beef+lamb new zealand GENETICS

Beef Progeny Test Sire Report: Cohort 1

July 2018

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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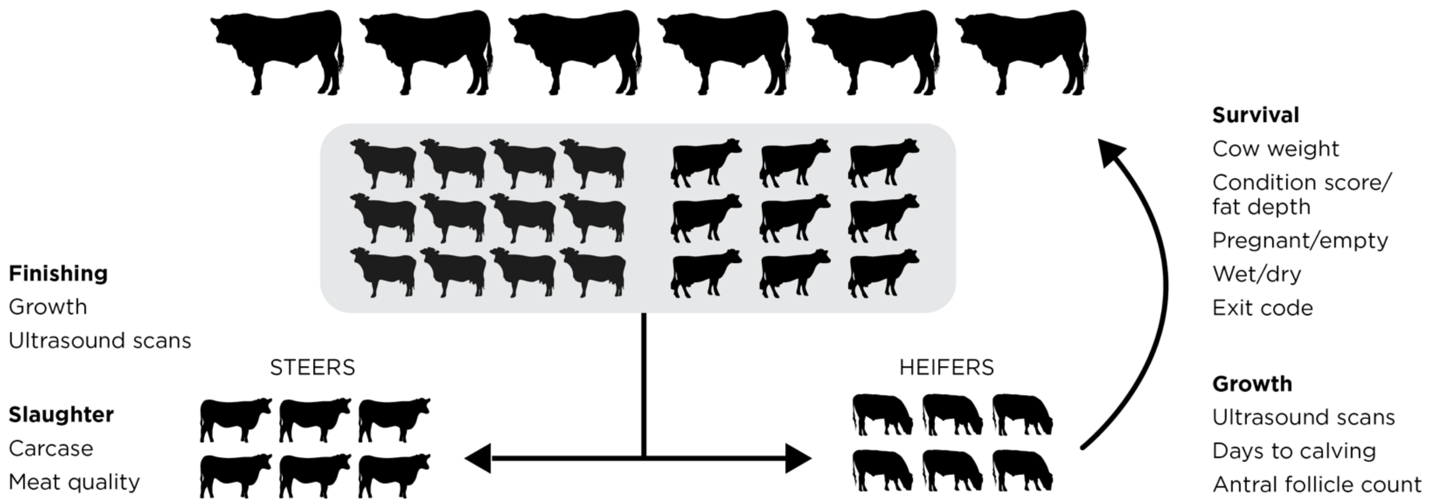
B+LNZ Genetics Beef Progeny Test

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.

Beef Progeny Test: evaluating finishing and/or maternal performance



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:

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

Project manager: 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?

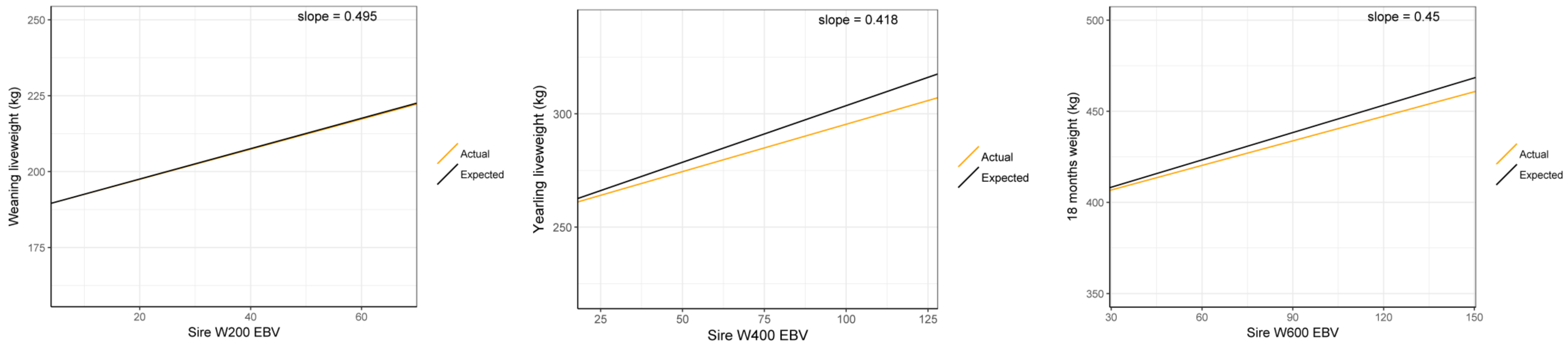
- Most traits are developed into EBVs because they have an economic consequence or result in more or less revenue.
- **Better EBVs = better calves = better money**

