Step Change

There's always room for improvement

Unlocking the value of Herd Improvement

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Shifting & sharpening the focus

- What does the future hold?
- What does the future cow for the region look like?
- What is the scale of the contribution Genetic gain can make to the future profitability and prosperity of the Southern region?

A week is a long time when you are trying to track down the goal post

New research shows New Zealand dairy farmers have the world's lowest carbon footprint – at half the emissions of other international producers.

The AgResearch analysis confirms New Zealand retains its outstanding position in low-emission dairy milk production, with an on-farm carbon footprint 46 percent less than the average of 18 countries studied.

Commissioned by DairyNZ, the study was independently produced by AgResearch and peer-reviewed by an international specialist in Ireland.

The research analysed 55 percent of global milk production, including major milk producing countries.

And then……

Calling for……
15% reduction in stock numbers over the next 9 years.

What is absolutely clear

We will need to be more efficient, we will need to look to produce at least as much from less and we will need to maintain profitability and competitiveness.

There’s always room for improvement

Guiding principles

- “Efficiency is efficiency irrespective of the farm system”
- Kg MS/Kg LWT needs to be the key driver while acknowledging the non-negotiable per cow costs
- “The ‘P’ word is profit not production”
- Don’t underestimate the value of Herd Improvement and ensuring we have the right cow for the job

There’s always room for improvement

Southland Region

This is a significant dairy region that matters to LIC

Total number of herds	985
Average herd size	601
Number of cows milking	591,987
Number of farm owner/operators	644
Number of sharemilkers	326
Average farm size	244 ha
Average cows per ha	2.7

9% of New Zealand's dairy herds are in Southland milking 12% of the national dairy herd on 13% of the national dairy land

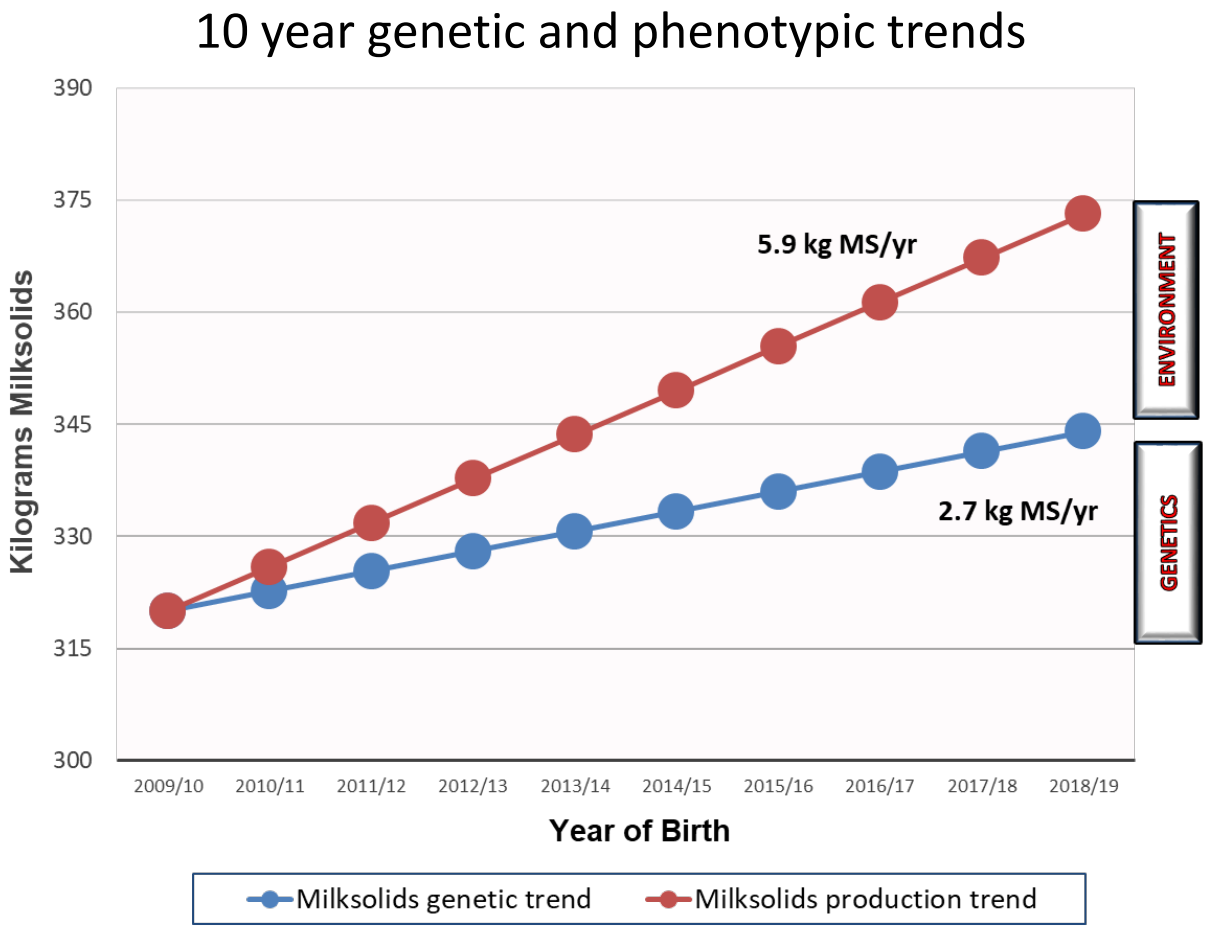
Dairy jobs contribute 8.4% of the regional employment

