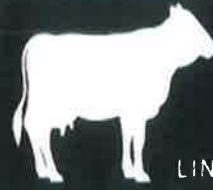




**siddc**

South Island Dairy Demonstration Centre



**LUDF**

LINCOLN UNIVERSITY DAIRY FARM

# LUDF FOCUS DAY

## 4 May 2022

### LUDF Spring Update

- 2020/21 Dairy Base, 2021/22 revised costs, 2022/23 draft budget.
- Reproduction performance.
- Impacts of 10 in 7 on costs and returns.
- Plantain. Costs of establishment. Grazing.

### Presentations from Guest Speakers

- **Monitoring your nitrogen footprint.** A farmer's example of how we can do this. Speaker: Phil Everest.
- Cow Collars (**Allflex**) Speaker: Trevor Green
- Cow Tags (**Cow Manager**) Speaker: Jared Bekhuis
- Farm Management System (**Halter**) Speakers: Gus Hewitt & Theo Beaumont

Lunch Sponsored by:

**ravensdown** 



**Lincoln University Dairy Farm (LUDF)**

@LUDairyFarm · Dairy Farm



Enquiries:

Ph: 03 423 0022

Email: [office@siddc.org.nz](mailto:office@siddc.org.nz)

Visit the website:

[www.siddc.org.nz](http://www.siddc.org.nz) for weekly updates on Farm Walk Notes



Partners Networking To Advance South Island Dairying


**SIDDC** South Island Dairying Demonstration Centre

# Welcome to Lincoln University Dairy Farm (LUDF)

The farm is a fully operational, commercial dairy farm with a number of potential hazards for both visitors and staff. Many of the potential hazards cannot be eliminated while also providing access to visitors therefore all staff and visitors **MUST** watch for potential hazards and act with caution.

## Hazard Summary: Look, think, act.

The following chart provides a reminder of the types of hazards at LUDF. Watch for these and any other hazards that may be on farm today.

<b>People:</b> <ul style="list-style-type: none"> <li>• Uninformed / ill prepared visitors may be the greatest risk</li> </ul>	<b>Animals:</b> <ul style="list-style-type: none"> <li>• <b>You are in their space</b></li> </ul>	<b>Milking shed:</b> <ul style="list-style-type: none"> <li>• Moving rotary platform</li> <li>• Confined animals</li> <li>• Chemicals</li> </ul>
<b>Eyes / Ears:</b> <ul style="list-style-type: none"> <li>• Water / oil / milk / chemical splashes</li> <li>• Welding flashes</li> <li>• Loud machinery</li> </ul>		<b>Touch:</b> <ul style="list-style-type: none"> <li>• Hot / cold surfaces, hot water, chemical burns</li> <li>• Electric fences – treat them as high voltage power sources</li> </ul>
<b>On farm machinery and tools</b> <ul style="list-style-type: none"> <li>• Chainsaws, hand tools etc. generate noise, fragments</li> </ul>	<b>Potential slips / trips:</b> <ul style="list-style-type: none"> <li>• Uneven surfaces occur across the farm</li> <li>• Fences</li> <li>• Drains</li> <li>• Underpass</li> <li>• Effluent pond</li> </ul>	<b>Vehicles:</b> <ul style="list-style-type: none"> <li>• Contractors and farm equipment – <b>act as though they can't see you</b> – keep out of their way</li> <li>• Centre Pivot takes precedence over your plan</li> </ul>

**ARE YOU TRAINED FOR WHAT YOU ARE ABOUT TO DO? If not, STOP.**

**If you are uncertain how you should act or proceed, stop and contact the farm manager, other farm staff or your host.**

By entering this farm, you are acknowledging your receipt of this hazard summary, and your agreement to take personal responsibility to watch out for potential hazards, and act in such a manner as to protect yourself and any others also on-farm.

# Speakers & Contents

## Introduction

## Farm Update

Peter Hancox, *LUDF farm manager.*

Jeremy Savage, *Macfarlane Rural Business*

Recognition of SIDDC and support of members

**Monitoring your nitrogen footprint.** A farmer's example of how we can do this. Speaker: Phil Everest.

## Technology

Cow Collars (**Allflex**) Speaker: Trevor Green

Cow Tags (**Cow Manager**) Speaker: Jared Bekhuis

Farm Management System (**Halter**) Speakers: Gus Hewitt & Theo Beaumont

## Health and Safety Message

# LUDF Season Update

## 1. LIVESTOCK

### Stock Reconciliation:

MA In Calf cows on track to winter 575

Includes 9 positive Johnes cows

Aiming to peak milk @ 560 cows, only leaves 15 spare cows.

Allows for only 2.6 % winter losses (LUDF always very good).

3% target, 4 % common for winter loss rate.

Winter losses = difference between peak cows and cows 1<sup>st</sup> June.

To cull Johnes, would end up 550 cows. Want to maintain stock numbers.

### Decision:

- Keep the Johnes cows rather than take risk on buying cows.
- Permanently tag the cows.
- Remove calves & Cows ASAP at birth from springers.
- Monitor these cows condition and cull early if fail in 2022/23

### Challenge

Have been testing for Johnes for 8+ years and still getting 10-15 cows per year showing up in milk herd testing and backed up by blood tests. LUDF had a setback purchasing 2<sup>nd</sup> Calvers when had the high IC heifer MT rate 2019, hence reluctant to purchase more cows.

## 2. BODY CONDITION SCORE

Cows went the through the spring well with body condition. Fell off against the trend and targets through November & December (Mating time!).



LINCOLN UNIVERSITY DAIRY FARM

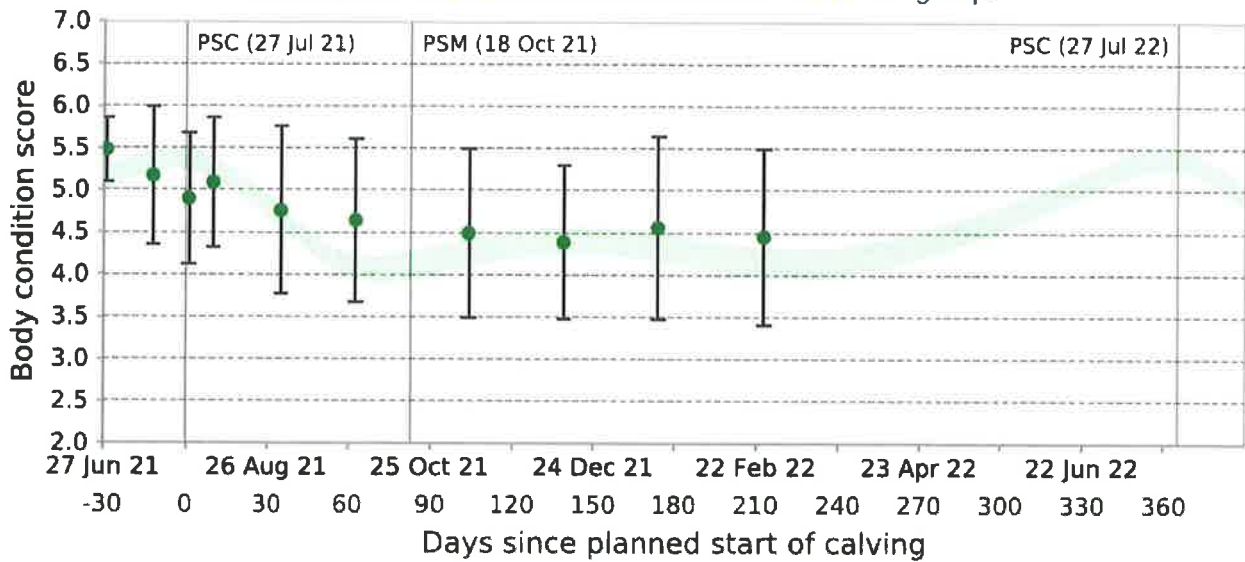
Report Date: 28 Mar 22

### Body Condition Score

Animal group: Numbered (Tagged) Animals

Planned start of Calving: 27 Jul 21

Denominator is limited to the scored cows within the group.



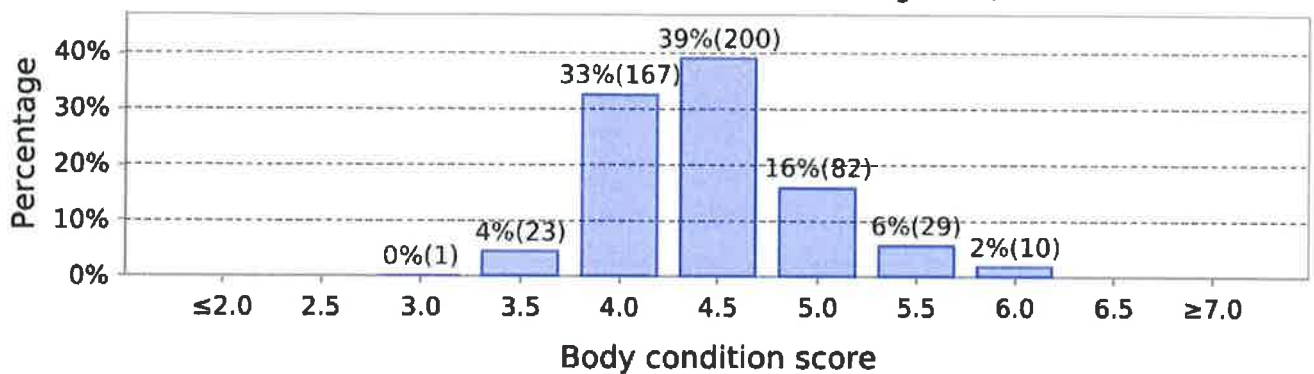
● Optimal herd average (including heifers).

95% of animals lie within this range { Average



### Body condition score

25 Feb 22 (512 animals - identified, average: 4.5)



### 3. REPRODUCTION

#### Fertility Focus 2021: Seasonal

LINCOLN UNIVERSITY DAIRY FARM  
PO Box 85094  
LINCOLN UNIVERSITY  
7647

Report date:	11/02/22
PTPT:	BxCy
Herd Code:	6/114
No of cows included:	559
These cows calved between:	10/06/21 and 16/12/21
Mating start & end date: <small>(based on AP or pregnancy test data)</small>	18/10/21 - 01/01/22
Next planned start of calving:	27/07/22
Duration of mating:	76 days
Duration of AB period:	75 days



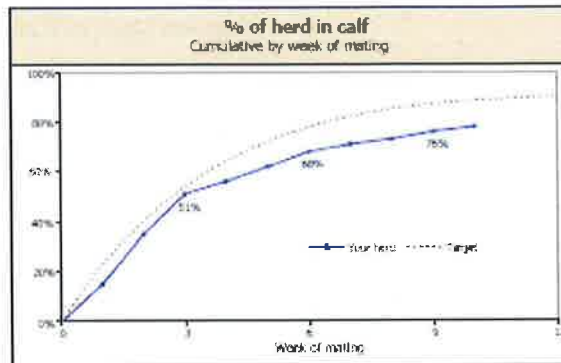
#### 1 Overall herd reproductive performance

**6-week in-calf rate**  
Percentage of cows pregnant in the first 6 weeks of mating

Your herd    
Aim above

**Not-in-calf rate**  
Percentage of cows not pregnant after 76 days of mating

Your herd    
Aim for



#### 2 Drivers of the 6-week in-calf rate

**3-week submission rate**  
% of cows that were inseminated in the first 3 weeks of mating

Your herd    
Aim above

**Non-return rate**  
% of inseminations that were not followed by a return to heat

Your herd    
Aim above

**Conception rate**  
% of inseminations that resulted in a confirmed pregnancy

Your herd    
Aim above

#### 3 Key indicators to areas for improvement

**Calving pattern of first calvers**  
Well managed heifers get in calf quickly and calve early.

Calved by	Week 3	Week 6
Your herd	<input type="text" value="87%"/>	<input type="text" value="98%"/>
Aim above	<input type="text" value="80%"/>	<input type="text" value="95%"/>
	<input type="text" value="☆☆☆☆"/>	<input type="text" value="☆☆☆☆"/>

