

B+LNZ Genetics for the Commercial Farmer

Max Tweedie

B+LNZ GENETICS: BACKGROUND

- Established in 2014 consolidating sheep and beef genetics research and innovation into a single entity
- A subsidiary of B+LNZ funded by sheep and beef levy payers and MBIE. Supported by additional investment from third parties





OUR PURPOSE

new - --

Provide the Genetic information infrastructure for Breeders, Farmers and Industry to make profitable breeding choices







The New Zealand Genetic Evaluation (NZGE)





All flocks



All information included



Best estimate of genetic merit



Ability to benchmark rams



Sub Indexes









NZ Maternal Worth (NZMW)

NZ Terminal Worth (NZTW)

Ask your breeder for Sub and Standard Indexes



Standard Indexes +





FLOCKFINDER APP



< Ba	ck	Results	Мар
Geor	ra Gattre	no no	m >
Mana	awatu	1001-3000 shee	эр
33	Waimai		
John	& Alastai	r Reeves Ro	m >
Waik	ato	1001-3000 shee	ep
347	Piquet H	lill	
Peter	r & Will Ja	ckson Ro	m >
Waikato		1001-3000 shee	ep
480	ARDG		
Craig	& Christi	na Alexa Ro	m >
Waik	ato	1001-3000 shee	ep
151	Kikitang	ео	
Gord	on Levet	Ro	m >
Auck	land	1001-3000 shee	ep
552	Waiteika	r.	
Keith	Abbott	Ro	m >
Waikato		501-1000 shee	ep

••••• Voda NZ 🗢 12:16 pm	≰ 50% 💶
Results Flock det	ails Map
FLOCK	
480 ARDG	
Breed	Romney
Region	Waikato
Last year born	1001-3000
Recording for	
REPRO SUR G	ROW
FE FEC F	REZ
BREEDER/OWNER	
L Alexander Farmin	g Genetics Ltd
472 Buckland Ro Matamata 3472	ad, R D 2,
6 07 888 1703	
Calexander@xtra.co	.nz



Genetic trend





Genetic trend





Tools Provided to Industry - Future RAM INFO (Real Time)



YOU



Central Progent Test Redesigned 'Next Generation Flocks • Do more rams (40 now 150) *** • Do them young • Do them young • Partner with industry outfits

+ Improve the NZGE, prove eBVs are working



Central Progeny Test







MATERNAL BEEF ISSUES

• What is the right type of cow for hill country?

 What genetics are required to maximise finishing performance and hit market specs?

How do we balance maternal vs finishing traits?





B+LNZ GENETICS BEEF PROGENY TEST

- 1. Quantify value
- 2. Demonstrate tools
- 3. Improve tool kit

...within New Zealand commercial beef farming systems



B+LNZ GENETICS BEEF PROGENY TEST

- 50 Bulls
- Charolais, Hereford, Stabilizer, Angus & Simmental
- 2100 females fixed time A.I
- 5 large scale commercial farms covering the country



FUNDING PARTNERS

• Focus Genetics • Simmental NZ



CONTRIBUTORS

- Angus NZ
- Hereford NZ
- Charolais NZ
- Mendip Hills Station
- Taratahi (Tautane Station)
- Whangara Farms

- Lone Star Farming (Caberfeidh)
- Landcorp (Rangitaiki Station)



PROPERTIES INVOLVED



TAUTANE STATION (Angus, Taratahi)



WHANGARA FARMS (Angus, Simmental)



RANGITAIKI STATION (Angus, Stabilizer, Simmental Landcorp)



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MENDIP HILLS (Hereford, Charolais, Black family)



CABERFEIDH (Angus, Lone Star)



Evaluating finishing and/or maternal performance within New Zealand commercial beef farming systems





Questions

•Do EBVs work ?

•Do we get the full benefits?