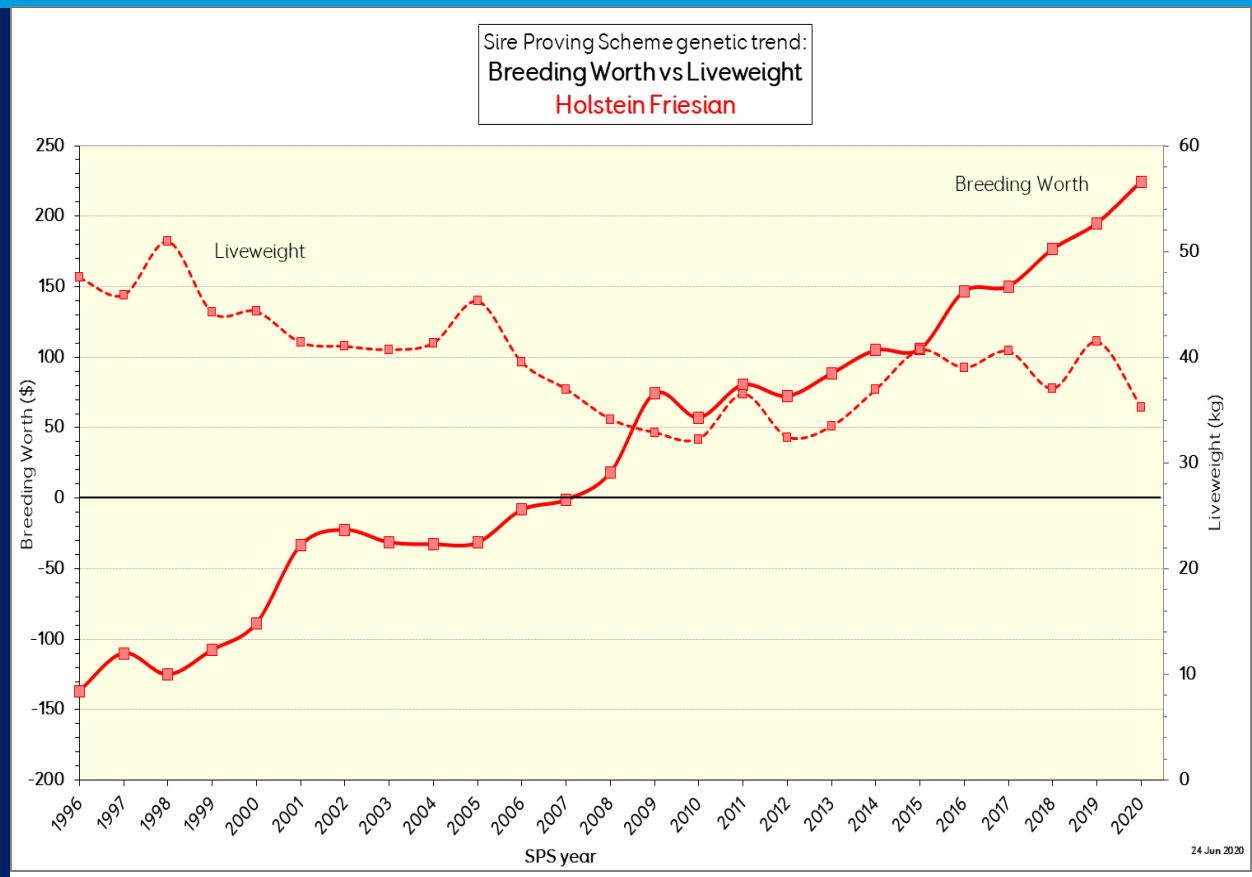
Source – DairyNZ Website December 2020

1930 - 87,000 cows
1980 – 24,000 cows
1991 – 44,000 cows
2019 – 592,000 cows

Factual considerations

What might the future look like?





Genetic gain and the call to make the boat go faster

Striving to take the current 9BW/yr out to 15-20 and capturing the associated productivity gains.

Being crystal clear of the contribution from both sides of the equation

Firstly

The role of both Genomics and sexed semen from the mating sire perspective.