**Calving pattern of whole herd**  
Old late calvers reduce in-calf rates?

Calved by	Week 3	Week 6	Week 9
Your herd	<input type="text" value="75%"/>	<input type="text" value="91%"/>	<input type="text" value="100%"/>
Aim above	<input type="text" value="67%"/>	<input type="text" value="88%"/>	<input type="text" value="98%"/>
	<input type="text" value="☆☆☆☆"/>	<input type="text" value="☆☆☆☆"/>	<input type="text" value="☆☆☆☆"/>

**Pre-mating heats**  
A high % of well managed cows will cycle before the start of mating.

Your herd    
Aim above

**3-week submission rate of first calvers**  
Well managed heifers cycle early

Your herd    
Aim above

**Heat detection**  
A high % of early-calving mature cows should be inseminated in the first 3 weeks of mating.

Your herd    
Aim above

**Non-cycling cows**  
Treated non-cyclers get in calf earlier.

Treated	By MSD	Wks 1-3	Wks 4-6
Your herd	<input type="text" value="0%"/>	<input type="text" value="2%"/>	<input type="text" value="0%"/>

Rating	What does it tell me?	What should I do?
☆☆☆☆	Top result	Ideal - keep up the good work!
☆☆☆	Above average	Getting there - focus on getting the details right.
☆	Below average	Plenty of room to improve - seek professional advice.
	No result	Not enough information provided - seek help with records.

**Performance after week 6**  
Expected not-in-calf rate helps assess management affecting performance after week 6 (including bull management and herd nutrition).

**Not-in-calf rate**  
Your herd    
Expected

# Behind Your Detailed Fertility Focus Report



**Report period: Cows calved between 10/06/21 and 16/12/21.**  
This was the most recent period with sufficient herd records that enabled an analysis to be completed.

**Calving system: Seasonal**  
Your herd has been classified as seasonal calving because most calvings occurred in a single batch lasting less than 21 weeks.

**Level of analysis: Detailed.**  
Your good record keeping means a detailed analysis was possible for your herd.

Report date: 11/02/22

PERF: BJCY

Herd Code: 6/114

Calvings up to this date requested for analysis: 12/02/22

No of cows included: 559

These cows calved between: 10/06/21 and 16/12/21

Mating start & end date: 18/10/21 - 01/01/22  
(Based on AB or pregnancy test date)

## Part A) Herd records cross check

Check that the herd records in the table are complete and correct.

2021/22	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
No. of calvings		217	272	77	1								567
No. of AB matings					373	420	156						949
No. of preg tests								550	151				701
No. of non-aged/late aged positive preg tests													0
No. of cows culled or died	4	1	9	4	1	1	3	3					26

## Part B) Notes on the calculations

Use the following notes to see how your results were calculated.

### 1 Overall herd reproductive performance

**6-week in-calf rate**

Your report has been based on the mating and pregnancy test results you supplied. The ACTUAL 6 week in-calf rate is shown for your herd.

**Records available for not-in-calf rate**

Recorded pregnant	440
Recorded empty	107
Doubtful/recheck*	6
Culled without pregnancy test	6
No record of cull or pregnancy test	0
<b>Cows analysed</b>	<b>559</b>

\*Includes cows whose most recent empty diagnosis was less than 35 days after mating end date.

### 2 Drivers of the 6-week in-calf rate

**3-week submission rate**

557 cows had calving dates in the required range and were not culled before day 21 of mating and 94% of these were submitted during the first 21 days of mating.

**Non-return rate**

Non-return rate is not calculated when pregnancy test results provide an accurate estimate of conception rate.

**Conception rate**

The conception rate was calculated for 931 AB inseminations on and between 19.10.21 and 31.12.21

### 3 Key indicators to areas for improvement

**Calving pattern of first calvers**

153 cows with eligible calving dates were recorded as calving at less than 34 months of age. The calving pattern of first calvers was calculated from their records.

**Calving pattern of whole herd**

567 cows had calving dates that were eligible for this report.

**Pre-mating heats**

557 cows had calving dates in the required range and were not culled before day 21 of mating and 468 of these had a pre-mating heat recorded.

**3-week submission rate of first calvers**

152 first calvers had calving dates in the required range and were not culled before day 21 of mating and 95% of these were submitted during the first 21 days of mating.

**Heat detection**

240 cows at least 4 years old at calving had calved at least 8 weeks before mating start date and were not culled before day 21 of mating and 94% of these were submitted during the first 21 days of mating.

**Non-cycling cows**

557 cows had calving dates in the required range and were not culled before day 21 of mating and 13 of these were identified as being treated for non-cycling.

**Performance after week 6**

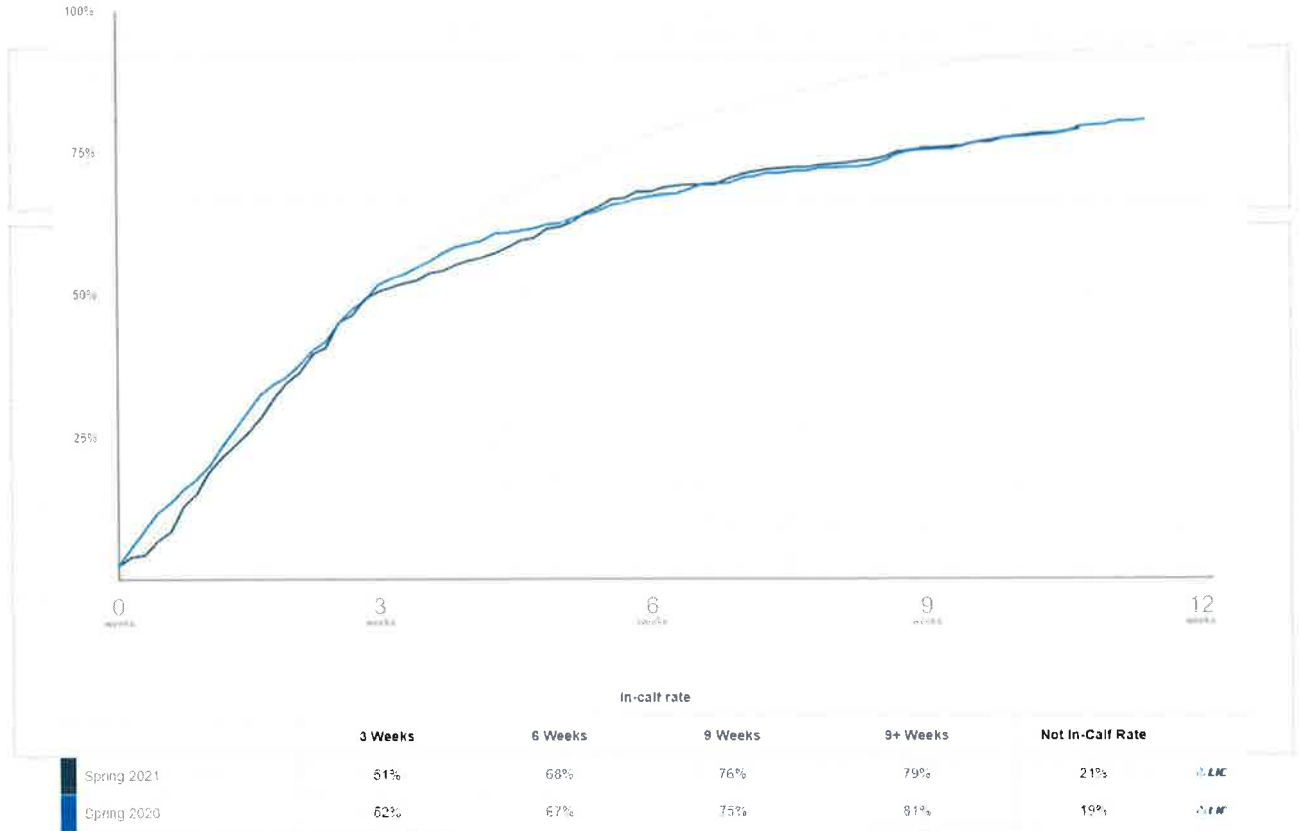
Your herd's not-in-calf rate and 6-week in-calf rate were used to determine the success of your herd's mating program after the first six weeks. If both were used after week 6 of mating, this gives an assessment of how well they got cows in calf.

**Induced cows**

No cows were identified as having induced calvings. If cows were induced, ensure all inductions are recorded.

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Users should obtain professional advice for their specific circumstances.

### 3.1. LUDF Results



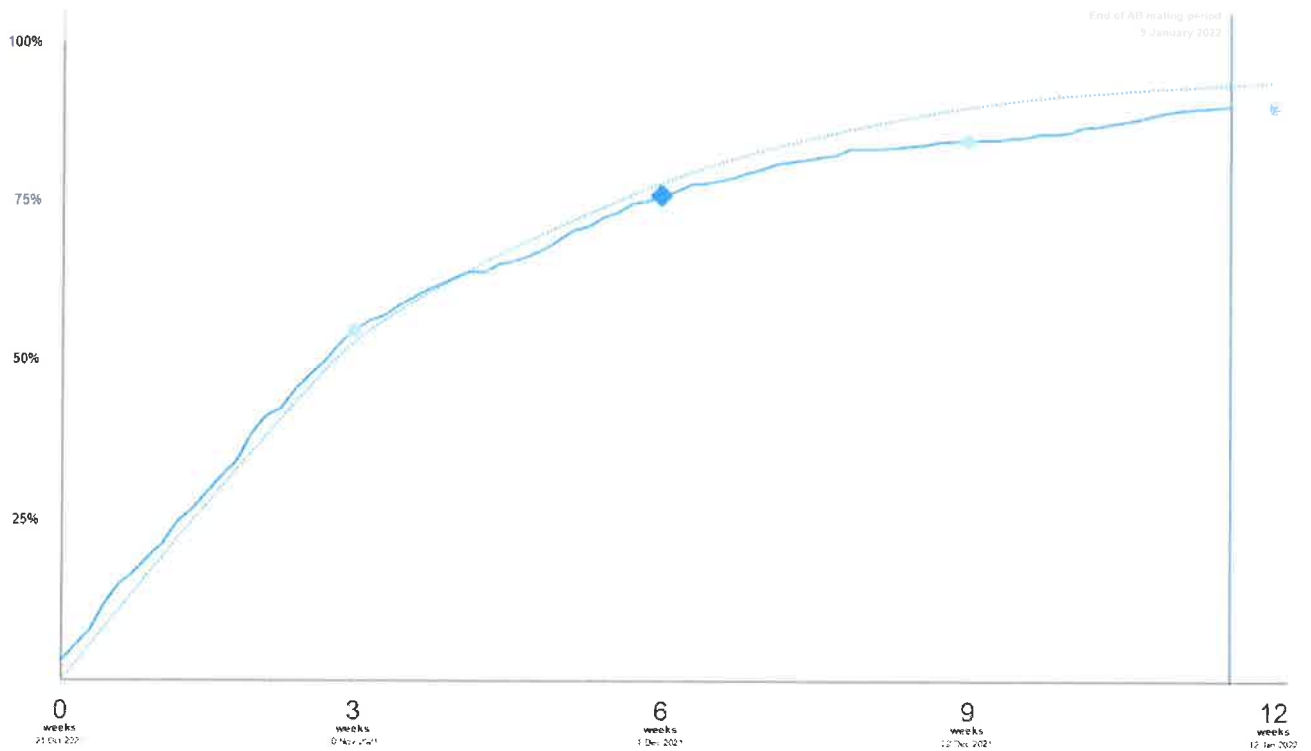
In calf rate over mating, the first 3 weeks are spot on target, it is from week 4 that we LUDF consistently drops off target (6<sup>th</sup> November). This years empty rate is 2% higher with the AB/Mating period being approximately a week shorter.