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

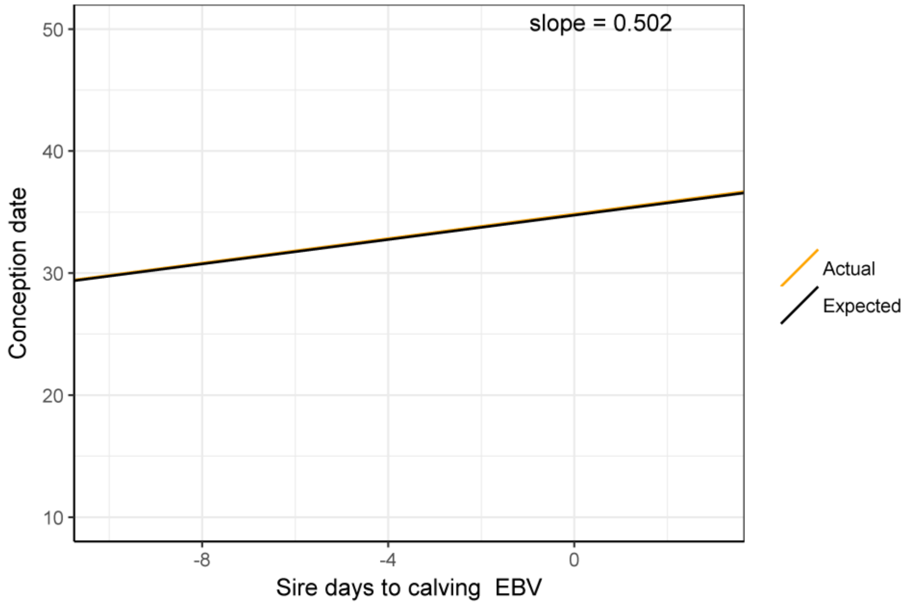
Proving Growth: Matching EBVs to actual calf weight (expected slope = 0.5)



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 1 summary of adjusted progeny averages (rank) across 52 sires