	Friesian	Jersey	KiwiCross
AE March 2021	Differential		
2017 Team	19.8	32.2	34
2018 Team	16.2	15.4	50.6

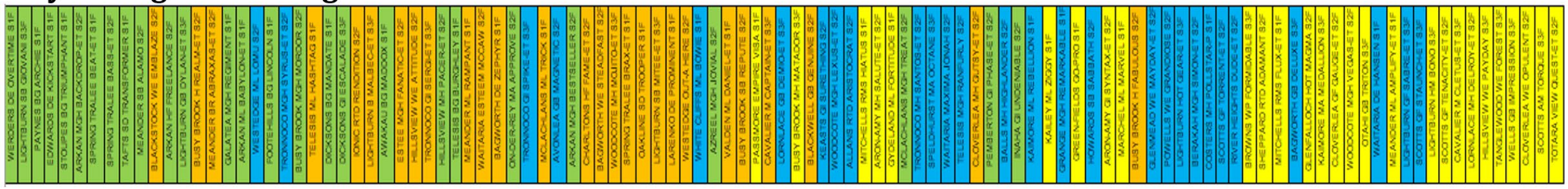
There’s always room for improvement

Validation of Genomic prediction

16 Code HF example

July 2019 gBW Ranking

May 2020 gBW Ranking

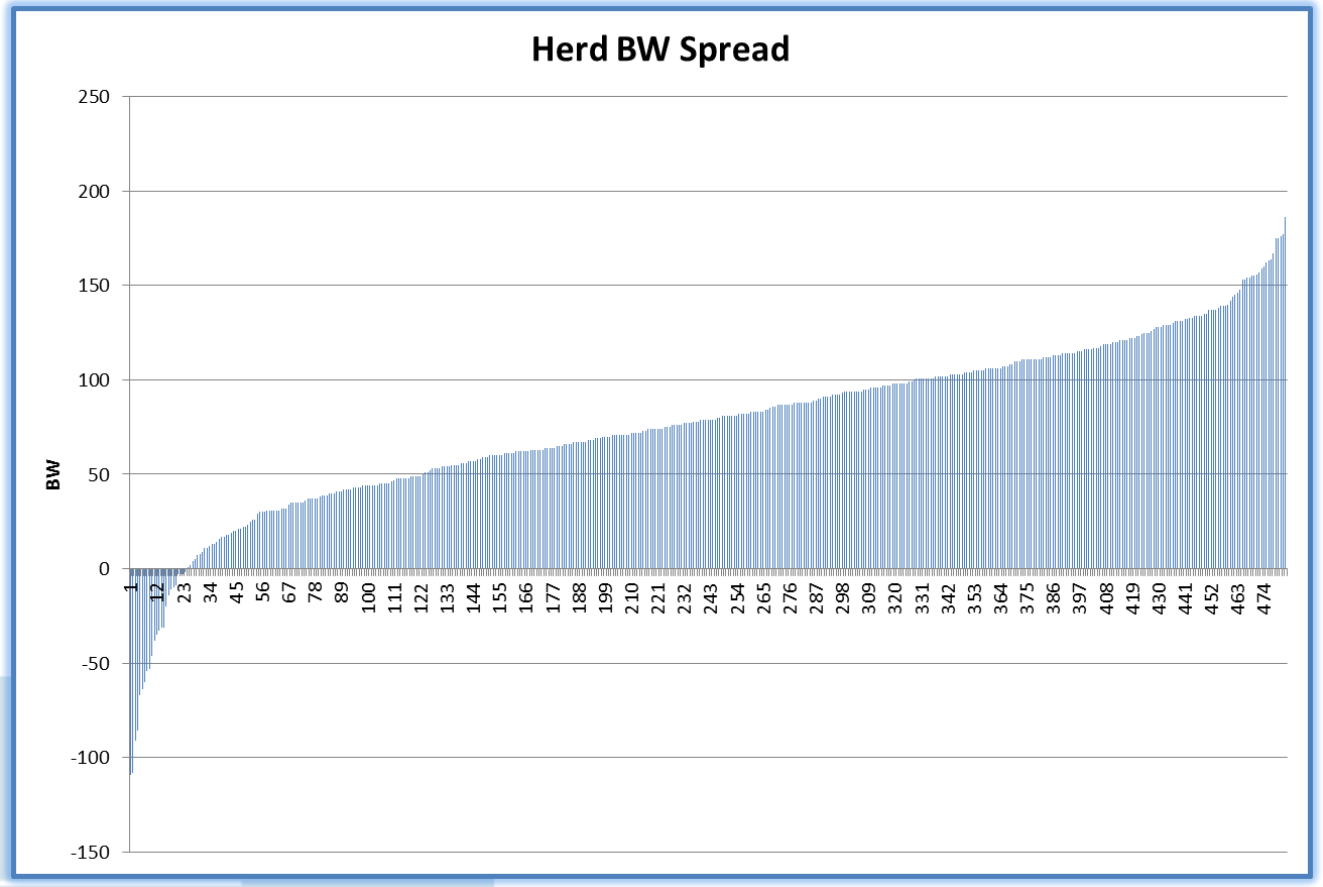


There’s always room for improvement

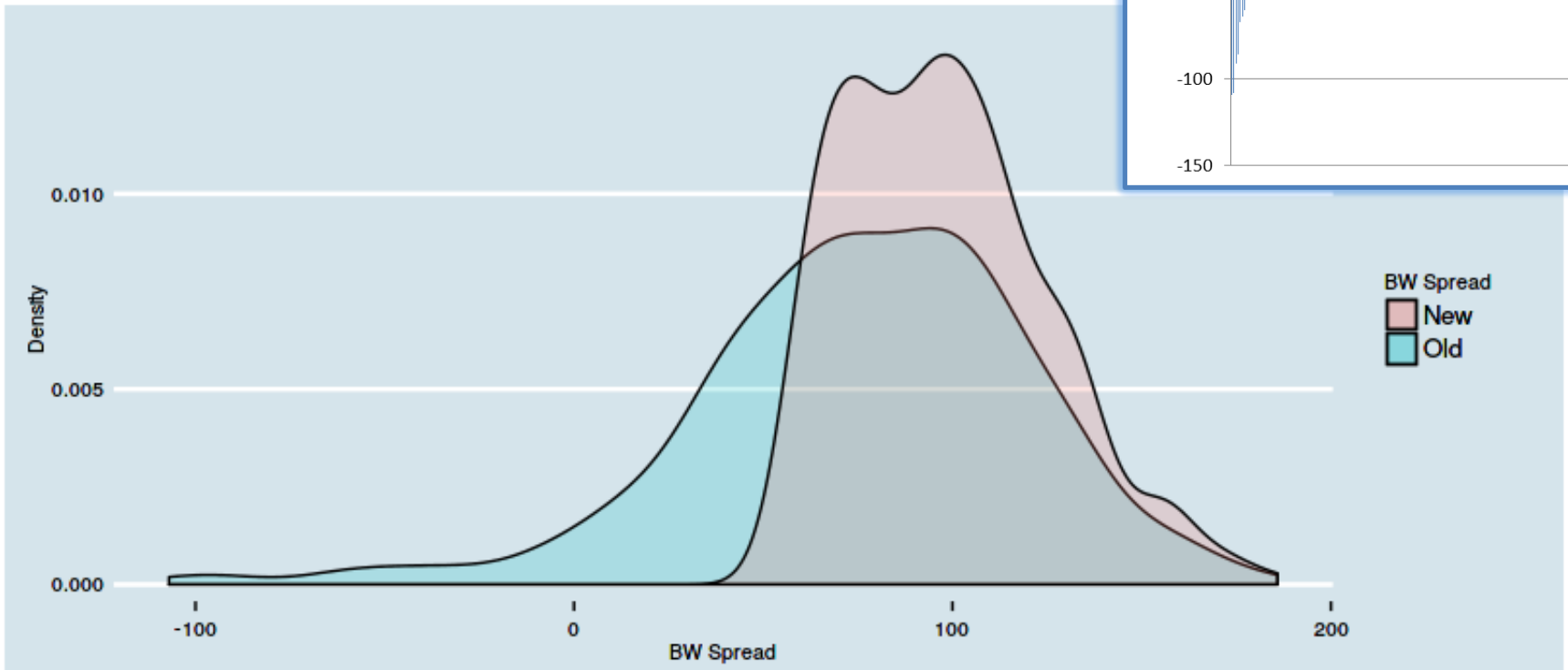
LIC®

Sharpening the focus on herd improvement within the herd