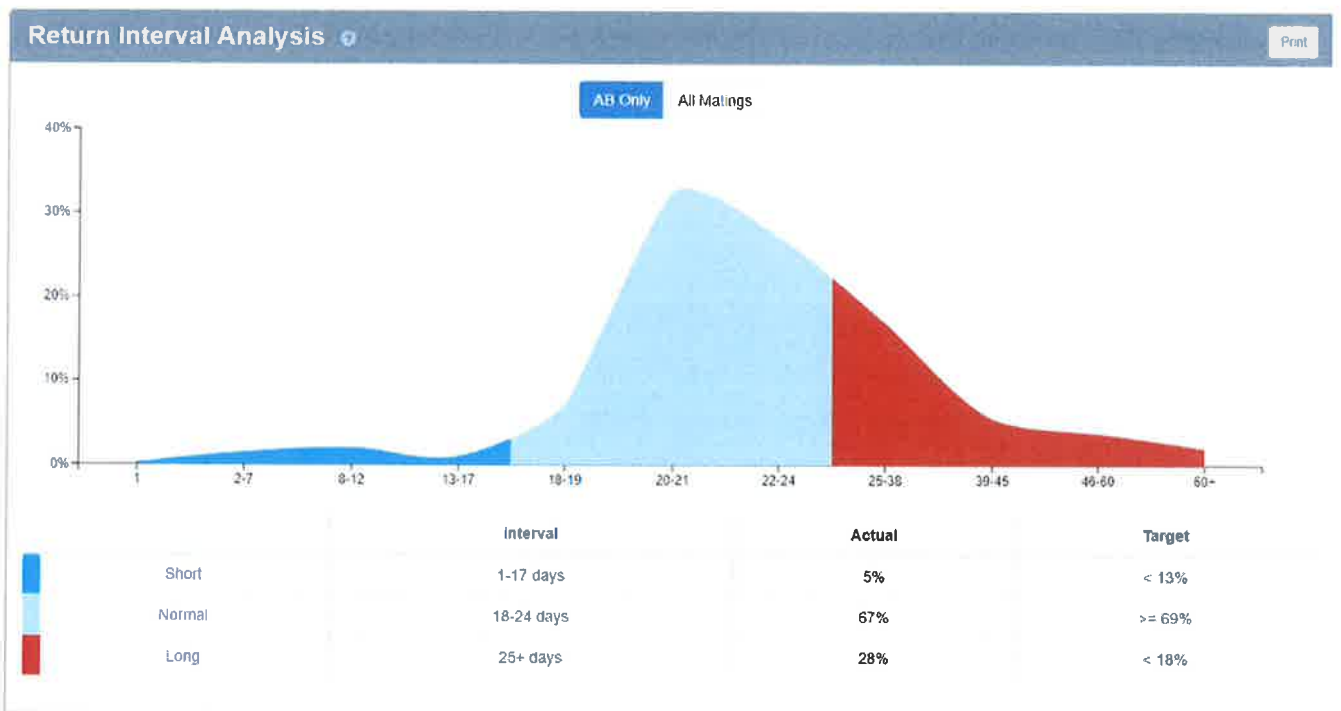
Return interval analysis is in the normal range. LUDF team are doing a good job with drafting especially with the long AB period, a good focus is being maintained.



### 3.2. Liam Kelly Results



Comparison with Liam Kelly, Rakaia – North, 10 % empty. Liam has been able to maintain incalf rates over the mating period. Liam’s farm have similar cows, 500+ kgMS/cow. The feeding includes in shed feeding.



Liam’s return interval analysis shows a similar trend to LUDF.

### 3.3. 2022/23 Mating

After 15+ years of these results, we have a lot of theories that have been tested and failed. For 2022/23 we will make some tweaks to the mating program – to be confirmed and presented for October 2022 focus day.

We will be testing a number of key data points between the farms in 2022 Mating, including:

1. Pasture testing for nutritional parameters.
2. Blood Ketones (highlights energy balance in cows).
3. Neospora levels in herds.

SIDDC/LUDF will be seeking some industry support and knowledge on this list to highlight the difference between a highly fertile herd, Liam Kelly and LUDF.

## 4. PASTURE, FEEDING & MILK PRODUCTION

### 4.1.1. Farmax Dairy:

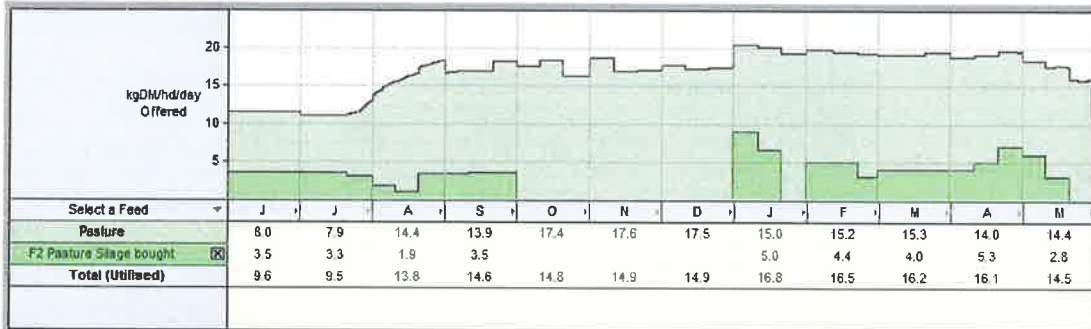
Supplement use 2020/21	591 kgDM/cow	(average 135 kgN)	14.5 TDM
Supplement use 2021/22	705 kgDM/cow	(average 142 kgN)	14.5 TDM

With very low nitrogen, supplement use has drifted up from traditionally 400 kgDM/cow to 600 – 700 kgDM/cow.

Summary for this season:

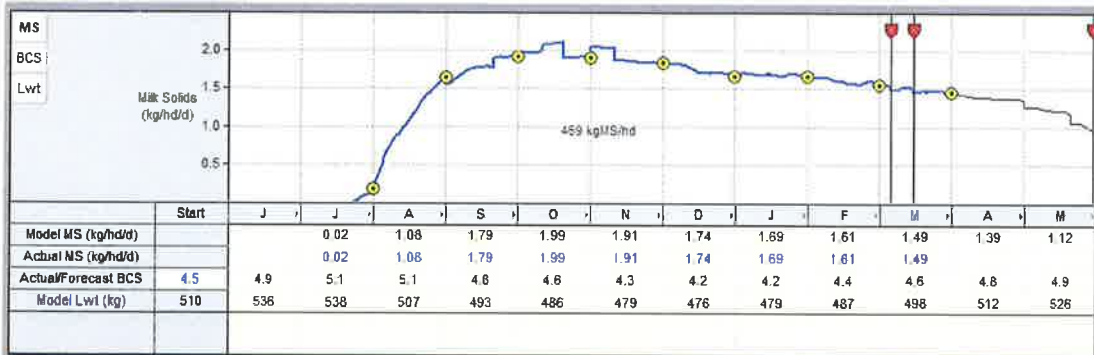
- Feed harvested maintained – with a challenging season and changing farm system.
- Have been on top of the farm covers and hit residual targets more often this season.
- Topping last season 273 Ha. This season 188 Ha. Feed quality and residuals have been tighter.
- Budgeted to have surplus feed to harvest as silage with 10 in 7. Has not happened with poor pasture growth and extended regrassing periods with plantain. Farm has grown less grass, but the feed harvested down the cows throats has been maintained.

		20/21 Revised	2020/21 Actuals	Total	
Farm	Effective Area	160	160		ha
	Stocking Rate	3.5	3.5	0.0	cows/ha
	Potential Pasture Growth	18.1	19.2	1.1	t DM/ha
	Nitrogen Use per farm ha	161	135	-26	kg N/ha
	Feed Conversion Efficiency (eaten)	11.3	10.6	-0.7	kg DM eaten/kg MS
Herd	Cow Numbers (1st July)	560	556	-4	cows
	Peak Cows Milked	557	556	-1	cows
	Days in Milk	285	280	-5	days
	Avg. BCS at calving	5.1	5.1	0.0	BCS
	Liveweight per farm ha	1,663	1,640	-23	kg/ha
Production (to Factory)	Milk Solids total	255,471	280,359	24,888	kg
	Milk Solids per farm ha	1,597	1,752	156	kg/ha
	Milk Solids per cow	459	504	46	kg/cow
	Peak Milk Solids production	2.10	2.30	0.20	kg/cow/day
	Milk Solids as % of live weight	96.0	106.9	10.8	%
Feeding	Pasture Eaten per cow *	3.8	4.2	0.3	t DM/cow
	Supplements Eaten per cow *	0.6	0.5	-0.1	t DM/cow
	Off-farm Grazing Eaten per cow *	0.7	0.7	0.0	t DM/cow
	Total Feed Eaten per cow *	5.2	5.4	0.2	t DM/cow
	Pasture Eaten per farm ha	14.5	14.5	0.1	t DM/ha
	Supplements Eaten per farm ha	2.8	2.0	-0.8	t DM/ha
	Off-farm Grazing Eaten per farm ha	4.6	4.5	-0.1	t DM/ha
	Total Feed Eaten per farm ha	21.9	20.9	-0.9	t DM/ha
	Supplements and Grazing / Feed Eaten	25.9	22.5	-3.4	%
	Bought Feed / Feed Eaten *	15.4	10.9	-4.5	%



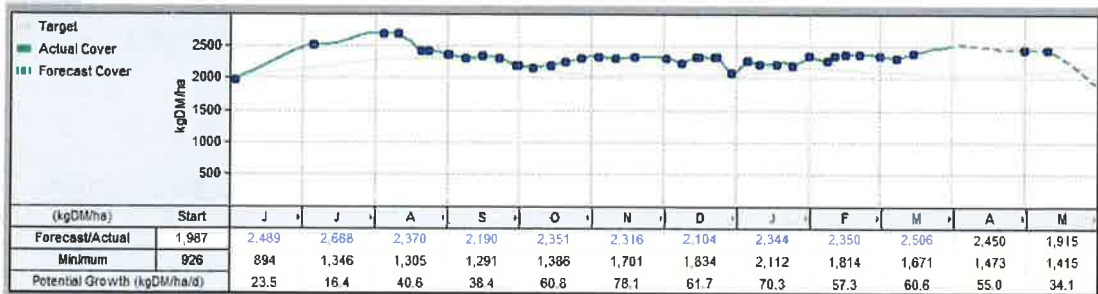
Production for Cows at home

k Actuals... ⊕ Calibrate Milk...



Pasture Cover for LUDF DSM

ange...



## 4.2. Challenge for the Farm System 2022/23

- Silage use too high by 200 kgDM/cow.
- Supplement high by 700 kgDM/Ha.
- Have increased effluent area from 30 Ha to 80 Ha.
- Nitrogen use limited on effluent area, have expanded area and employed clear tech, and 10 in 7 = less effluent going on farm.

### Nitrogen Use:

- Historically effluent on very small area, 30 Ha, only used 40-50 kgN/Ha with high loading.
- 10 in 7 milking (less effluent), clear tech and increased area will drop nitrogen loading dramatically on effluent area.
- Have increased area to 80 Ha. Will confirm nutrient budget but expect to increase N use to 140 kgN on this area. Have invested \$130,000 in effluent reticulation to increase area.
- Have built more solid set irrigation and increased pivot area to reduce nitrogen leaching risk.