				Growth						Fertility		Structure					
Breed	Born	Name	N Prog.	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	2010	Rissington Prominent 100104	22	204	22	266	31	443	13	25.1	27	0.75	9	0.95	48	0.83	38
NZ Angus	2010	Pinebank 64/10	21	203	34	254	50	417	51	24.6	4	0.74	8	0.83	27	0.71	5
NZ Angus	2011	Te Mania 11 553	24	205	15	261	41	429	40	25.6	39	1.00	48	0.91	41	0.79	26
NZ Angus	2012	Rissington Resolute 120992	14	202	36	268	24	428	41	24.9	15	0.78	15	0.94	46	0.84	40
NZ Angus	2012	Glanworth Waigroup 1213	22	198	50	266	32	430	38	25.2	32	0.87	29	0.65	2	0.63	1
NZ Angus	2013	Rissington 135057	21	202	39	264	37	422	49	24.6	3	0.88	35	0.89	38	0.75	10
NZ Angus	2013	Rissington Analyst 135252 (ET)	27	204	21	268	25	437	27	25.2	29	1.14	52	0.85	31	0.79	27
NZ Angus	2013	Rissington 135262 (ET)	22	206	9	274	12	444	10	24.9	17	0.71	7	1.05	52	0.85	44
NZ Angus	2009	Ngaputahi Eureka E38	24	202	42	261	42	425	46	24.7	10	0.88	34	0.83	24	0.75	12
NZ Angus	2009	Turihaua Crump E5	25	199	49	268	26	430	39	24.9	19	0.69	6	0.78	17	0.72	7
NZ Angus	2010	Matauri Outlier F031	32	203	33	266	33	448	9	25.3	34	0.87	32	0.94	47	0.84	41
NZ Angus	2012	Tangihau Kaino H29	27	204	20	262	40	432	34	25.6	38	0.97	45	0.92	44	0.88	50
NZ Angus	2012	Storth Oaks H41	17	204	27	276	10	441	18	24.6	2	0.83	24	0.93	45	0.91	51
NZ Angus	2013	Mt Linton 13007	17	200	47	251	52	415	52	24.7	7	0.94	43	0.89	37	0.81	31
NZ Angus	2011	Totaranui 238 (ET)	27	211	2	270	20	441	19	25.5	37	0.64	4	0.63	1	0.75	9
NZ Angus	2012	Fossil Creek Hero H006	23	197	51	256	49	431	35	25.2	30	0.87	30	0.74	10	0.77	18
NZ Angus	2008	Matauri Reality 839	25	204	25	267	29	430	37	25.3	33	0.92	42	0.84	29	0.79	21
NZ Angus	2007	Turihaua Liberation C27	34	201	44	260	44	426	44	25.0	22	0.77	14	0.84	30	0.68	2
Intl Angus	2010	PA Safeguard 121 (USA)	31	204	19	273	16	435	29	25.0	24	0.82	23	0.82	23	0.77	16
Intl Angus	2012	HPCA Intensity (USA)	21	204	24	278	5	435	31	24.7	9	0.88	33	0.73	9	0.70	4
Intl Angus	2012	GAR Momentum (USA)	17	204	23	273	15	440	21	25.2	31	1.02	50	0.88	36	0.84	42
Intl Angus	2011	Conneally Revenue 7392 (USA)	23	205	16	272	17	427	42	25.9	41	0.99	46	0.81	20	0.82	37
Intl Angus	2008	EF COMPLEMENT 8088 (USA)	19	196	52	261	43	432	33	25.3	35	1.02	49	0.82	22	0.82	34
Intl Angus	2009	S A V Bruiser 9164 (USA)	17	206	8	275	11	437	25	24.7	6	0.87	31	0.92	42	0.82	36
Intl Angus	2009	Rennylea Edmund E11 (AUS)	27	207	7	277	8	438	24	25.0	21	0.75	10	0.87	35	0.79	20
Hereford	2000	Koanui Rocket 0219	21	203	29	264	35	441	16	24.8	12	0.89	37	0.81	19	0.91	52
Hereford	2003	Otapawa Spark 3060	27	208	6	278	7	444	11	24.7	8	0.60	1	0.68	6	0.71	6
Hereford	2010	Beechwood Turk	12	202	41	259	45	425	45	25.0	23	0.82	22	0.90	39	0.87	48
Hereford	2010	Okawa Marshall 0109	15	203	32	267	30	441	17	24.7	11	0.81	19	0.83	26	0.79	24
Hereford	2011	Waikaka Turning Point 110015	13	203	31	264	36	437	26	25.1	26	0.85	26	0.77	15	0.76	14
Hereford	2012	Bluestone 120061	29	200	48	257	48	431	36	24.8	13	0.95	44	0.78	16	0.79	25
Hereford	2007	Matariki Holy Smoke	12	206	11	265	34	438	22	24.9	18	0.76	11	0.81	21	0.79	22
Hereford	2004	Nithdale Elvis	13	206	13	269	22	440	20	25.1	28	0.85	25	0.86	32	0.87	47
Hereford	2007	Okawa Davis 7046	19	201	45	262	39	435	30	24.9	16	1.00	47	0.75	11	0.82	32
Intl Hereford	2008	Wirruna Daffy D1 (AUS)	22	202	37	254	51	424	47	24.6	5	0.60	3	0.86	33	0.86	46
Intl Hereford	2001	Glendan Park Top Gun W42 (AUS)	8	204	26	258	47	437	28	25.0	25	0.91	40	0.91	40	0.80	28
Stabilizer	2012	Focus Big Gene 121293	14	206	12	270	19	442	14	25.0	20	1.10	51	0.67	5	0.75	11
Stabilizer	2012	Focus Forefront 121599	29	200	46	268	27	432	32	25.4	36	0.88	36	0.79	18	0.76	13
Stabilizer	2013	Focus Forceful 135159	20	202	40	262	38	417	50	24.3	1	0.90	39	1.00	51	0.73	8
Stabilizer	2013	Focus Trinity 135263	18	202	38	269	23	438	23	24.9	14	0.82	21	0.76	12	0.77	17
Stabilizer	2013	Focus Porterhouse 135361	30	202	35	270	21	427	43	25.7	40	0.91	41	1.00	50	0.88	49
Simmental	2013	Kerrah Yes Sir AY393	15	203	28	276	9	454	5			0.81	20	0.83	25	0.78	19
Simmental	2012	Waikite AA2036	11	206	14	273	14	457	4			0.80	17	0.73	8	0.81	30
Simmental	2012	Kerrah A456	15	210	3	287	2	452	7			0.65	5	1.00	49	0.85	43
Simmental	2012	Glenside Atomic A5	11	209	4	278	6	461	3			0.76	12	0.66	3	0.80	29
Simmental	2013	Rissington AB5185	10	209	5	280	3	463	2			0.85	27	0.84	28	0.79	23
Simmental	1998	Tokaweka Handsome AH801	15	205	18	271	18	449	8			0.77	13	0.66	4	0.70	3
Simmental	2007	Rissington New Standard AU158	15	215	1	295	1	482	1			0.60	2	0.77	14	0.83	39
Simmental	2009	Kerrah Xfactor AX187 (ET)	12	201	43	273	13	424	48			0.79	16	0.69	7	0.76	15
Simmental	2010	Glen Anthony Y-Arta AY02 (ET)	12	205	17	258	46	444	12			0.80	18	0.76	13	0.82	33
Charolais	1999	Silverstream Performer	7	203	30	267	28	442	15			0.89	38	0.86	34	0.82	35
Intl Charolais	2010	Welcome Swallow Easy Gain F508 (AUS)	7	206	10	280	4	453	6			0.85	28	0.92	43	0.86	45
Minimum			**7**	**196**		**251**		**415**		**24.3**		**0.60**		**0.63**		**0.63**	
Average			**19**	**204**		**268**		**437**		**25.0**		**0.84**		**0.83**		**0.79**	
Maximum			**34**	**215**		**295**		**482**		**25.9**		**1.14**		**1.05**		**0.91**	

To note:

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

Fertility: A lower number is more preferable

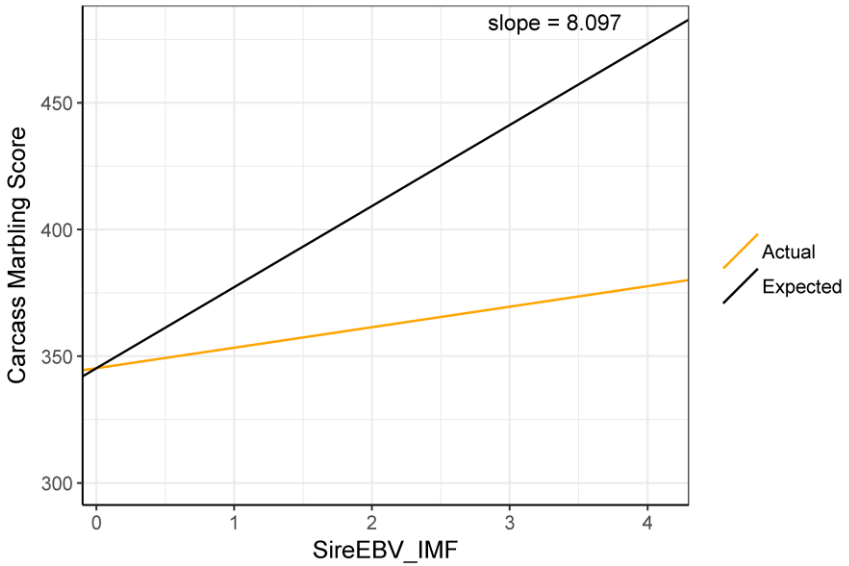
Structure: A lower number is more preferable

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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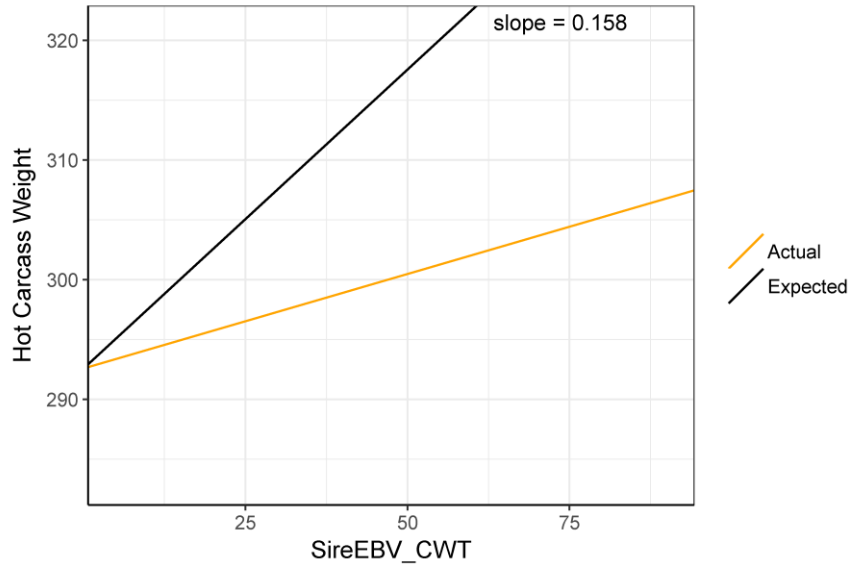
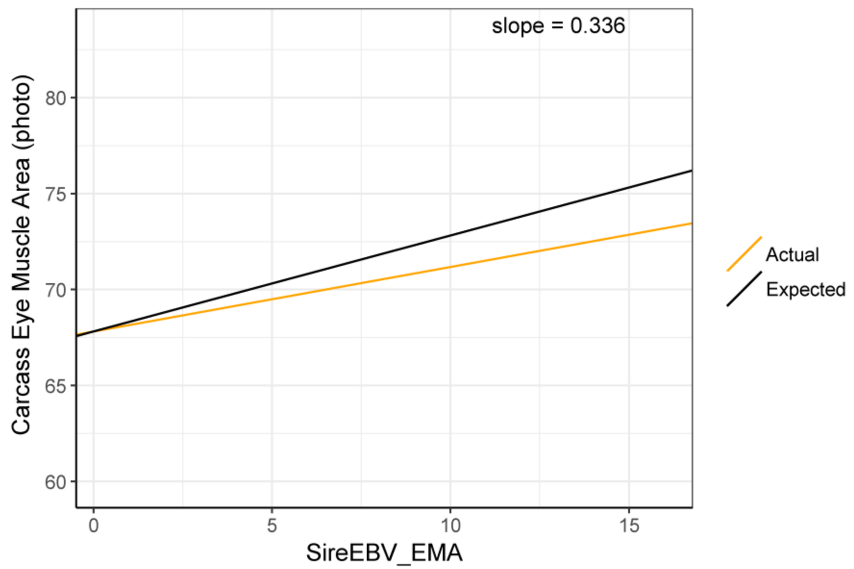
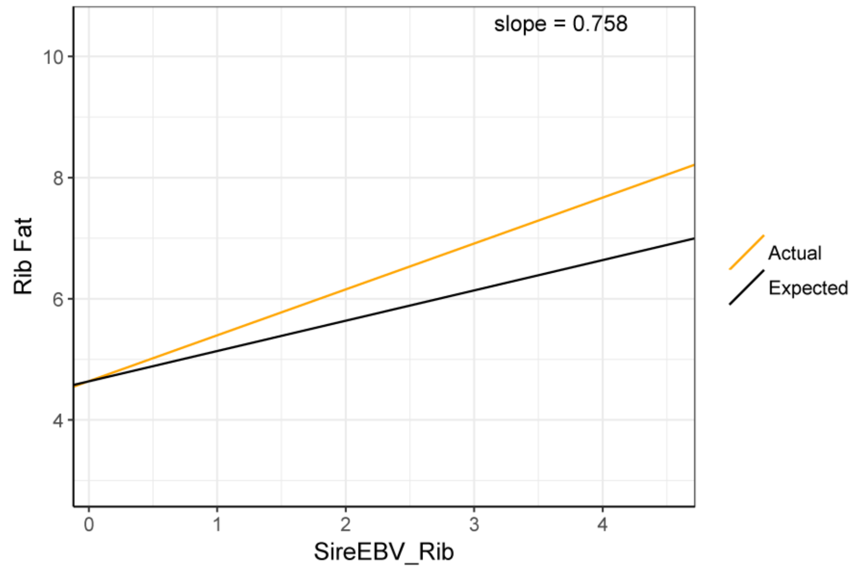
Carcass Marbling Score
300
350
400
450
0
1
2
3
4
SireEBV_IMF
Actual
Expected