Secondly



Herd Improvement



Sharpening the focus on herd improvement within the herd

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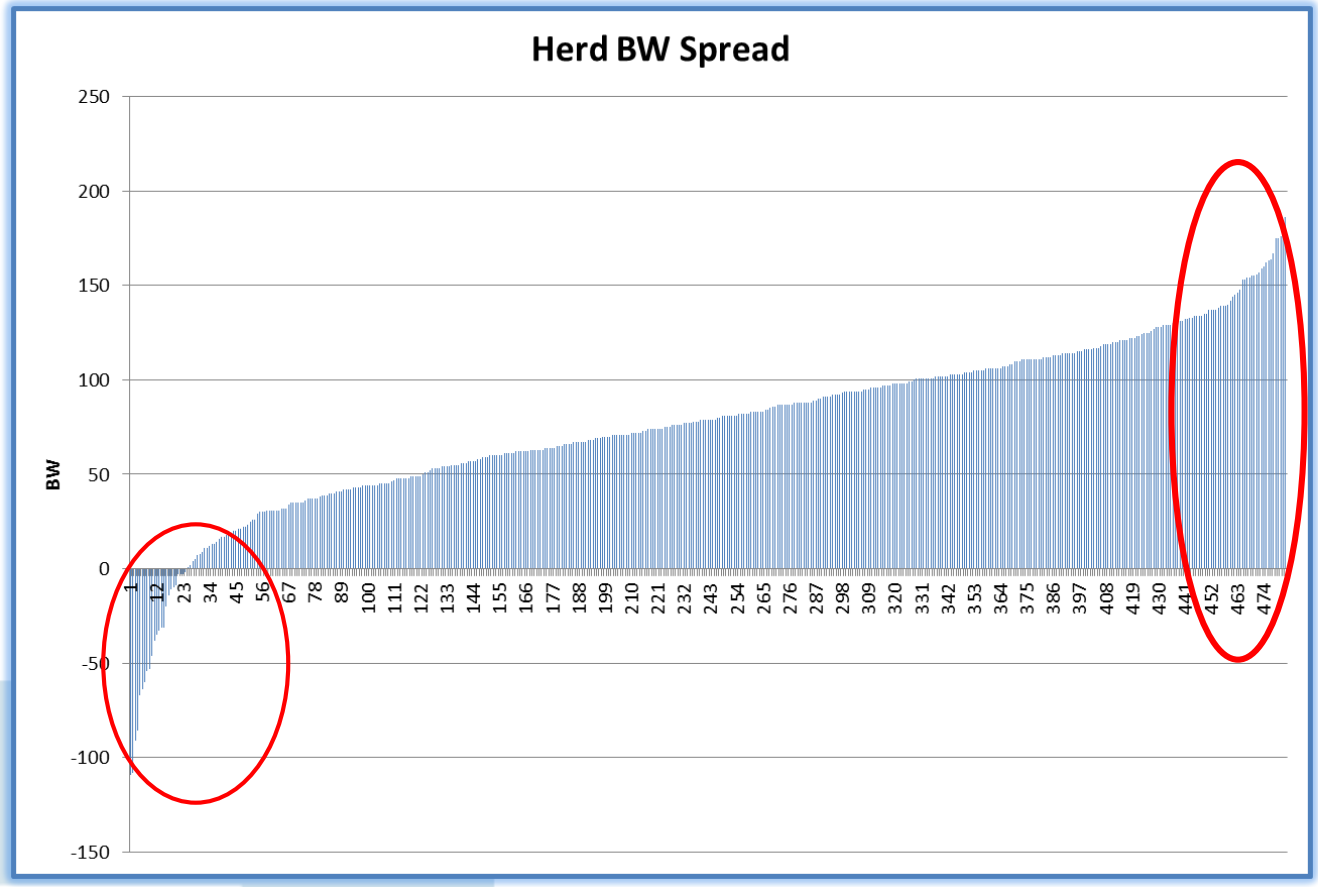
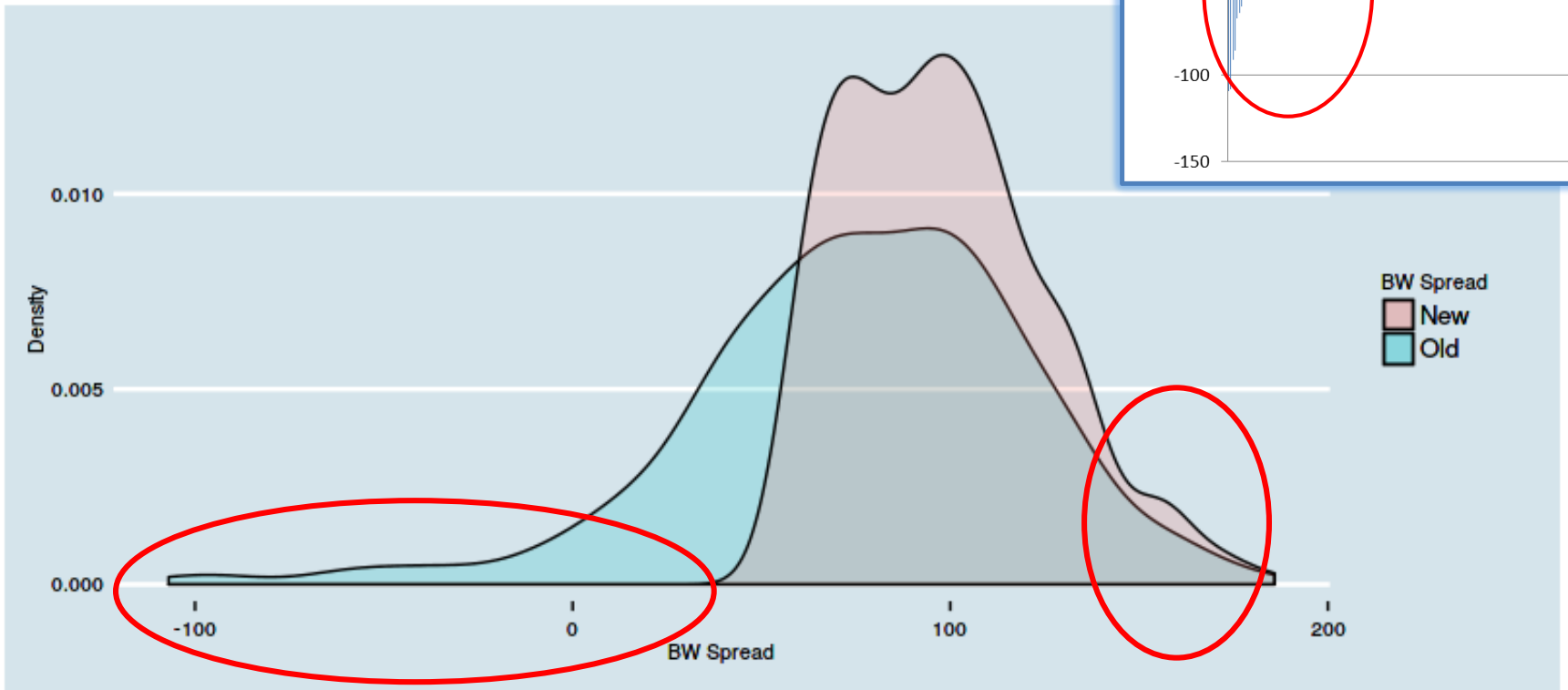