2022/23	Area	kgN/Ha	total
Pasture	115	182	20930
Effluent + Regrass	47	45	2115
<b>TOTAL</b>	<b>162</b>	<b>142</b>	<b>23045</b>
2022/23 - TBC	Area	kgN/Ha	total
Pasture	72	185	13320
Effluent + Regrass	90	140	12600
<b>TOTAL</b>	<b>162</b>	<b>160</b>	<b>25920</b>

- Another 18 kgN/Ha @ 15:1 = 270 kgDM/Ha = 80 kgDM/cow less silage.
- Will need to confirm that any additional nitrogen leaching risks are negligible.

## 5. PLANTAIN

The target is to plant 10% of the farm a year in plantain every year. Planting of the crop will be in approximately 8 Ha areas (depending on paddock size). The first paddock planted as soon as pasture growth exceeds demand (approx. 15<sup>th</sup> October). The 2<sup>nd</sup> paddock will be planted as soon as the 1<sup>st</sup> paddock is contributing to the feed growth on farm, (2,000 kgDM/Ha or higher). The planting program:

1. Paddock Selection, avoid the high Dock population paddocks.
2. Soil temperatures, 10 degrees and rising.
3. Spray paddocks with high rates of Glyphosate (5 l/Ha) + 900 mls Starraine Extra + pulse.
4. 2-week plant back.
5. 2 l/Ha Glyphosate the day of planting.

- Direct Drill:
  - Ecotain plantain 10 kg/Ha
  - Medium leaf White clover 2 kg/HA
  - Slug bait used if high risk / Trash evidence of slugs with slug board placed after first spray.
- Herbicide to tidy up Dock seedlings, @ 4-6 true leaf plantain.
  - Dicamba 400 mls/Ha "Kamba 750 Nufarm"
  - 28-day plant back.

IF dicamba used, will be prepared to re-establish clover.

Or T-Max (not preferred) – last resort, also good for Californian thistles.  
1 Year plant back for clover.

- Graze when plant is established and not pulling.

Agronomy for LUDF supported by Agricom.

Planned cost:

Glyphosate (high rate with docks) 5 l/Ha + spray + adj	\$ 70.00
Cost of seed \$20.99 / kg. 10 kg/Ha + 2 kg/Ha White Clover @ 15/kg.	\$ 240.00
Dicamba 400 mls/Ha = \$40/Ha + spray	\$ 65.00
Drill	\$ 110.00
<b>TOTAL Plan</b>	<b>\$ 485.00</b>

Actual Cost

Glyphosate (high rate with docks) 5 l/Ha + spray + adj	\$ 67.00
Glyphosate (high rate with docks) 5 l/Ha + spray + adj	\$ 67.00
Cost of seed 10 kg/Ha + 2 kg/Ha White Clover @ 15/kg.	\$ 402.00
Dicamba 400 mls/Ha = \$40/Ha + spray	\$ 60.70
Drill	\$ 130.00
Slug Bait	\$ 121.00
<b>TOTAL Actual</b>	<b>\$ 847.70</b>

Pasture Regrass Cost

Glyphosate (high rate with docks) 5 l/Ha + spray + adj	\$ 67.00
Cost of seed Ryegrass 20 kg/Ha + 4 kg/Ha White Clover + 2 plantain.	\$ 440.00
Preside + spray	\$ 68.00
Drill	\$ 130.00
<b>TOTAL Actual</b>	<b>\$ 705.00</b>

## 5.1. Impact on Farm System:

### 1<sup>st</sup> Paddock

- Sprayed out 30<sup>th</sup> November.
- Planted 13<sup>th</sup> December
- First grazing 31<sup>st</sup> January.
- 1<sup>st</sup> Grazing late with withhold on herbicide – plenty of feed.
- 62 days from spray to grazing.

### 2<sup>nd</sup> Paddock

- Has been slow to come through after planting.
- Sprayed out January 25<sup>th</sup>
- Sown Feb 8<sup>th</sup>
- Second spray 18<sup>th</sup> March
- First grazing 28<sup>th</sup> March.
- 62 days from spray to grazing.
- Normally 42 days from spray to grazing.
- Will spread plantain on before grazing
- Grass grub is having a huge effect.

Plantain taking another 20 days to establish. Impact on feeding, 2 paddocks, 16 Ha, 30 days @ 68 kgDM/Ha/day = 22 TDM of feed, taken 40 kgDM/cow of silage to fill the gap.

Dicamba was used to control seedling docks in both paddocks. This took out the clover that was planted. Will need to re-establish in the spring of 2022. In future, give the clover a miss at LUDF at establishment, and will broad cast with nitrogen / fertiliser the following spring.

AgResearch carried out an assessment in paddocks N2 and N3. This involved a transect across both paddocks, walking 14-22 paces between samples. I took 15 spade squares in each paddock.

Overall, grass grub densities appear well below damaging levels (c. 200 larvae/m<sup>2</sup>), although there are hotspots where numbers will be higher and damage more evident. There were earthworms in each sample which is pleasing in terms of soil health, although I did not count these.

The results are as follows:

N2: Mean larvae  $\pm$  SEM per metre square was  $41 \pm 14.1$ . Even sampling in what I considered grass grub damage sites, I was only finding 2-3 larvae. 53% (8) of the samples had no grass grub larvae

N3: Mean larvae  $\pm$  SEM per metre square was  $14 \pm 9.8$ . Plus found one porina caterpillar. 87% (13) of the samples had no grass grub larvae

## 5.2. Plantain Feeding:

- 2 paddocks on farm – well located.
- Clover was taken out with herbicides – minimal bloat risk.
- Similar round to grass – no less than 25 days.
- 20 cm plus with the height.

## 6. WINTER FEEDING

1. Cows heading to Hororata for winter feeding.
2. Cows will be drafted for condition. Individual cow condition score being carried out 25<sup>th</sup> May.

### Cow Drafting Mobs

1. Light condition early calver's (3.5 – 4.0 CS cows)  
*Will be fed 16 kgDM/cow on good quality feed @ 70 % utilisation.*
2. Mid condition (4.5 CS) and late calving CS 4.0.  
*Will be fed 13 kgDM/cow on good quality feed, @ 75% utilisation.*
3. Fat Cows (5.0+ CS)  
*Will be fed 10.5 kgDM/day on average feed @ 80 % utilisation.*
4. IC Heifers (already 5.5 CS)  
*Will be fed 10.5 kgDM/day on average feed @ 80 % utilisation.*

The average diet is typically 12.9 kgDM/cow for the winter.

Feed Quality	10.5 MJME Feed						11.5 MJME Feed					
	70% U			80%U			70% U			80%U		
Utilisation	430	475	520	430	475	520	430	475	520	430	475	520
Liveweight	10.6	11.3	12.1	9.3	9.9	10.6	9.7	10.3	11.1	8.5	9.0	9.7
0 Gain	12.9	13.9	14.8	11.3	12.1	13.0	11.8	12.7	13.5	10.3	11.1	11.8
0.5, 60 days	15.2	16.5	17.7	13.3	14.4	15.5	13.9	15.0	16.1	12.2	13.2	14.1
1.0 60 days	11.7	12.5	13.5	10.2	11.0	11.8	10.7	11.4	12.3	9.3	10.0	10.8
0.5 90 days	13.9	15.1	16.2	12.1	13.2	14.2	12.7	13.8	14.8	11.1	12.1	12.9
1.0 90 days												
Calf Demand (last 3 weeks)	3.0	3.5	3.8	2.6	3.1	3.3	2.7	3.2	3.5	2.4	2.8	3.0

## 7. FINANCES – 2021-22 Revised

- 556 cows Peak Milk, 3.43 cows/Ha.
- 256,000 Total Production
- 460 kgMS/cow, 1,580 kgMS/Ha.
- Cost structure tracking to \$4.69 / kgMS (Excluding depreciation).

Increased costs structure due lifts in fertiliser prices, grazing. A drop in production lifts the costs (\$/kgMS).

LUDF FINANCES Account	Revised	Budget	variation
	Final Season YTD 2020/21 \$	Final Season YTD 2020/21 \$	Final Season YTD 2020/21 \$
<b>REVENUE</b>			
Dividend Income	49,148	27,000	22,148
Sales - Bobby Calves	45,794	15,400	30,394
Sales - R2 Heifers	2,600	2,600	0
Sales - Cows	97,310	73,799	23,511
Sales - Bulls	0	4,800	(4,800)
Sales - Other Livestock	0	0	0
Sales - Milk Solids Current Season	1,745,165	1,532,238	212,927
Payments Milk Solids Prev Season	462,364	542,267	(79,903)
Milk Levy	10,608	11,199	(592)
Income - Rent	0	0	0
Income - Other	713	169	544
<b>TOTAL REVENUE</b>	<b>2,413,701</b>	<b>2,209,473</b>	<b>204,229</b>
<b>EXPENSES</b>			
<b>Salary Costs</b>			
Farm Salaries Perm & F/Term	219,168	223,000	(3,832)
Farm Casuals	24,655	30,000	(5,345)
Allowances	0	0	0
Superan,ACC,Incr Provison	8,005	14,000	(5,995)
<b>Total Farm Salary Costs</b>	<b>251,828</b>	<b>267,000</b>	<b>(15,172)</b>
<b>Operating Expenses</b>			
Internal Sales; Grazing, Feed	-11,772	0	(11,772)
Internal Services; Fees, LU Rentals	3,273	7,381	(4,108)
Appointment Expenses	2,776	1,500	1,276
H&S/Prot Clothing/BioSecurity	450	319	131
Staff Development	0	0	0
Livestock Purchases	0	0	0
Animal Health	64,822	72,189	(7,367)
Breeding	75,382	71,952	3,430
Feed & Grazing	424,212	328,397	95,815
Crops/Pastures	1,092	0	1,092
Seed	4,970	167	4,803
Fertilisers	133,856	109,784	24,072
Weed & Pest Control	720	0	720
Contractors	23,430	9,745	13,685
Electricity	74,540	84,408	(9,868)
Freight	12,489	12,627	(138)
Vehicle Expenses	17,111	18,000	(889)
R&M (except Farm Houses)	97,774	78,000	19,774
R & M (Farm Houses)	15,781	0	15,781
Dairy Shed Operating Expenses	7,925	8,306	(381)
Farm Demonstration Costs	0	0	0
Administration	13,246	22,540	(9,294)
Fixed Charges	2,544	10,377	(7,834)
Livestock Decreases (Increases)	0	0	0
Feed Decrease (Increase) Stock	0	0	0
Milk Levy Deducted	10,608	11,199	(592)
Other Expenses	0	0	0
<b>Total Farm Operating Costs</b>	<b>1,227,058</b>	<b>1,122,292</b>	<b>113,165</b>
<b>CONTRIBUTION MARGIN PROFIT (LOSS)</b>	<b>934,815</b>	<b>820,180</b>	
	266,000	266,000	
Milk Production KgMs	\$ 4.79	\$ 4.22	