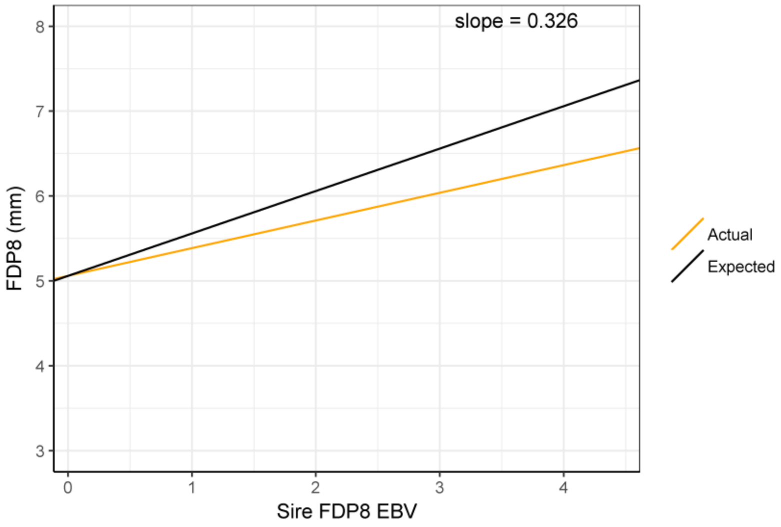

slope = 0.158
Hot Carcass Weight
290
300
310
320
25
50
75
SireEBV_CWT
Actual
Expected

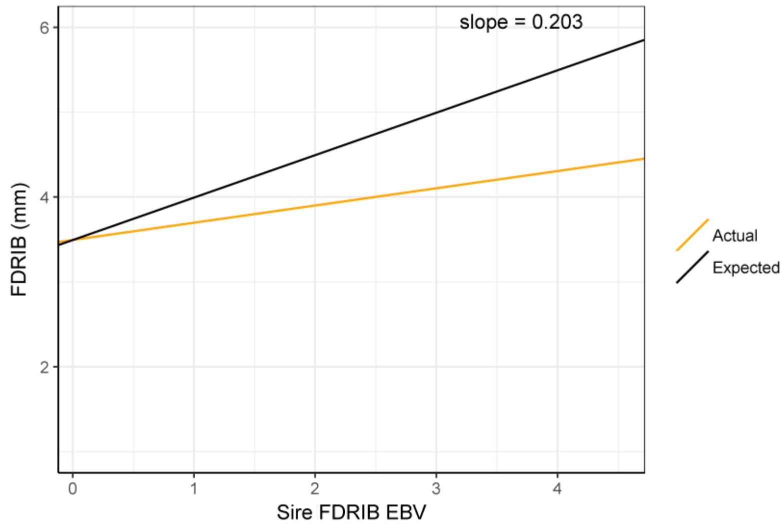

slope = 0.336
Carcass Eye Muscle Area (photo)
60
65
70
75
80
0
5
10
15
SireEBV_EMA
Actual
Expected