Herd Improvement



The power of Selection pressure

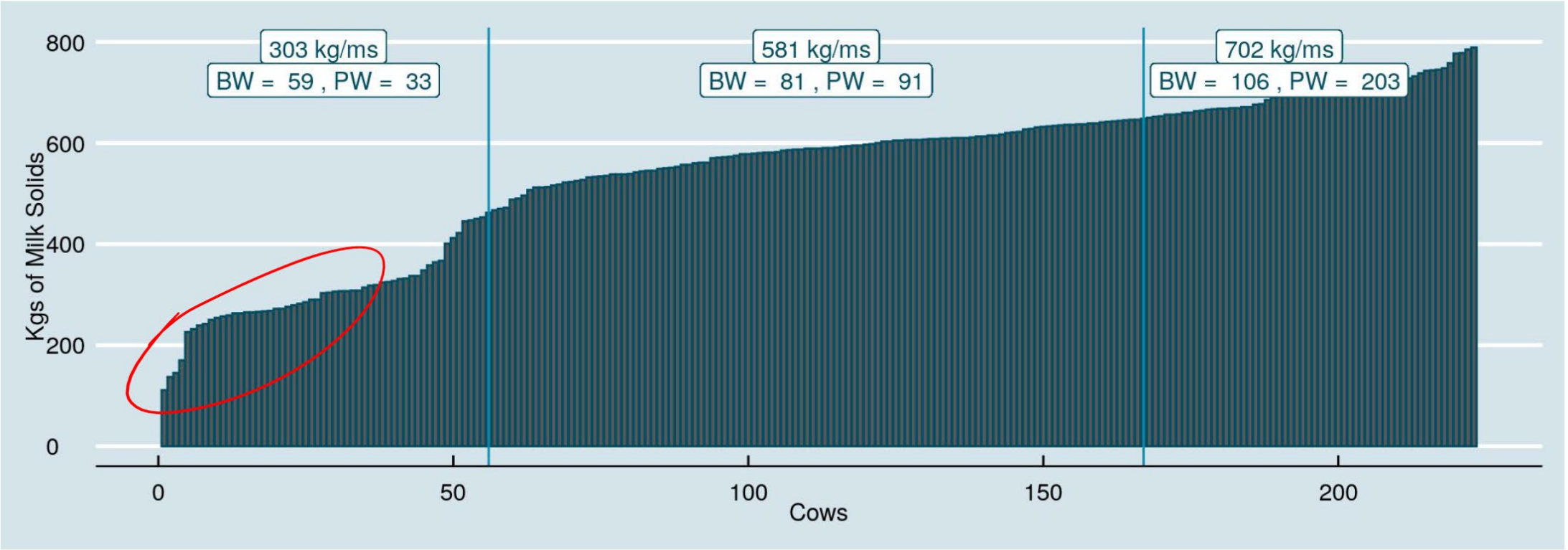
Tag Number	Birth ID	BW	PW	Dam Birth ID	Dam BW	Dam PW
286	17-79	-43.1	-155.6	-09-66	15.2	64.3
336	10-49	-29.5	-310.3	00-68	-42.3	-215.2
129	15-66	-20.8	-93.3	07-105	-14.0	-45.1
295	16-57	-20.0	-108.7	-09-43	-51.7	-187.7
108	14-77	-16.4	-65.7	-04-22	75.0	67.7
20	11-52	-11.5	-216.0	-06-40	-35.1	31.9
305	10-16	6.3	85.3	-05-6	-108.2	-97.3
321	11-51	28.1	9.7	-08-40	-24.4	10.6
235	14-9	31.9	-65.3	-08-37	-18.9	-72.1
329	10-17	33.5	30.2	-06-32	-15.4	-78.3
314	15-76	35.1	-84.5	-07-22	-7.3	37.7
147	10-52	35.2	76.5	-04-35	4.7	136.7
227	12-58	37.9	23.8	-07-37	12.3	50.9
155	11-11	38.3	-110.2	-08-2	50.9	-29.1
293	15-47	40.3	-98.8	-08-15	-54.9	-172.9
217	14-49	40.5	-12.1	-03-25	-75.5	-139.2
62	12-34	40.7	-12.4	-05-6	-108.2	-97.3
115	16-37	40.8	-131.1	-07-16	-18.3	49.4
337	14-82	41.7	53.0	-08-30	59.4	11.7
24	14-81	45.5	306.7	-07-20	71.7	41.6
27	12-52	45.6	143.1	-03-41	-70.8	-134.3
45	14-78	45.9	65.1	-05-50	-19.3	-99.7
326	13-48	46.5	-72.0	-08-78	-20.7	-116.4
296	14-20	49.3	-86.4	-08-27	21.6	-87.1
184	15-68	49.9	23.4	06-67	-17.3	81.6
107	15-79	49.9	-25.2	-04-9	-9.0	131.0
285	16-22	56.9	-141.6	-12-54	97.0	99.9