**Irrigation**

This Season	53 days
Last Season	93 days

**Plantain:**

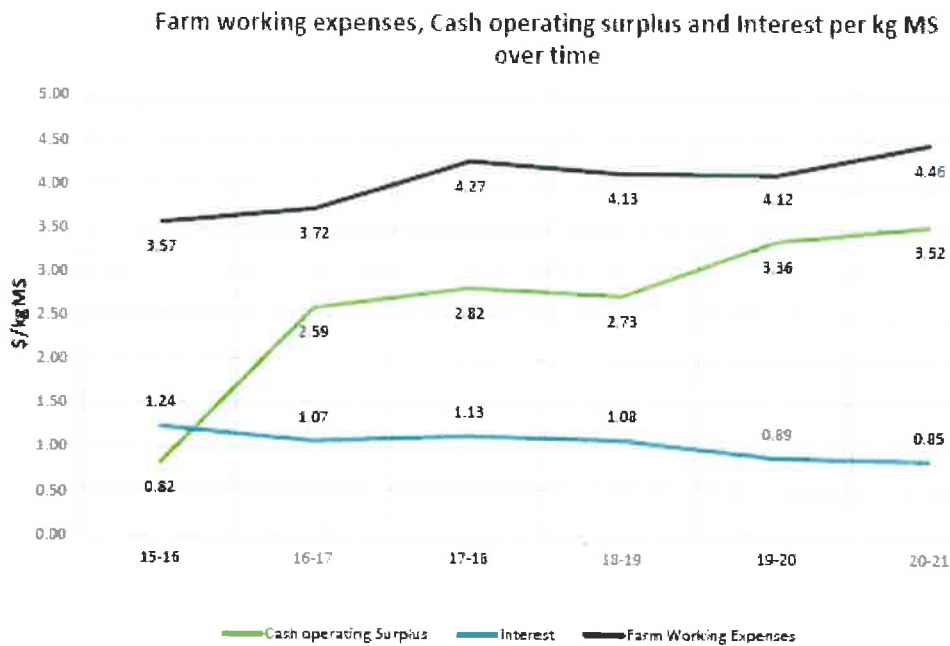
16 Ha of extra costs @ \$150 / HA (compared to regrassing)	\$ 2,400
Additional 60 TDM of silage used @ \$400 / T	\$24,000

Impact of plantain on cost structure \$0.10 kgMS for 2021/22 season.

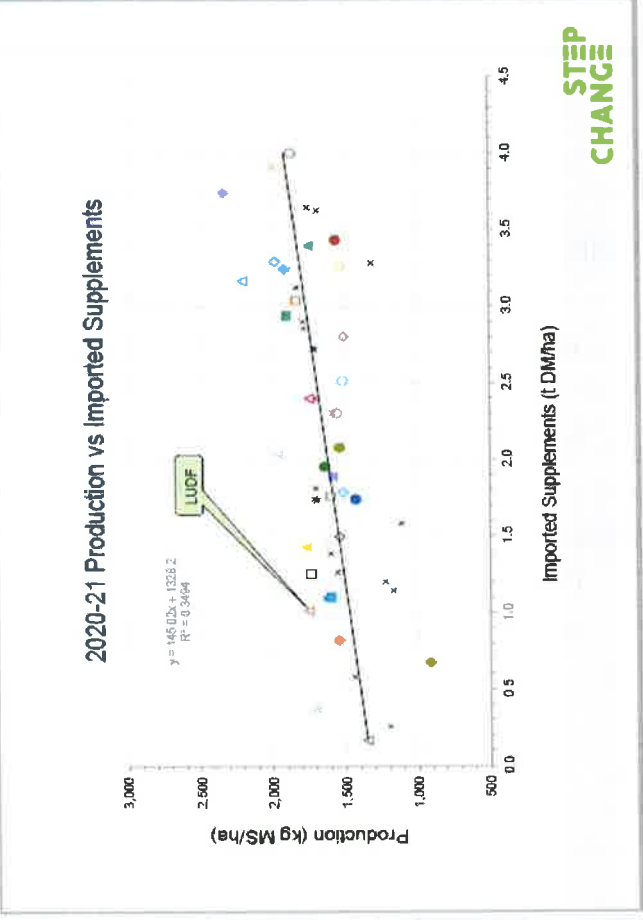
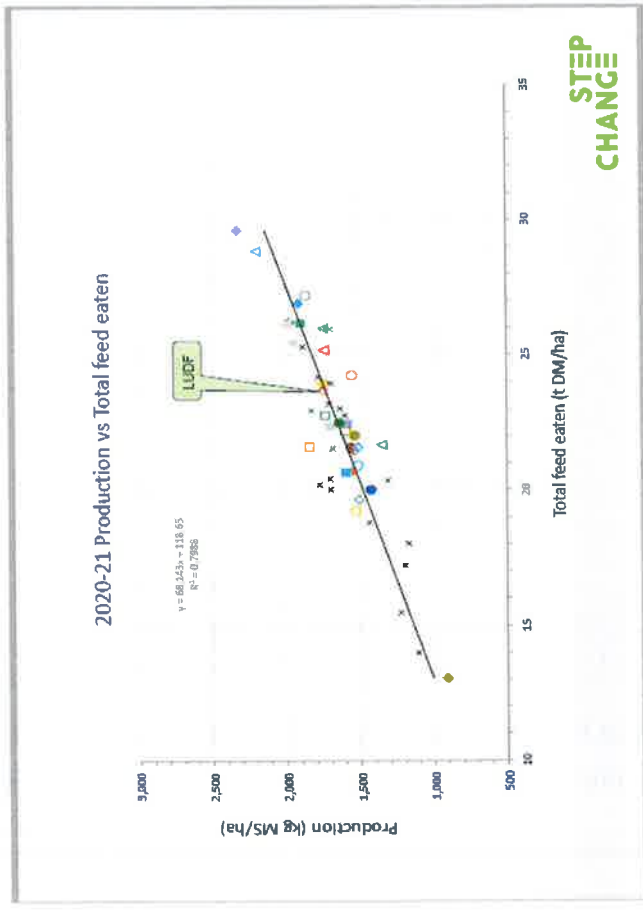
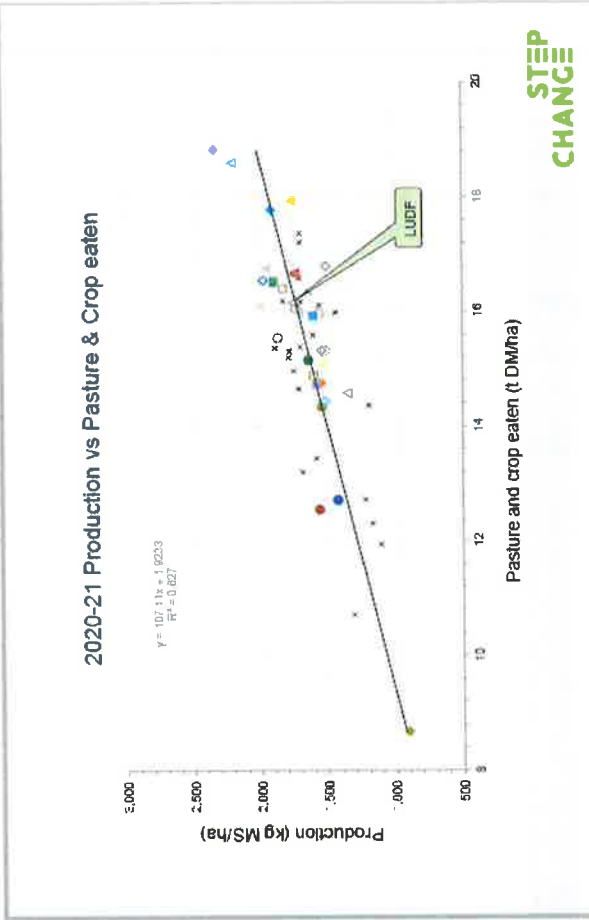
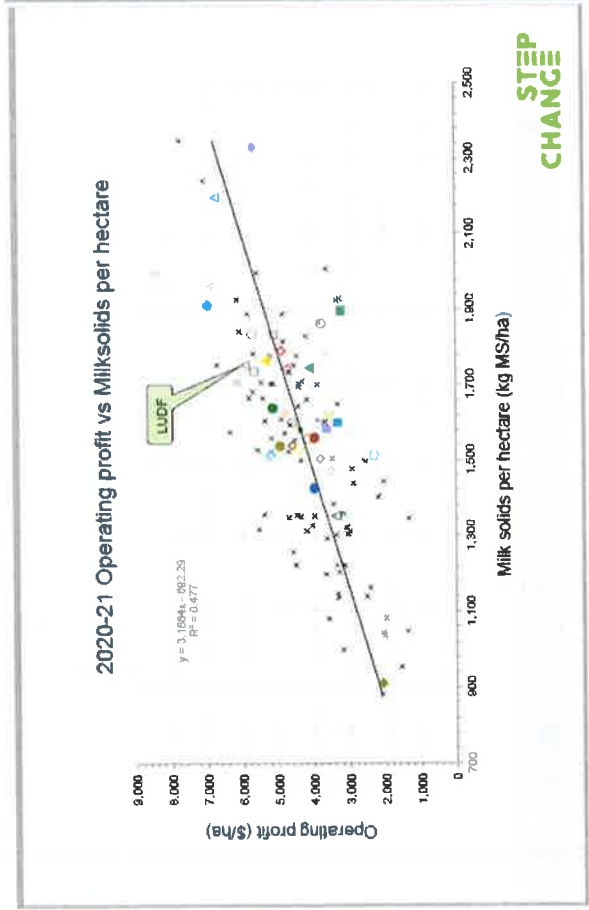
**Feeding:**