	200 Day Wt EBV	
Bull 1	+20	
Bull 2	+40	
Bull 3	+60	



	200 Day Wt EBV	Progeny Difference	
Bull 1	+20	-10	
Bull 2	+40	0	
Bull 3	+60	+10	



	200 Day Wt EBV	Progeny Difference	Calf average WWT
Bull 1	+20	-10	225
Bull 2	+40	0	235
Bull 3	+60	+10	245







200d Weight: Angus Sires (vs 200D EBV)





200d Weight: All Breeds

For every 1kg more in eBV, we got 450g in progeny weaning weight







Al conception rate

FARM	2014/15	2015/16
Whangara	44%	56%
Rangitaiki	56% R2 heifers, 64% MA cows	64%
Tautane	49%	58%
Mendip Hills	42%	49%
Caberfeidh	56% R2 heifers	62% R3s



BCS at mating is crucial





Greg Mackay Xcell Breeding Services

- Increased the number of commercial beef cows
 A.I'd by 1000 (20% growth) in 2016
 - Many of these due to attendance at Mendip Hills field day 2016

* Same number of natural sires required



	Average Weaning WT	Average Yearling WT		
Simmental	6kg heavier	20kg heavier		



	Extra Value at Weaning	Extra Value as Yearling
Per Head (\$4/kg)	\$24	\$80



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Per Head (\$4/kg)	\$24	\$80
Per Year (40 calves)	\$960	\$3200



	Extra Value at Weaning	Extra Value as Yearling
Per Head (\$4/kg)	\$24	\$80
Per Year (40 calves)	\$960	\$3200
Over lifetime (3 seasons)	\$2880	\$9600



The tale of 2 bulls

Heaviest Angus Sire: Intensity

400 Day wt EBV: 122 kg (Top 1% of the breed)

Lightest Angus Sire: Crump

400 Day wt EBV= 61 kg (Top 95%)



Percentile Bands for 2015 born Angus

	Calving Ease DIR	Calving Ease DTRS	Gest. Length	Birth Wt.	200 Day Wt.	400 Day Wt.	600 Day Wt.	Mat Cow Wt.	Self Replacin g Index	Angus Pure Index
	(%)	(%)	(days)	(kg)	(kg)	(kg)	(kg)	(kg)	(\$)	(\$)
Top Value	7	6.2	-14.2	-2.9	68	129	169	176	\$184	\$218
Top 1%	5.1	4.4	-8.9	0.8	57	102	135	129	\$164	\$188
Тор 5%	4	3.4	-7.1	1.9	52	94	124	115	\$147	\$171
Top 10%	3.2	2.8	-6.2	2.4	50	90	119	109	\$138	\$160
Top 15%	2.7	2.4	-5.6	2.8	49	88	116	104	\$132	\$152
Тор 20%	2.3	2	-5.2	3.1	48	86	113	101	\$127	\$146
Тор 25%	1.9	1.7	-4.9	3.3	47	84	111	98	\$123	\$142
Тор 30%	1.6	1.4	-4.6	3.5	46	83	108	96	\$119	\$137
Тор 35%	1.2	1.1	-4.3	3.7	45	81	106	94	\$115	\$132
Тор 40%	0.9	0.8	-4.1	3.9	44	80	104	92	\$111	\$128
Top 45%	0.6	0.6	-3.8	4.1	43	79	103	89	\$107	\$124
Тор 50%	0.2	0.3	-3.6	4.3	43	77	101	87	\$103	\$120
Top 55%	-0.1	0	-3.4	4.5	42	76	99	85	\$99	\$116
Тор 60%	-0.4	-0.3	-3.2	4.6	41	75	97	83	\$96	\$112
Тор 65%	-0.8	-0.6	-2.9	4.8	40	74	95	81	\$92	\$108
Тор 70%	-1.2	-0.9	-2.7	5	39	72	93	79	\$88	\$104
Тор 75%	-1.6	-1.2	-2.4	5.2	38	70	91	77	\$84	\$100
Тор 80%	-2.1	-1.6	-2.1	5.5	37	69	88	74	\$80	\$95
Тор 85%	-2.8	-2.1	-1.8	5.7	35	66	85	71	\$75	\$90
Тор 90%	-3.6	-2.7	-1.3	6.1	33	63	81	66	\$70	\$84
Тор 95%	-4.9	-3.6	-0.6	6.6	30	58	74	59	\$63	\$76
Тор 99%	-7.8	-5.8	1	7.7	23	48	59	44	\$48	\$61
Low Value	-22	-13.7	8.4	13	6	16	2	-8	\$6	\$15

(beef+lamb) GEN()TICS

The tale of 2 bulls

How much better were Intensity's calves?