Tag Number	Birth ID	BW	PW	Dam Birth ID	Dam BW	Dam PW
157	13-5	185.9	223.6	09-11	131.4	174.2
59	15-58	186.4	399.7	10-18	147.2	331.2
256	17-45	187.7	255.2	14-43	184.6	293.1
327	17-53	187.8	308.5	12-21	165.6	135.3
89	17-26	188.1	186.6	14-68	141.9	88.7
317	17-16	189.2	350.3	13-59	148.6	235.2
360	15-34	190	270.5	12-33	117.9	193
67	16-53	190.6	345.4	11-27	161.4	268.6
271	13-33	191.6	323.2	09-12	98.8	191.1
287	15-10	194.3	268.7	11-44	135.0	192.3
32	16-58	198.4	435.9	10-29	120.4	86.5
169	17-22	200.4	190.7	12-69	167.6	203.0
244	15-41	204.3	225.8	12-60	156.8	299.1
31	13-69	206.1	304.3	10-5	116.8	93.4
96	14-21	207.4	447.3	11-20	121.8	204.4
328	17-70	208.9	192.1	11-5	128.0	207.4
224	17-46	212.3	279.7	13-87	119.1	159.6
318	17-48	217.4	320.0	12-73	114.4	262.9
195	17-76	220.7	288.1	11-44	135.0	192.3
323	17-18	244.9	524.4	14-62	122.9	169.6

LIC®

In reality we all ready have the cows with the desired levels of productivity, we just need more of them!

Milk solid spread (4-8 years old)



This data is obtained from cummulative results of 4 herd test(s) for season year 2019/20.

400Kgs MS diff top to bottom. (Adjustment for milking days/short season in Q1 = +83KgsMS, taking us up to 385 resulting in **317 Kgs MS/cow** difference between Q1 & Q4.

Efficiency defined as;

$$A + B - C / LWT$$

And she certainly needs to get in calf

Liveweight BV and Production – All Herds

Breed > 14/16th's HF
RA > 90%
Calving 1st June – 10th October
4 – 8 year olds
DIM > 200

Southland

Liveweight and Production

rank livewt bv	Herds	Age 4 to 8 years	AVG BW	AVG PW	AVG volume	Avg KgMS	AVG livewt bv
1	434	6,232	57.7	79.2	6,015	499	16.6
2	463	6,476	52.4	72.8	6,072	502	27.9
3	486	6,610	46.6	68.2	6,128	506	36
4	447	6,352	33.4	51.5	6,202	507	47.9
	486	25,670	47.5	67.9	6,104	503	32.2

Liveweight BV and Production – Herds > 550 kg MS

Breed > 14/16th's HF
RA > 90%
Calving 1st June – 10th October
4 – 8 year olds
DIM > 200

Southland

Liveweight and Production

rank livewt bv	Herds	Age 4 to 8 years	AVG BW	AVG PW	AVG volume	Avg KgMS	AVG livewt bv
1	73	1,450	50	63.6	7,288	591	20.9
2	73	1,485	43	68.6	7,384	599	33.9
3	73	1,497	30.7	54.7	7,475	603	43.1
4	73	1,467	12	29.7	7,516	598	55.9
	73	5,899	33.9	54.2	7,416	598	38.5

Quartiles investigation – BW (Herd 1)

2020/21 Season YTD – Mature cows – min DIM = 150

Ranked by BW	# Animals	Avg KgMS	Avg BW	Avg PW	Avg LW	Avg DIM	Avg livewt bv	Avg fertility bv	Ave Friesian 16ths
Q1	68	413	155	214	192	190	-2.4	0.8	9.4
Q2	69	414	107	147	132	191	14.0	0.2	12.2
Q3	69	406	70	81	84	193	14.2	0.4	12.6
Q4	68	385	19	-27	-9	190	18.4	-0.4	13.3
	274	404	88	104	100	191	11.0	0.3	11.9

There's always room for improvement

Quartiles investigation – BW (Herd 2)

2020/21 Season YTD – Mature cows – min DIM = 150

Ranked by BW	# Animals	Avg KgMS	Avg BW	Avg PW	Avg LW	Avg DIM	Avg livewt bv	Avg fertility bv	Ave Friesian 16ths
Q1	139	468	73	161	120	175	8.4	-0.6	9.9
Q2	139	459	6	73	60	175	29.1	-2.1	11.4
Q3	139	449	-44	-5	0	173	47.0	-2.9	12.8
Q4	138	435	-110	-102	-57	171	58.5	-4.4	13.6
	555	452	-19	32	31	174	35.7	-2.5	11.9