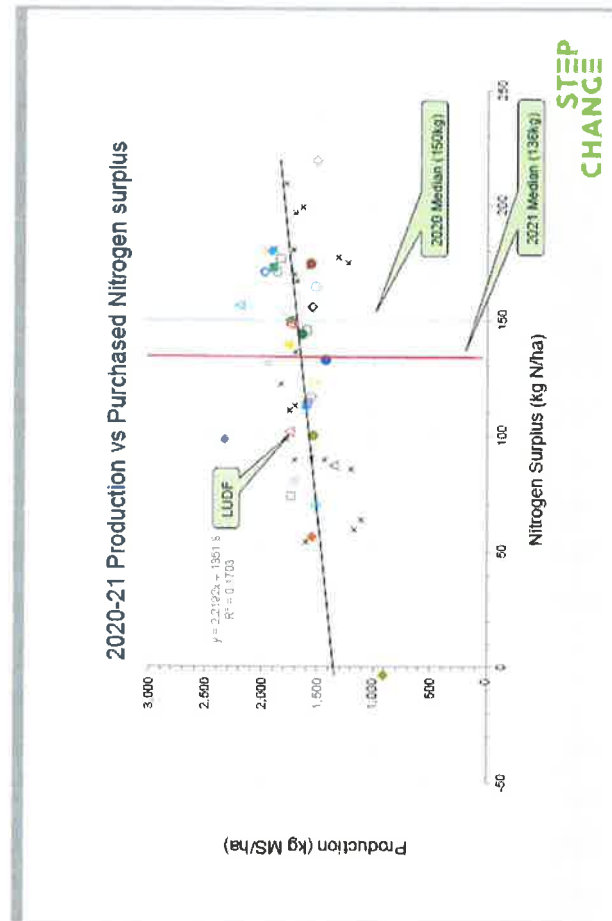
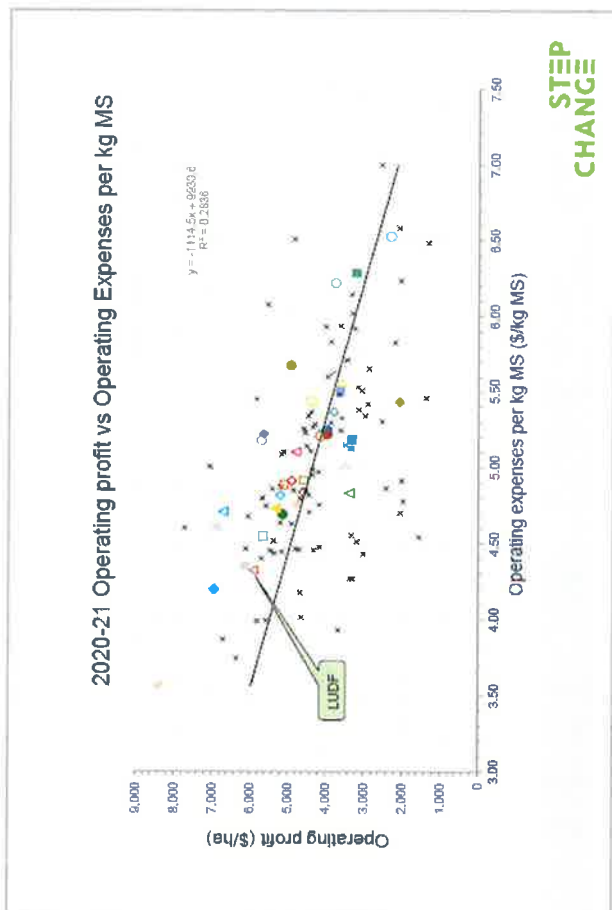
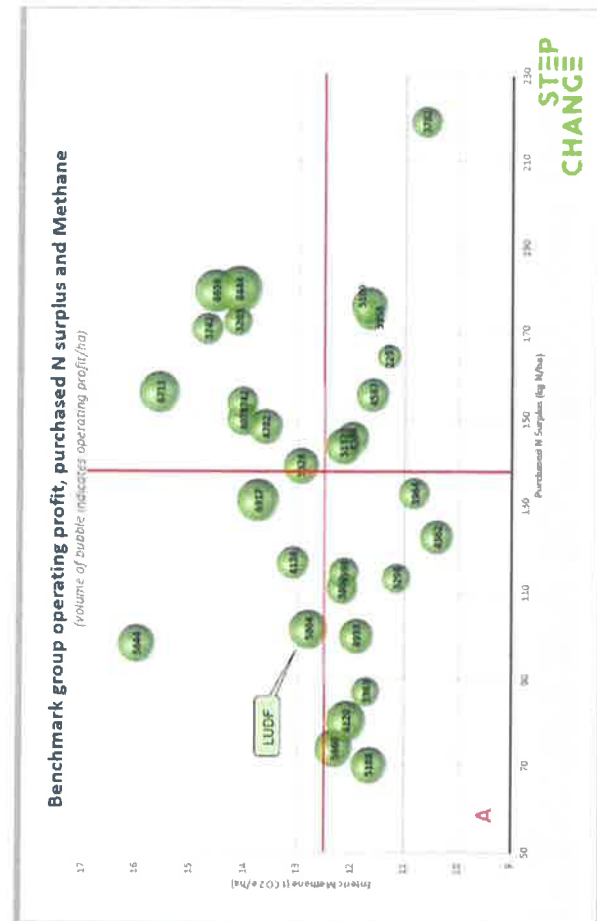
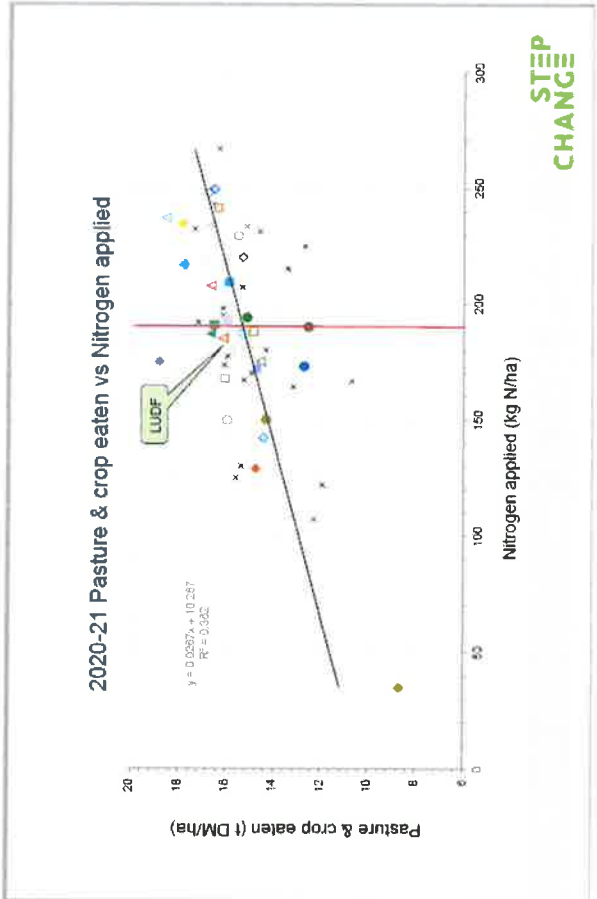
- Purchased silage on budget
- Did not harvest silage on farm as budgeted.

**7.1. Dairy Base Comparison – 2020/21**



Steady lift in farm operating/working expenditure. +\$0.50 - \$0.70 / kgMS for 2021/22 is expected. Inflation has been rampant. More to come with increased winter feed costs and supplement costs for 2022/23 season.





## 8. 10 in 7 – LESSONS LEARNED TO DATE

### 8.1. Spring

This has been a challenging spring for the team at LUDF.

1. Very wet start to calving.
2. Heifers came home 2 weeks early.
3. To date we have had only 2 full time staff members and relief help.

### 8.2. Starting the 10 in 7

- The cows got used to the routine very quickly with minimal disruption.
- At the start of calving, it did cause some difficulties with workflow.
  - Calf rearing and when to feed the calved to have warm fresh colostrum available to them.
    - We had to invest in a milk warmer and feed them at 10am every day.
- We struggled to get a good routine on the day where we only milked once at the start but as we passed the halfway point this became easier.
- The heifers were a challenge on the larger milking gap at the beginning as the cups slipped off on a regular basis and have now come right.
- As we have gone through calving it has started to make some real differences to the farm.
- Cow flow is now fantastic with cows wanting to be milked this has led to a few changes.
  - We are using a Batt latch to bring in the cows every morning.
  - Cows are in the yard in the mornings waiting to be milked.
  - We are seeing less lameness now as cows are doing less walking and most of the walking is voluntary.
  - Body condition is start of October at 4.6 BSC.
  - In the spring, no difficulty with pasture management and hitting our residuals daily.
- People
  - In spring managed to keep hours worked down over calving 50 to 60 per week.
  - The milking once a day over the weekends has a positive effect on the team.

### 8.3. Summer:

Cows

- Body condition score fell away Nov/Dec.
- Challenging early summer – 80 mm rain mid-December filled the underpass!
- Lameness went through the roof with wet December – would have been worse on TAD??
- Current lames 50% of normal.

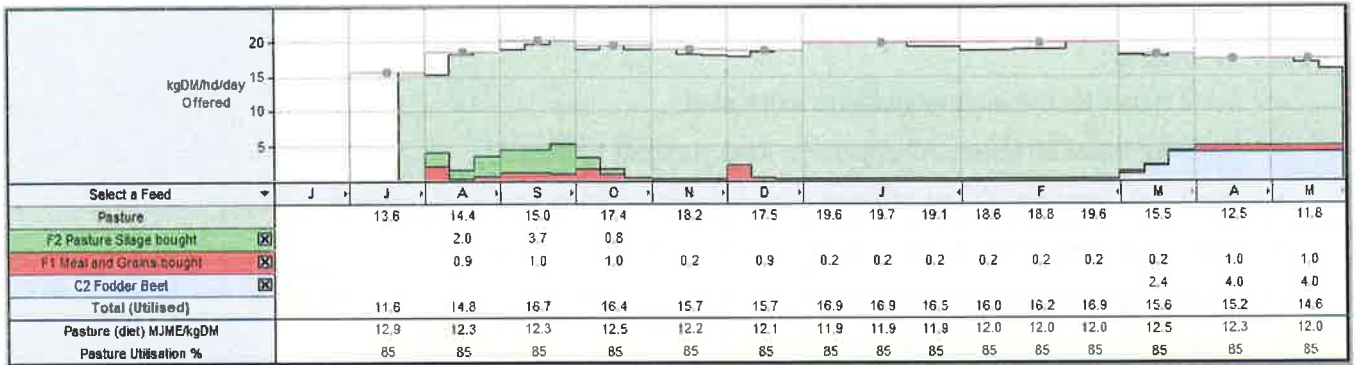
#### **8.4. People:**

- 5 + 2 roster for the summer with no extra staff.
- Summer leave all taken. All enjoyed a long summer holiday.
- Have only just kept on top of weed spraying and keeping on top of maintenance.
- 100 % retention of staff for 2022/23.
- Happy staff. Check out the webinar.
- Took the stress off managing for COVID.

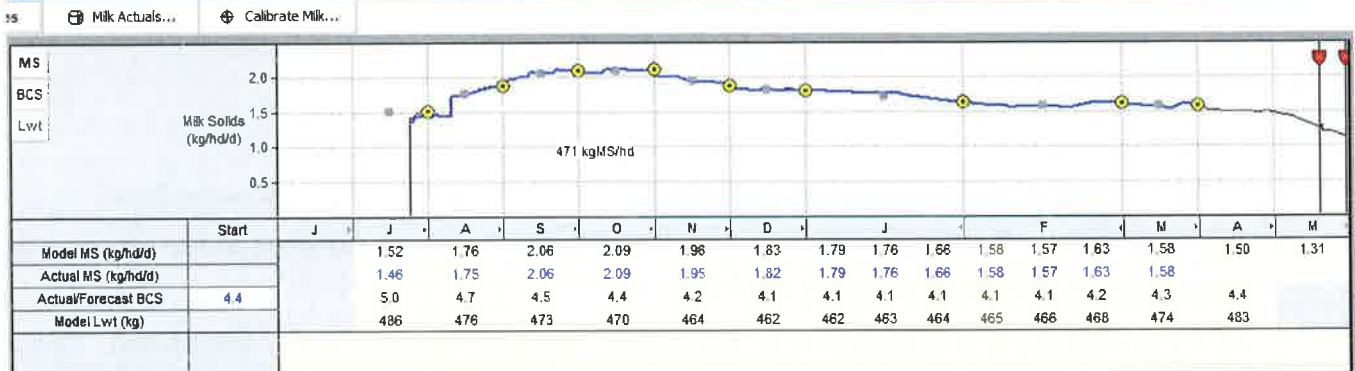
#### **8.5. Feeding Management:**

- Feed like a TAD cow.
- Limited walking by going to the closest long paddock (not necessarily the longest on the farm).
- Big break at night. If residuals need tidying up, then clean up during the day when people are about and move cows on when residual targets are met.
- MRB (Macfarlane Rural Business) have had at least 15 farms carry out 10 in 7 this season. Pasture allocation has proven to be essential to keep cows milking well. If cows can be consistently well fed, then 10 in 7 works well. A lesson learnt with our clients, is keep your grazing routines and management for 10 in 7 the same as TAD. E.g., if you feed a big break at night, and tidy up during the day for your target residual, keep this management and timing the same, regardless of the milking time. E.g., a big break at 4-5 pm for the night on OAD days if that is your management.