- = 30.5 kg average yearling weight (50% of genes from sire)
- = \$122 per head
- = \$4880 per year
- = \$14,640 over his lifetime

* Across 2200 cows, 5 large scale stations (from Taupo to Otago), low and high accuracy sires



Dairy Beef Progeny Test



Export Cattle Slaughter **Dairy herd Influence** Of the 2.45 million slaughter for 2016-17f Cull cows 37% Cull dairy heifers 3% 1% Cull dairy breeding bulls Dairy Farm total* 41% Dairy-beef steers, heifers and bulls* 28% Beef cows, steers, heifers, breeding bulls 31% Sheep and Beef Farm total 59% Total Cattle slaughter 100% * Dairy genetic origin 41% + 28% = 69% 46. 0800 BEEFLAMB (0800 233 352) | WWW.BEEFLAMBNZ.COM | BY FARMERS. FOR FARMERS

Objectives

- Demonstrate a successful dairy beef system
- Identify high performing bulls for dairy beef
- Compare recorded vs average unrecorded bulls
- Look at dairy farm outcomes as well as finishing farm performance



- Partnering with Massey University and Limestone Downs (The Alma Baker Trust)
- Led by Dr Rebecca Hickson



Comparisons:

		Birth weight
Η	ereford	
	Average unrecorded	39.0
	Top 50% breed	37.8
	Top 10% breed	36.5
Α	ngus	
	Average unrecorded	37.5
	Top 50% breed	35.6
	Top 10% breed	35.4



Comparisons:

		Birth weight	Gestation length
Hereford			
	Average unrecorded	39.0	284.5
	Top 50% breed	37.8	282.5
	Top 10% breed	36.5	281.5
Angus			
	Average unrecorded	37.5	281.4
	Top 50% breed	35.6	279.4
	Top 10% breed	35.4	279.3



Comparisons:

		Birth weight	Gestation length	Weaning age
Hereford				
	Average unrecorded	39.0	284.5	77.5
	Top 50% breed	37.8	282.5	76.4
	Top 10% breed	36.5	281.5	
Angus				
	Average unrecorded	37.5	281.4	80.8
	Top 50% breed	35.6	279.4	78.0
	Top 10% breed	35.4	279.3	



Recorded top 50%+ bulls =

- Low calving assistance
- Better growth

Showing dairy farmers that buying beef bulls (and producing better beef sired calves) is a serious option



Maternal Cow Research





Maternal Cow Project

- Led by Prof. Dorian Garrick
- Improve the beef cow

Trans-tasman Beef Cow Profitability Program

- Partner with Aussies
- \$5.3m over three years
- Improve the beef cow



CS

(beef+lamb

GEN

Data to contribute too...

New/improved traits

BCSMature Cow Weight





Data to contribute too...

- Cow efficiency
- Longevity or stayability
 Slow to gain data, fate codes



Data to contribute too...

Fertility/DTC

+ Heifer Puberty and Antral Follicle Count as heifer selection tools





Genomics

- Predict performance from a marker test, early
- Find gene predictors in new traits



Commercial application



Better Beef Breeding: Bull Buying Workshops

- Simplify genetic information
- Simplify picking bulls on type
- Combine the two in a Helmsman auction (its pretty fun)





Bull Selection- Future

- Set your breeding objective
- Interactive
- Thereabouts rather than absolutes
- Graphical (data if you're bent that way)
- Better value achieved at bull buying time- for your farm system