There's always room for improvement

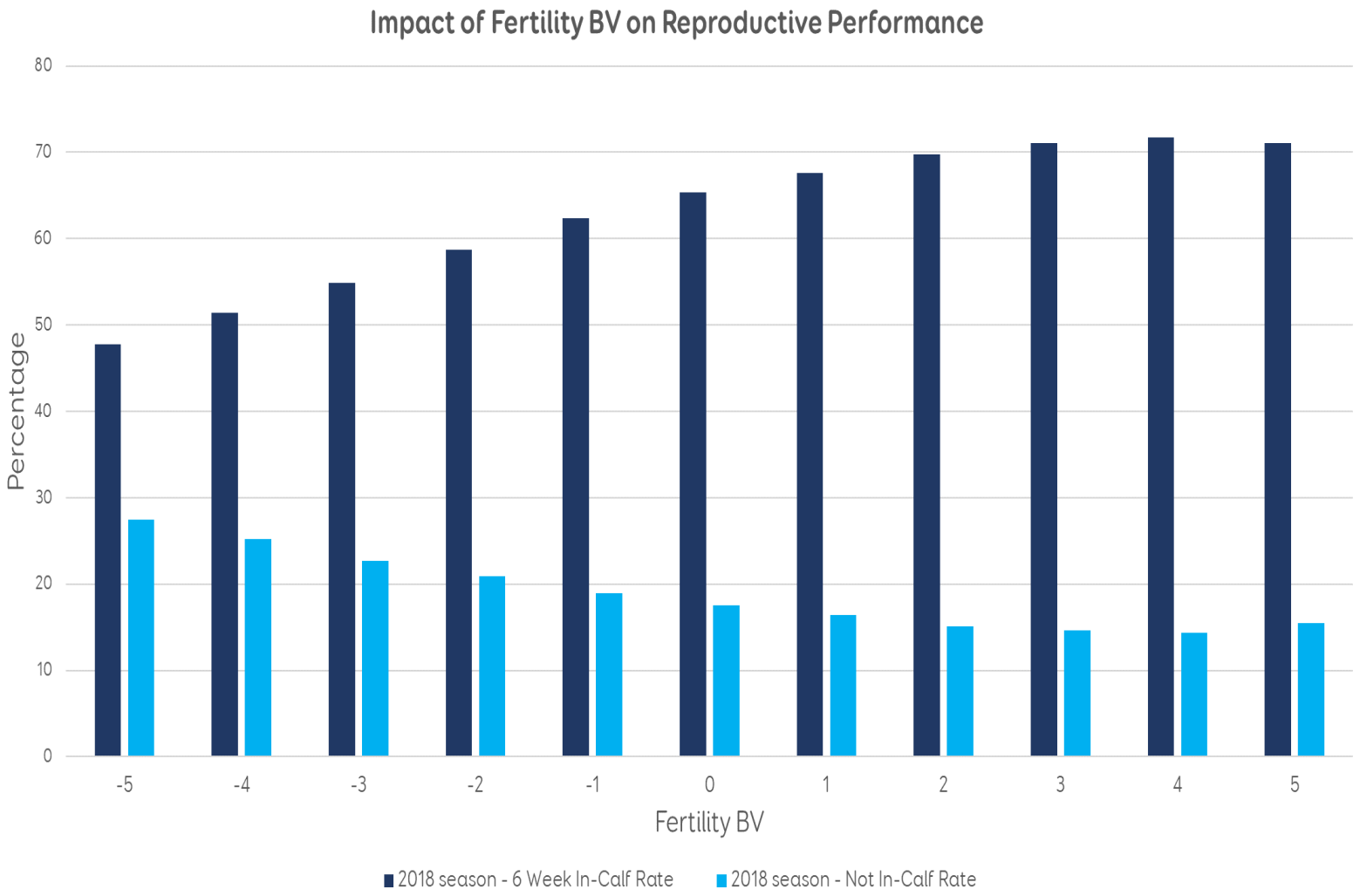
Quartiles investigation – LWT (Herd 2)

2020/21 Season YTD – Mature cows – min DIM = 150

Ranked by Liveweight bv	# Animals	Avg KgMS	Avg BW	Avg PW	Avg LW	Avg DIM	Avg livewt bv	Avg fertility bv	Ave Friesian 16ths
group 1	111	447	-84	-42	-40	171	73.4	-4.2	15.3
group 2	111	465	-49	12	5	173	60.0	-2.7	14.3
group 3	111	453	-7	21	16	174	40.1	-1.8	13.3
group 4	111	450	-1	45	56	174	14.9	-2.3	9.8
group 5	111	448	47	124	119	175	-9.9	-1.4	6.9
	555	452	-19	32	31	174	35.7	-2.5	11.9

There's always room for improvement

That Fertility BV will cost you on farm.



"There's more money in a Milking cow than a Dry cow!"

There's always room for improvement

Dispelling the myth that good cows are harder to get in-calf

Breeding Worth

Southland - 2019 Within herd ranking - BW	Number of cows	6 Week In-Calf Rate	3 Week Submission Rate	Conception Rate	Not In-Calf Rate
Top Quartile	93,179	69.1	78.2	54.3	13.8
2nd Quartile	93,557	67.9	76.5	54.2	15.0
3rd Quartile	93,374	66.0	74.3	53.6	16.4
Bottom Quartile	93,036	63.1	71.7	52.0	19.1

There’s always room for improvement

Focussed on the future

- ‘If we are not milking more cows in this region we are going to have to be milking better cows’
- Profitability, fertility, efficiency and smart cow selection will define success

Focussed on the future - Genetics 2025