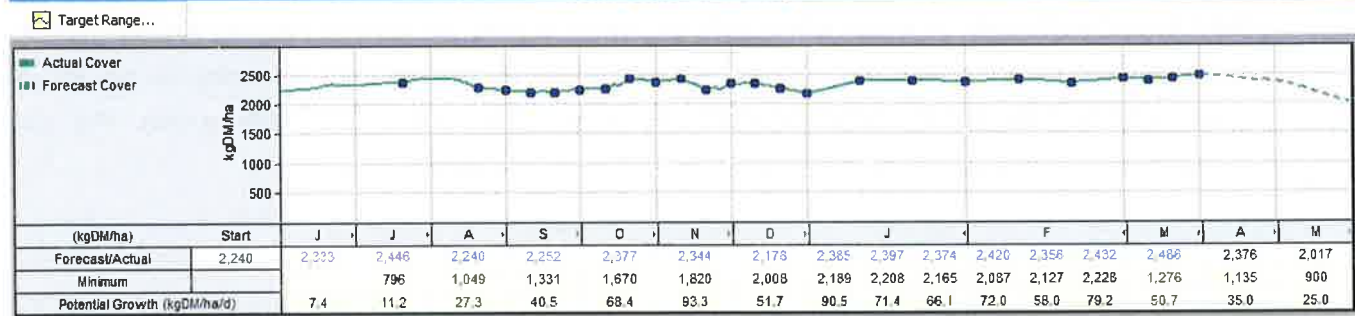
## 8.6. Maintaining the lactation curve – mid season 10 in 7



Production for Cows at home



Pasture Cover for East Dairy

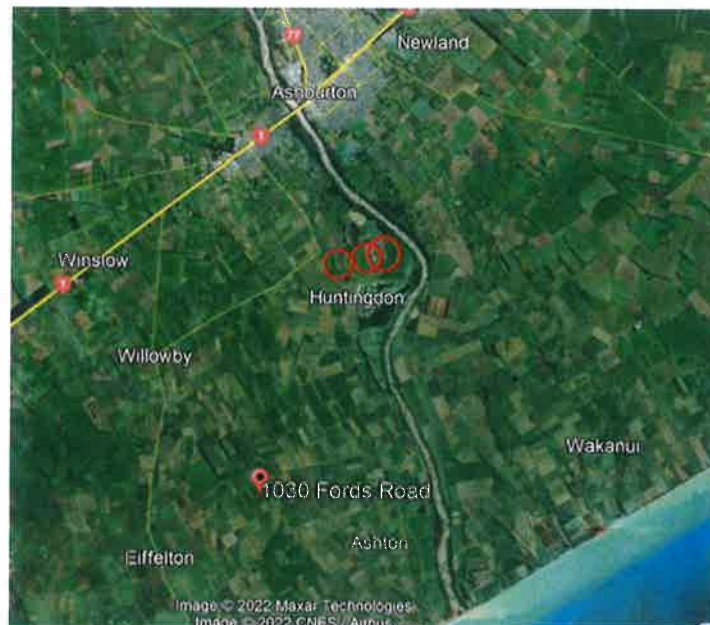


Farmmax model of East Dairy, Spenser-Bower Team, Eyrewell. 10 in 7 started 10<sup>th</sup> January. The impact on the lactation curve is very hard to spot! Given cows have a natural drop off. Cows settled into 10 in 7 very well for February and were flat lining production for 60 days. This team strongly focus on feeding cows as much grass as possible with minimal supplement. Cows shifted twice a day, big break at night, small break during the day. 1,600 kgDM/Ha residual target achieved every grazing, cows monitored closely.

# Flemington Farm - Understanding, Monitoring and Managing our Environmental Footprint

We are a family operation, farming in Flemington (1030 Fords Road), Mid Canterbury. We have some unique opportunities and challenges to monitor our environment. Our farm has tile drains essential in the autumn and spring. We have community drains. Our irrigation is from 60+ m deep wells.

We are 224 dairy platform, 750 peak cows. Stocking rate 3.34 cows. We aim for high per cow production (500+ kgMS/cow) on a grass-based farm system with a pinch of grain for the summer, and fodder beet to close the season.



## Nitrogen Loss With overseer

Baseline 2009-14	28
2019/20	25
2020/21	18

Our target for 2035 is 20. While we are fortunate to have heavy soils which leach less nitrogen compared to light Lismores, we have worked hard and made a concerted effort to drop our overseer nitrogen leaching by 36%. We changed fertiliser program and established and grazed plantain. Fodder beet (low protein) used for shoulder season. We have dropped our milk production and have not been able to maintain our profitability to achieve this drop in Overseer Nitrogen leaching.

In the long term – with management practices the science and Overseer highlights we have done the right thing and will drop our environmental footprint. We trust overseer and have faith in the science. However, the short term the results and the monitoring are raising some concerns.



## Effluent Monitoring and Management

- Run weeping wall system.
- Store effluent in pond, can store all winter, flush as quick as can during the season.
- Green Water washes the yards. E.g., very concentrated effluent.
- Weeping wall effluent have noted twice the concentration of nitrogen compared to peers with a two-pond system.

### Solids:

Test the solids before they go on. Hills laboratory. Send a peanut butter jar in the courier. Costs \$78 / test last year.

54 Tonne wet / Ha. Apply once per year. Spread the solids across 6.5 – 7 Ha (next years fodder beet). Do in the spring pre fodder beet.

Nitrogen	34 kg/Ha
Phosphate	4.5 kg/Ha
Potash	10.0 kg/Ha

### Liquids:

- Direct injection into pivot.
- Runs 10 % solution. E.g., 90 parts irrigation + 10 parts effluent
- Did a flow meter test on the pivot and a flow meter on the effluent.
- Irrigator provider can do the flow tests.
- Completed a test on 2 pivot irrigators.
- Did the same time as the back flow preventor test – was cost effective to do.

1 mm of liquid is applied with 10 mm of irrigation. Based on effluent tests:

Nitrogen	6 kg/Ha
Phosphate	0.5 kg/Ha
Potash	7 kg/Ha



Where effluent tested 7 times in the past 10 years. Found the tests in weeping wall had a bit of range. Noted the two pond systems of our peers had more range – not sure why! Testing at Hill labs / Ravensdown.

Recording to date has been manual on paper, recorded in farmIQ. Aiming to spread across the farm.

To do this:

1. Confirm your flow rates + application rates of effluent.
2. Test your effluent.

## Tile Monitoring

Flemington Farm had the ability to test a tile drain that drained a fodder beet paddock

Fodder beet, grazed April/May. Planted in grass in June.

June 2020	6.5	(Very dry autumn no great rainfall).
July 2020	6.7	
May 21	9.2	(after heavy rain event – in pasture).
April 22	7.98	

Highlights that it was a rainfall event that created the leaching. Please note – you cannot control the rainfall.



## Stream Monitoring & Riparian Planting Impact

Water drain starts on our property but will include drainage from up country. Planting carex secta between the paddock and the drain. Planted 4 years ago. Well established, 1 meter high. Have been nitrate + periphyton + temperature + phosphate (tested once, not there). Have tested the drain monthly, as part of MHV (Mayfield Hinds Valletta Irrigation, in conjunction with Hinds Water Enhancement trust) project involving 150 sites. Were testing personally was doing four times a year. Early days for a trend, but the results look promising, we are noting a slight drop across the 100 m section planted.

## Well Monitoring

Wells are 64 and 68 meters deep. Approx. 3 km apart. Both are irrigation well, and can feed the cowshed. Both wells in the same aquifer.

Pottle test being carried out 4 times per year. For past year every month as part of MHV/HHWet project. Have measured from 2011 to 2022.

Lessons learnt so far:

1. The wells vary. Can be up to 2 ppm difference between the wells at the extreme.

2. Levels		Well #1	Well#2
a.	2011 June	3.8	4.35
b.	2021 March	5.4	7.1
c.	2021 May	6.45	7.94
d.	2022 Jan	6.33	7.82
e.	2022 Mar	6.33	7.46
f.	2022 Apr	6.82	8.92

Average

Conclusions from water monitoring. Rainfall events of May 2021 and heavier rainfall mid Canterbury experienced December 2021 bumped up the nitrogen levels in the wells. The experts tell us that these increases will be with us for many years to come. Deep water 70 years for the transition across the Hinds plain aquifer. Shallow water 12 years.

Current plan change II requires 6.9 ppm by 2025. A concern when the trend in our wells is going up despite the management steps we have taken.

## Soil Testing

Soil test 25 % of the paddocks every year, scattered through the farm. Increasing to of the 50% farm. Have been working 10 years to get sulphur levels up. (Fortified sulphur Fertiliser). Need to have monitoring soil tests.

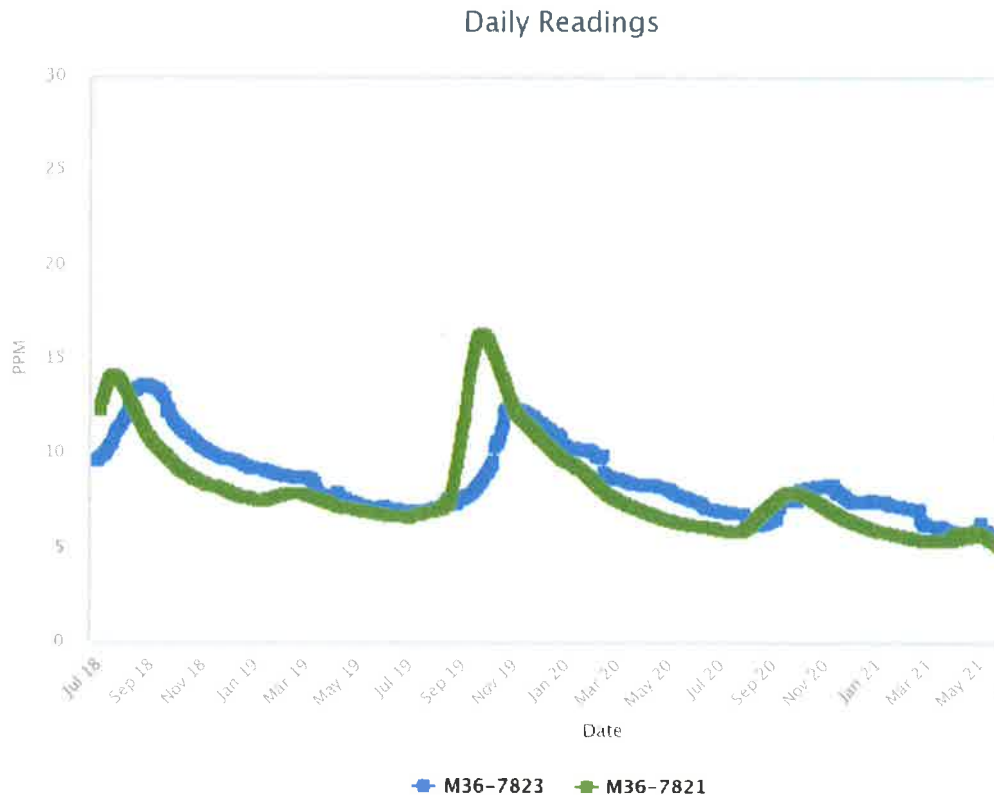
## Herbage Test

Have done herbage testing to see the impact of lower nitrogen on feed parameters and doing dissections of pastures. Seasonal variation is having a big impact on clover performance. Cool damp this season helped the clover to perform this season – watch this space.



## Water Monitoring – LUDF

Hydrometrics – Data. Monitors.



Green Well – 7821 – top of farm

Big Green Well – 7821 – bottom of farm

LUDF has been monitoring nitrate levels using sensor equipment provided by Hydrometrics. These sensors can be installed in the wells, or in the plumbing at the top of the wells. As shown, the water quality in these wells (25-30 m) is reasonable most of the year. But spikes in Nitrates do occur after rainfall / leaching events. A similar trend noted on Flemington farm. Note in the very dry autumn of 2020 there was negligible leaching, the very wet autumn of 2022 had a big spike in leaching of 20+. From the data and graphs when analysed, it appears that LUDF only has a minimal effect in increasing N concentration as the water flows across the farm. Bear in mind, this will be accumulative as the water flows under the plains.