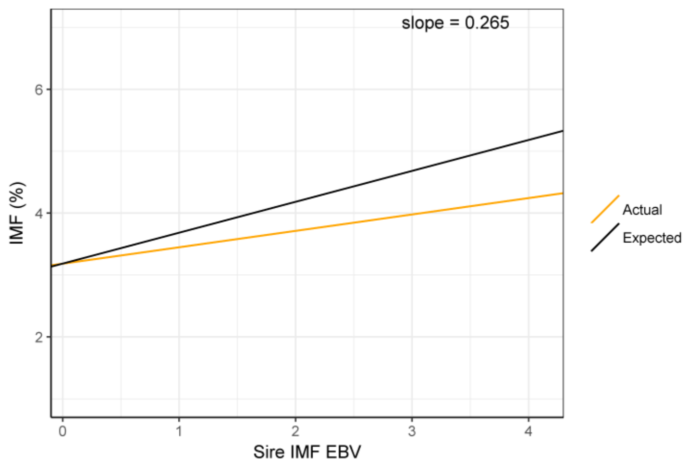

slope = 0.758
Rib Fat
4
6
8
10
0
1
2
3
4
SireEBV_Rib
Actual
Expected

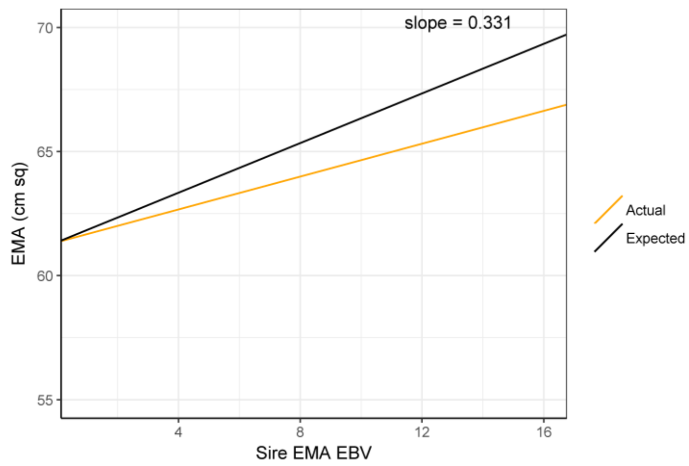
Proving Carcass: Ultrasound Scanning

	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%	





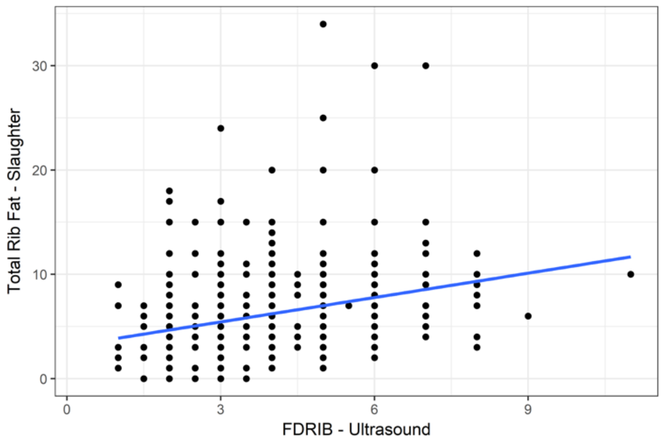


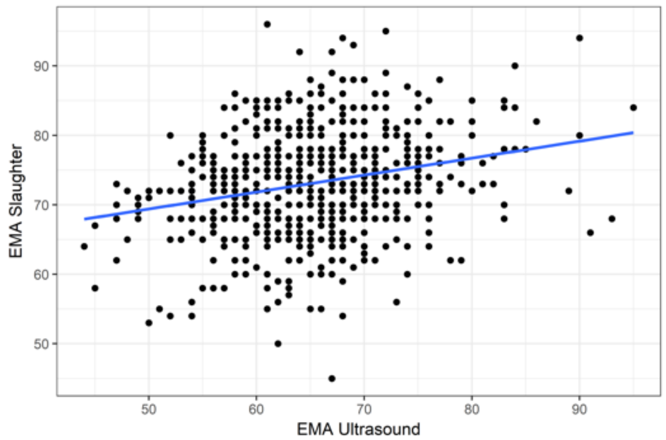


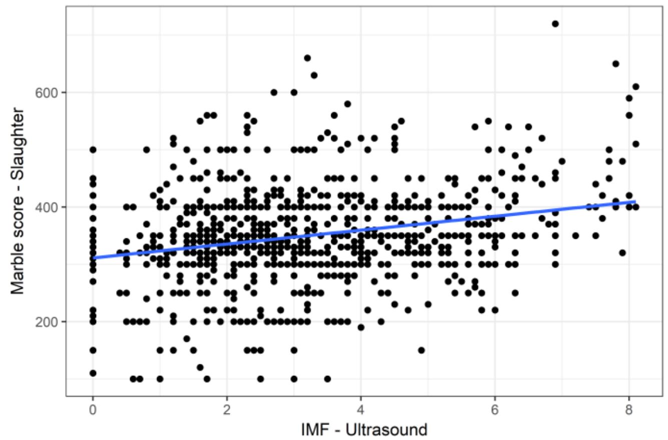
Relationship between Ultrasound scanning traits (for carcass) and abattoir collected carcass traits

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.







To note: Abattoir & Ultrasound scan fat traits are ranked on increased fatness

Ossification: lower number is preferable

B+LNZ Genetics Beef Progeny Test: Cohort 1 summary of adjusted progeny averages (rank) across 52 sires

