222	17691009E222	31	64.2	31	3.0	47	5.1	37	2.5	47	309.5	24	53.81%	46	39.8%	50	5.8	31	331.9	51	145.9	10
NZ Angus	2008	WAITANGI D213	18954008D213	24	62.4	49	3.8	12	5.8	15	2.8	40	303.6	52	53.83%	43	43.2%	36	5.9	25	351.6	38	147.3	26
NZ Angus	2012	WHANGARA 12323	13649012323	25	64.4	28	3.6	22	5.4	26	3.5	7	318.5	1	54.34%	15	41.5%	47	5.9	27	364.9	11	146.9	23
Intl Angus	2012	DEER VALLEY ALL IN (USA)	US17307074	27	63.6	38	3.1	42	4.7	47	3.1	25	312.4	8	54.37%	14	48.1%	8	6.7	8	387.9	2	147.8	32
Intl Angus	2011	V A R RESERVE 1111 (USA)	US16916944	18	64.4	29	3.1	41	4.8	44	3.1	31	309.4	25	54.17%	21	44.2%	27	6.0	22	357.6	23	146.3	15
Intl Angus	2011	TE MANIA GARTH G67	AUVTMG67	25	64.3	30	4.1	7	6.5	4	3.6	3	313.8	4	53.70%	48	45.0%	21	7.2	4	350.0	39	146.0	11
Intl Angus	2008	TUWHARETOA REGENT D145 (AUS)	AUBNAD145	40	65.3	13	4.4	2	6.3	7	4.3	1	310.4	20	53.96%	35	52.6%	2	7.5	3	389.9	1	146.8	20
NZ Hereford	2011	ARDO FARGO 1154	277111154	25	61.5	52	3.7	16	5.9	13	3.1	27	306.6	43	53.85%	42	45.4%	17	5.6	40	347.3	44	145.1	4
NZ Hereford	2008	BLUESTONE 080014	1683080014	6	63.6	35	3.5	25	5.7	18	3.2	21	308.2	32	53.82%	45	46.2%	11	5.9	29	360.0	19	149.0	44
NZ Hereford	2013	COLRAINE CODE WORD 13 139	1660130139	18	62.9	45	3.7	18	5.3	33	3.1	24	311.4	14	53.79%	47	42.0%	42	5.9	30	357.8	22	146.6	18
NZ Hereford	2008	GRASSMERE SPARK 555	200080555	19	64.2	32	3.9	10	6.0	9	3.4	12	312.0	11	53.91%	37	42.8%	39	6.6	9	360.1	18	150.6	49
NZ Hereford	2012	KOANUI CHIEFLY 2510	216122510	13	63.8	34	4.1	6	6.5	2	3.1	28	311.5	13	54.21%	19	49.3%	5	6.1	18	364.5	12	147.7	30
NZ Hereford	2010	KOANUI UNANIMOUS 0408	216100408	12	62.3	51	3.2	39	5.3	31	2.7	41	305.5	49	53.96%	33	42.2%	41	6.3	12	345.0	47	147.7	31
NZ Hereford	2012	LIMEHILLS STAMPER 20719	677120719	18	66.0	7	3.3	34	5.3	30	2.7	42	308.7	28	54.47%	7	47.0%	9	6.4	10	346.9	45	145.9	8
NZ Hereford	2011	MONYMUSK GALLANT 110089	272110089	11	65.4	12	3.6	20	5.6	20	3.4	13	308.7	27	53.91%	39	46.1%	12	6.1	19	348.6	42	146.9	22
NZ Hereford	2012	OKAWA MAJOR 2008	617120008	16	62.8	46	3.0	44	4.9	41	2.8	38	307.5	39	53.46%	50	41.7%	44	5.9	28	354.1	30	147.6	29
NZ Hereford	2012	ORARI GORGE MISCHIEF 120083	0400120083	19	62.4	50	3.9	9	6.0	10	3.0	35	306.7	41	53.91%	38	41.8%	43	5.6	38	356.3	24	149.7	47
Intl Hereford	2011	EFBEEF U208 FORTUNE Y848 (USA)	US43187500	25	64.2	33	3.5	26	5.4	25	3.0	33	305.3	50	54.23%	18	46.9%	10	4.9	51	356.3	25	148.5	39
Intl Hereford	2009	WIRRUNA ECHUCA E99	AUWNAE99	25	62.7	47	4.1	4	6.4	5	3.3	18	308.2	33	54.03%	31	44.3%	26	6.1	17	363.3	14	146.0	12
NZ Stabilizer	2012	FOCUS BIG GENE 121293	121293	25	66.6	3	2.9	50	4.4	50	3.1	29	314.9	3	54.77%	1	43.4%	34	5.4	43	355.5	27	151.7	52
NZ Stabilizer	2012	FOCUS FOREFRONT 121599	121599	30	63.2	42	3.3	37	5.5	23	3.4	15	306.2	45	54.39%	11	55.6%	1	5.6	41	381.5	4	150.7	50
NZ Stabilizer	2013	FOCUS FORCEFUL 135159	135159	20	64.5	27	3.8	11	5.5	24	3.3	20	306.2	44	54.48%	6	41.6%	46	5.1	49	351.6	37	149.2	45
NZ Stabilizer	2013	FOCUS TRINITY 135263	135263	19	66.9	1	4.8	1	7.2	1	3.4	10	313.2	6	54.39%	10	44.3%	25	8.3	1	353.0	31	150.1	48
NZ Stabilizer	2013	FOCUS PORTERHOUSE 135361	135361	31	64.9	18	3.0	46	4.7	46	3.3	19	308.6	29	54.44%	8	40.2%	48	4.6	52	336.2	50	143.4	1