				Carcass - Ultrasound Scanning								Carcass- Abattoir													
Breed	Born	Name	N Prog.	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	Eye Muscle Area (cm2)	Rank	Fat Depth (12/13th rib mm)	Rank	Marbling	Rank	Ossification	Rank
NZ Angus	2010	Rissington Prominent 100104	22	60.7	50	3.9	23	5.9	16	3.5	24	301	9	53.3	47	45	35	69.0	31	4.9	44	336	48	138	3
NZ Angus	2010	Pinebank 64/10	21	60.8	49	4.4	6	6.1	12	3.7	16	294	51	53.6	33	48	12	68.4	48	6.8	5	356	16	145	50
NZ Angus	2011	Te Mania 11 553	24	63.4	20	4.0	15	5.4	31	3.8	9	300	25	53.5	39	47	21	69.8	9	5.9	15	358	11	143	38
NZ Angus	2012	Rissington Resolute 120992	14	62.9	32	3.9	20	5.6	24	3.6	20	300	26	53.7	22	45	28	69.3	20	6.3	9	365	5	144	45
NZ Angus	2012	Glanworth Waigroup 1213	22	62.7	34	3.8	28	5.0	43	3.1	36	301	16	53.7	24	49	9	70.2	4	6.1	11	355	21	147	52
NZ Angus	2013	Rissington 135057	21	63.2	24	4.6	4	7.2	2	3.9	7	298	40	53.5	40	53	2	68.8	42	6.7	6	391	1	140	15
NZ Angus	2013	Rissington Analyst 135252 (ET)	27	64.2	9	3.9	21	5.7	21	3.9	6	301	11	53.6	31	50	7	69.5	18	5.9	16	341	43	138	5
NZ Angus	2013	Rissington 135262 (ET)	22	64.4	6	4.0	19	6.3	8	4.1	3	300	27	53.9	10	41	49	68.7	46	6.2	10	355	20	143	40
NZ Angus	2009	Ngaputahi Eureka E38	24	62.3	40	3.5	37	5.1	41	3.2	34	299	31	54.3	1	45	32	69.7	12	4.9	45	352	29	143	44
NZ Angus	2009	Turihaua Crump E5	25	61.9	44	4.2	9	6.5	6	3.4	26	295	48	53.3	46	45	31	69.0	32	5.8	18	364	6	139	7
NZ Angus	2010	Matauri Outlier F031	32	62.2	42	3.8	29	5.8	19	3.2	35	308	2	53.5	41	39	51	69.3	22	5.2	37	344	40	138	4
NZ Angus	2012	Tangihau Kaino H29	27	63.1	26	4.5	5	6.0	13	4.2	2	301	15	53.4	44	45	33	69.8	10	8.3	2	360	9	144	46
NZ Angus	2012	Storth Oaks H41	17	64.0	13	3.8	27	5.9	17	3.6	22	299	33	53.6	36	46	27	68.9	35	5.8	17	343	42	142	29
NZ Angus	2013	Mt Linton 13007	17	63.6	16	4.1	12	5.6	27	4.0	4	301	8	53.9	7	46	23	69.0	34	4.5	52	358	12	143	43
NZ Angus	2011	Totaranui 238 (ET)	27	64.1	11	3.4	41	4.9	46	3.7	15	300	17	53.8	20	45	34	70.7	1	5.6	22	351	30	142	27
NZ Angus	2012	Fossil Creek Hero H006	23	64.2	10	4.0	16	6.8	3	3.7	14	299	32	54.0	5	45	37	70.2	5	6.6	8	356	18	141	16
NZ Angus	2008	Matauri Reality 839	25	63.3	21	4.4	7	6.7	5	4.0	5	300	22	53.6	32	48	14	68.8	39	7.9	3	353	26	142	23
NZ Angus	2007	Turihaua Liberation C27	34	59.1	52	3.6	35	5.6	26	2.8	48	297	44	53.2	49	45	36	68.3	50	4.7	46	353	24	142	25
Intl Angus	2010	PA Safeguard 121 (USA)	31	62.7	35	3.1	48	4.5	51	3.2	28	306	3	53.6	30	50	6	68.8	40	5.3	31	380	2	143	41
Intl Angus	2012	HPCA Intensity (USA)	21	62.8	33	3.7	30	5.3	36	3.3	27	299	35	53.5	38	46	26	69.6	15	5.7	19	355	19	144	48
Intl Angus	2012	GAR Momentum (USA)	17	62.6	37	3.7	31	5.2	40	3.7	13	301	13	54.2	3	47	22	69.3	23	5.5	24	363	7	144	49
Intl Angus	2011	Connealy Revenue 7392 (USA)	23	63.3	23	4.1	13	5.6	29	3.7	18	300	24	53.6	34	47	18	69.5	17	7.4	4	350	31	139	10
Intl Angus	2008	EF COMPLEMENT 8088 (USA)	19	63.9	15	3.6	34	5.6	28	3.9	8	301	10	53.8	15	45	30	69.2	25	5.4	29	354	22	139	6
Intl Angus	2009	S A V Bruiser 9164 (USA)	17	61.6	46	3.5	39	5.2	39	2.6	50	298	42	53.0	52	41	48	68.7	44	4.6	50	336	49	142	33
Intl Angus	2009	Rennylea Edmund E11 (AUS)	27	64.0	14	4.8	2	6.4	7	4.4	1	298	38	53.2	50	51	5	67.5	51	8.4	1	370	3	143	34
Hereford	2000	Koanui Rocket 0219	21	62.9	31	4.1	11	6.7	4	3.0	40	300	30	53.8	19	40	50	69.7	11	5.3	32	340	44	139	11
Hereford	2003	Otapawa Spark 3060	27	61.0	48	4.1	10	6.0	15	3.2	30	299	37	53.4	45	53	3	68.7	43	5.1	41	359	10	137	1
Hereford	2010	Beechwood Turk	12	61.5	47	3.2	45	5.2	38	2.5	52	299	34	53.6	28	36	52	70.4	3	4.5	51	331	51	144	47
Hereford	2010	Okawa Marshall 0109	15	61.8	45	4.6	3	6.2	11	3.2	32	295	50	53.1	51	48	10	68.8	41	6.0	13	354	23	140	14
Hereford	2011	Waikaka Turning Point 110015	13	62.6	36	3.1	47	5.1	42	3.2	31	298	39	53.8	18	46	24	69.1	27	5.5	25	357	14	142	26
Hereford	2012	Bluestone 120061	29	62.2	43	3.8	26	5.7	22	3.1	38	293	52	53.7	26	43	45	69.6	16	5.1	39	337	47	139	8
Hereford	2007	Matariki Holy Smoke	12	63.0	29	4.0	18	6.2	10	3.6	19	300	20	53.6	37	44	42	68.9	38	5.9	14	345	39	141	20
Hereford	2004	Nithdale Elvis	13	64.6	3	3.8	25	5.5	30	3.7	11	300	18	53.9	14	48	15	69.2	24	5.6	21	339	45	141	21
Hereford	2007	Okawa Davis 7046	19	60.7	51	3.9	24	5.4	33	3.5	25	296	47	53.5	42	44	43	69.1	28	5.2	33	348	37	141	18
Intl Hereford	2008	Wirruna Daffy D1 (AUS)	22	64.4	7	4.0	14	6.3	9	3.2	29	295	49	54.0	4	47	20	69.8	8	5.2	36	329	52	140	13
Intl Hereford	2001	Glendan Park Top Gun W42 (AUS)	8	63.0	30	3.6	36	5.6	25	2.8	49	300	28	53.6	27	44	41	69.0	30	5.4	28	349	33	142	24
Stabilizer	2012	Focus Big Gene 121293	14	64.3	8	3.0	49	4.5	50	3.2	33	305	4	54.3	2	44	38	69.3	21	5.2	38	348	35	147	51
Stabilizer	2012	Focus Forefront 121599	29	62.4	39	3.5	38	5.7	23	3.6	21	298	41	53.9	8	53	1	68.3	49	5.2	35	366	4	143	37
Stabilizer	2013	Focus Forceful 135159	20	64.9	2	4.3	8	6.0	14	3.7	10	296	46	53.8	16	44	39			4.7	48	347	38	143	39
Stabilizer	2013	Focus Trinity 135263	18	65.3	1	5.3	1	7.6	1	3.7	12	304	5	53.8	17	50	8	69.3	19	6.6	7	349	34	143	35
Stabilizer	2013	Focus Porterhouse 135361	30	63.5	18	3.2	46	4.7	49	3.7	17	300	21	53.9	9	45	29	69.6	13	4.7	49	335	50	138	2
Simmental	2013	Kerrah Yes Sir AY393	15	63.4	19	3.3	43	5.4	32	2.9	45	299	36	53.7	23	47	17	70.0	6	4.9	43	344	41	142	31
Simmental	2012	Waikite AA2036	11	63.1	25	3.6	33	5.3	37	2.8	47	301	12	53.9	11	48	11	69.0	29	5.2	34	352	28	141	19
Simmental	2012	Kerrah A456	15	64.4	5	3.7	32	5.0	44	3.1	37	301	14	53.9	12	46	25	68.7	45	6.1	12	350	32	139	9
Simmental	2012	Glenside Atomic A5	11	63.3	22	3.2	44	5.0	45	3.0	41	303	7	53.7	25	47	16	68.5	47	5.4	30	353	27	142	30
Simmental	2013	Rissington AB5185	10	62.6	38	3.4	42	5.3	35	2.9	46	300	29	53.3	48	43	47	69.0	33	5.6	20	357	15	143	42
Simmental	1998	Tokaweka Handsome AH801	15	63.0	28	2.3	52	3.9	52	2.6	51	300	19	54.0	6	52	4	69.2	26	4.7	47	348	36	143	36
Simmental	2007	Rissington New Standard AU158	15	64.4	4	3.9	22	5.8	20	3.5	23	309	1	53.5	43	48	13	70.5	2	5.4	27	363	8	142	28
Simmental	2009	Kerrah Xfactor AX187 (ET)	12	63.0	27	3.0	50	4.9	47	3.0	43	297	45	53.6	29	43	46	68.9	37	5.1	40	353	25	141	17
Simmental	2010	Glen Anthony Y-Arta AY02 (ET)	12	62.3	41	3.4	40	5.9	18	2.9	44	297	43	53.6	35	43	44	68.9	36	5.1	42	339	46	139	12
Charolais	1999	Silverstream Performer	7	63.6	17	2.8	51	4.7	48	3.0	42	300	23	53.8	21	44	40	69.6	14	5.5	26	357	13	142	22
Intl Charolais	2010	Welcome Swallow Easy Gain F508 (AUS)	7	64.1	12	4.0	17	5.4	34	3.0	39	303	6	53.9	13	47	19	70.0	7	5.6	23	356	17	142	32
Minimum			**7**	**59.1**		**2.3**		**3.9**		**2.5**		**293**		**53.0**		**36**		**67.5**		**4.5**		**329**		**137**	
Average			**19**	**63.0**		**3.8**		**5.6**		**3.4**		**300**		**53.7**		**46**		**69.2**		**5.7**		**352**		**142**	
Maximum			**34**	**65.3**		**5.3**		**7.6**		**4.4**		**309**		**54.3**		**53**		**70.7**		**8.4**		**391**		**147**	

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**