NZ Simmental	2014	GLENSIDE CATALYST C23	1312AC0023	14	66.0	9	3.0	48	5.4	28	2.6	44	311.1	15	54.71%	2	43.4%	33	5.2	47	351.7	35	146.5	16
NZ Simmental	2009	KERRAH AX49	1667AX0049	13	66.3	4	2.6	52	4.1	52	2.4	50	310.3	21	54.18%	20	45.6%	16	5.0	50	365.7	9	149.4	46
NZ Simmental	2013	KERRAH BANDWAGON B306	1667AB0306	14	66.3	5	3.9	8	5.7	17	3.6	5	310.6	18	54.08%	27	48.6%	7	5.7	35	378.4	5	147.0	24
NZ Simmental	2013	KERRAH BANKER B464	1667BB0464	14	64.9	21	3.7	14	5.9	14	3.1	30	311.7	12	54.03%	32	43.1%	37	5.7	36	357.9	21	146.8	19
NZ Simmental	2014	RISSINGTON AC244	0049AC0244	10	66.0	6	3.5	27	6.4	6	2.8	39	310.6	19	53.96%	34	49.4%	4	6.0	24	365.6	10	147.3	25
NZ Simmental	2013	WAIKITE AB2038	1455AB2038	14	64.7	24	3.4	29	5.4	27	2.4	49	309.7	23	54.11%	25	39.1%	51	5.9	26	325.9	52	147.9	35
NZ Simmental	2012	WAIKITE AMPLE AA2241	1455AA2241	14	65.1	16	2.9	49	4.5	49	2.4	48	310.7	17	54.37%	13	43.0%	38	5.4	44	342.4	49	147.8	34
NZ Simmental	2014	WAIKITE AC2016	1455AC2016	5	64.6	26	3.6	21	5.3	32	3.0	32	312.3	9	53.88%	41	43.8%	29	6.4	11	362.4	15	147.4	28
Intl Simmental	2012	CDI RIMROCK 325Z (USA)	US2700121	13	65.7	10	3.3	36	4.9	40	3.4	16	308.2	31	54.53%	4	49.9%	3	5.2	46	377.6	6	148.1	37
Intl Simmental	2008	HOOKS YELLOWSTONE 97Y (USA)	US2612546	15	65.2	15	3.2	38	4.9	42	3.1	26	315.5	2	54.49%	5	44.4%	24	6.1	21	342.6	48	146.2	14
Intl Simmental	2003	RIVERBEND TAMARACK 60N PF (CAN)	CA618651	12	64.9	19	2.9	51	4.3	51	2.4	52	308.0	35	54.12%	24	40.2%	49	5.3	45	355.1	28	151.6	51
NZ Charolais	2013	CENTREWOOD 130516	001130516E	14	66.0	8	3.3	35	5.8	16	2.8	37	310.1	22	54.14%	23	49.0%	6	5.5	42	367.3	7	144.7	2
NZ Charolais	2011	HEMINGFORD GAMBLER G44	803110044E	6	65.5	11	3.0	45	4.5	48	2.6	45	311.0	16	54.60%	3	43.7%	32	5.8	34	349.1	40	145.6	5
NZ Charolais	2007	KAITOKE COMMODORE C22	471070022E	12	65.0	17	3.1	43	5.1	38	2.4	51	307.6	37	53.90%	40	37.4%	52	5.8	33	347.3	43	148.3	38
NZ Charolais	2011	SILVERSTREAM GEDDES G102	083110102D	13	64.7	22	3.3	32	4.8	45	2.6	46	305.6	48	54.06%	29	41.7%	45	5.6	39	354.6	29	147.8	33
NZ Charolais	2004	SIMCA HILLS V EEDUB	133040035E	6	66.9	2	3.2	40	4.9	43	2.6	43	312.6	7	54.42%	9	45.1%	20	5.8	32	352.3	32	148.6	40
Intl Charolais	2010	LEACHMAN WHITE GOLD P0002X (USA)	USM796550	6	64.7	23	3.5	28	5.6	19	2.9	36	308.6	30	54.15%	22	45.9%	13	6.0	23	358.4	20	146.5	17
Minimum				**5**	**61.5**		**2.6**		**4.1**		**2.4**		**303.6**		**52.91%**		**37.4%**		**4.6**		**325.9**		**143.4**	
Average				**19**	**64.4**		**3.5**		**5.4**		**3.1**		**309.4**		**54.09%**		**44.6%**		**6.0**		**357.1**		**147.5**	
Maximum				**40**	**66.9**		**4.8**		**7.2**		**4.3**		**318.5**		**54.77%**		**55.6%**		**8.3**		**389.9**		**151.7**	

To note: Longer colored bars are associated with higher rank- which is more preferable. Ranked on increased fattness. Ranked on increased fattness. Ranked on increased fattness. Lower number more preferrable

In summary

Expectation

- 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

- 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. In fact, **73% of the sires EBVs (that we looked at) turned into actual calf performance.**
- **If you use improved EBVs you will get improved calves**.

So why bother?

- **Better EBVs = better calves = better money**