# Allflex Livestock Intelligence and Monitoring



Photo courtesy of Terry Swney

Allflex Monitoring solutions provide you with peace of mind and unsurpassed support. There are three main reasons clients look to go down the path of monitoring.



## Heat detection

Allflex monitoring utilises information about specific cows' activity and rumination for unmatched heat detection. With drafting integration, this means that the animals who are ready to be AI'd are in the pen at the end of milking.

There are several components that make our Cows Ready for AI report an excellent tool:

1. Breeding window to give accurate timing for insemination based on that specific cows' behaviour
2. All the relevant information about that animal is in one place, alerting you to possible conception issues in real time
3. System uses +25 years of research and development to give a confidence level that each animal is genuinely on heat, and which gives the best indication of opportunity to conceive,
  - a. Rumination drop is an important indicator of heat behaviour, and allows for accurate detection of silent heats which can be missed without it
  - b. Heat-specific behaviours are individually monitored and allow animals to be ranked, in conjunction with breeding window for opportunity to conceive

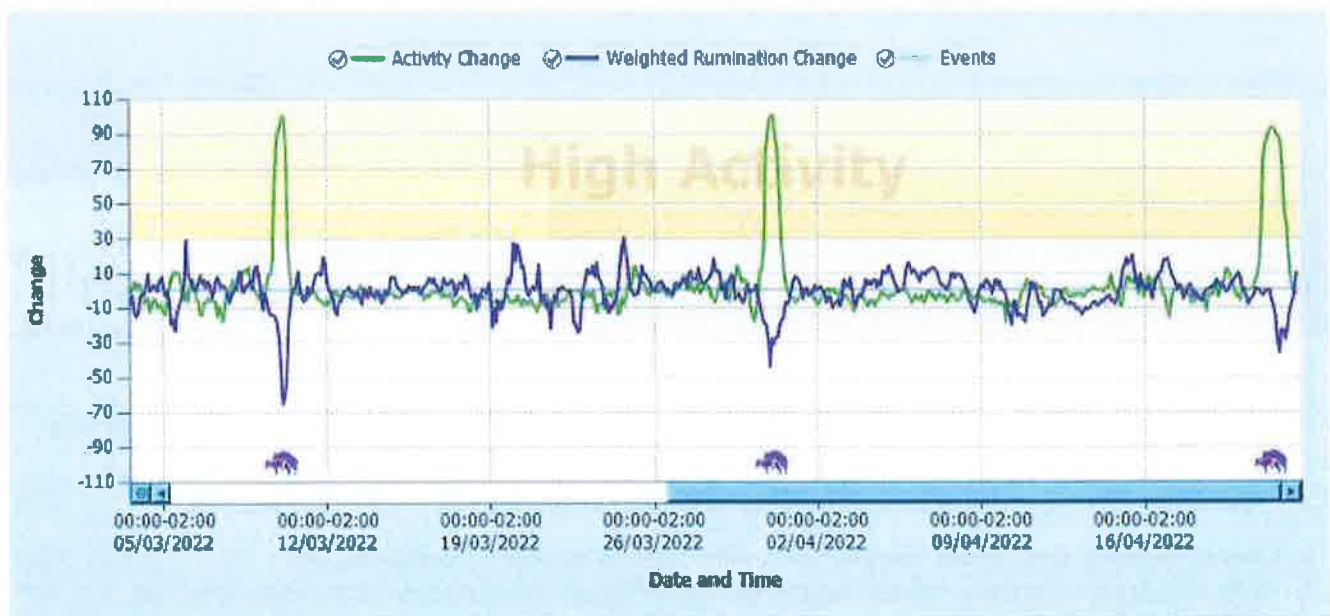
Cow Number	Lactation Number	Lactation Status	Days in Lactation	Number of Breeding	Days from Last Cycle	Days from Last Breeding	Breeding Window	Rumination Peak	Heat Index
1. 138	1	Open	216	2	24	111	AS	26	64
2. 375	5	Open	246	3	1	131		16	64
3. 389	1	Open	211	2		126		29	64
4. 591	8	Open	194	3		115		88	64

Utilising the reproduction information means there is no requirement for visual aids or a staff member to spend weeks on end selecting cows; high value semen can be targeted to animals who have the strongest cycles and are in the optimum breeding window; and pre-mating heat detection is accurate, automatically recorded, up-to-date, and ready to use for synchrony or non-cycler programs.

The system also helps you get a head start on your scanning by giving an indication of the cows "Pregnancy Probability", and also providing you with a list of animals who have been confirmed as pregnant but are displaying heat behaviour. This increases your efficiency by allowing you to re-check these girls before pumping long WHP dry-off products into them and feeding them expensive winter feeds. Furthermore, it will give you a list of animals who are confirmed as empty, but who are still anoestrous, allowing selection of Carry Over animals to be more effective.

### Things to keep in mind:

The Heat Detection is excellent but does not guarantee 100% of your animals will get in calf. It is important to remember that with any technology, the best it can do on a heat detection front, is tell you who is on heat and when to inseminate them. If the semen is no good or in the wrong place; if you have issues with non-cycling animals which you do not rectify; if there are underlying conception issues such as BVD or mineral issues, technology will not correct these issues for you. It will simply remove heat detection as a mitigating factor for not reaching your Repro KPIs. The best way you can impact on your Repro results, is to use rumination information to detect health issues and improve post-calving transition, to ensure your animal has the best chance of cycling quickly post calving, and conceiving to the first service.



### Results

Most significant impacts tend to be on submission rates, 3-week in calf rates, and conception rates. For example, last year in South Canterbury and North Otago, for first time users (with some caveats), here is an example from last year of average results:

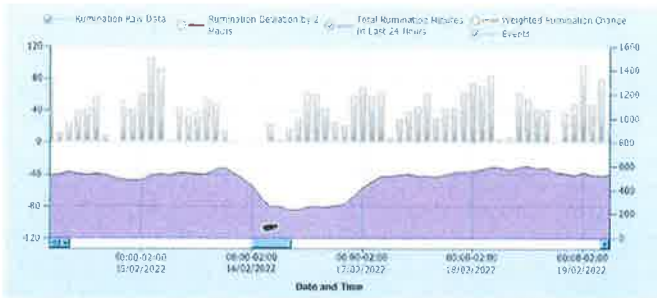
- +4.1% in CR (9/2)
- +5.42 3-week ICR (13/-2)
- +5% 6-week ICR (10/2)
- -1.2% MT
- -15.5 short returns

### Health

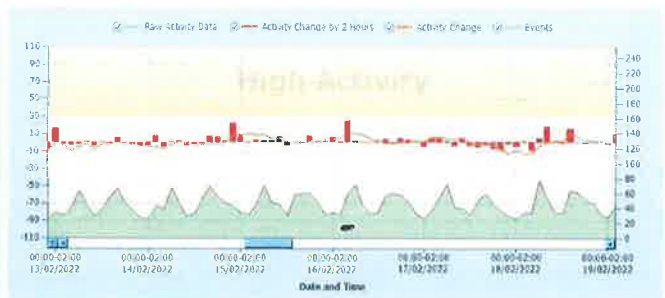
Allflex monitoring again utilises information about specific cows' activity, eating and rumination to determine animals who are critically unwell, or who are declining in health with sub-clinical issues. Traditionally clients have chosen to go down the path of monitoring for heat detection, and by the second season they realise that Health is the real winner.

### Distress notifications

These are notifications sent through to your phone to alert you to animals who have stopped ruminating and eating for an abnormal period of time. These can indicate serious time sensitive issues including prolonged calvings or dystocia, metabolic issues, a nasty mastitis that has caused systemic unwellness (i.e., E.coli or pastuerella), or other conditions that cause an animal to decline in health rapidly. These issues often are detected with ruminating and corrected prior to deviation in activity (depending on the issue).



Rumination



Activity

### The Health Report

Easily the coolest report of the whole system. This system utilises each individual cows "normal", along with what the system expects from her based on where she is in her lactation cycle, to present you with a list of animals who should be checked and/or monitored.

This report has been externally verified by Cornell university in terms of how sensitive and specific it is at detecting certain health issues including **displaced abomasums, ketosis, metritis, gastrointestinal issues, and mastitis**. It also looked at how much earlier these animals were flagged, and we will discuss this report today.

Disorder	Cows detected Se, % (95% CI)	HI <86 to CD (d)
DA (n = 41)	98 (93-100)	-3 (-3.7 to -2.3; P<0.01)
Ketosis (n = 54)	91 (83-99)	-1.5 (-2.3 to -1.0; P<0.01)
Indig. (n = 9)	89 (68-100)	-0.5 (-1.5 to 0.5; P=0.28)
<b>All metabolic &amp; dig. (n = 104)</b>	<b>93 (89-98)</b>	<b>-2.1 (-2.5 to -1.6; P&lt;0.01)</b>

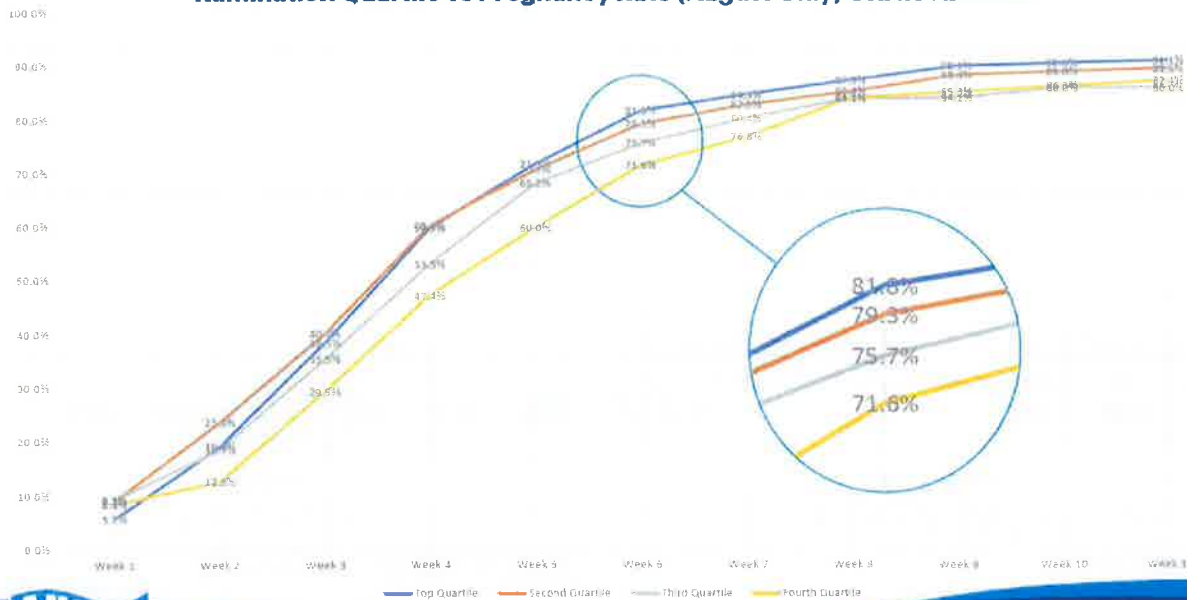


### Calving transition

This is where the main focus has been over the last 18 months. NZ research shows a significant impact on rumination recovery in fresh cows and the use of our custom-built portals, or by the ease of creating a custom report for an individual farm, this makes it easy to track in real time when management practices need tweaked or to monitor who is ready to be transitioned into the main milking herd.

We also have plenty of NZ data around response of rumination to metricuring, splitting herds by age, and response of rumination to OAD vs. TAD milking as fresh cows, along with rumination over the colostrum period compared to production.

## Rumination Quartile vs Pregnancy Rate (August Only) ORANGE FARM



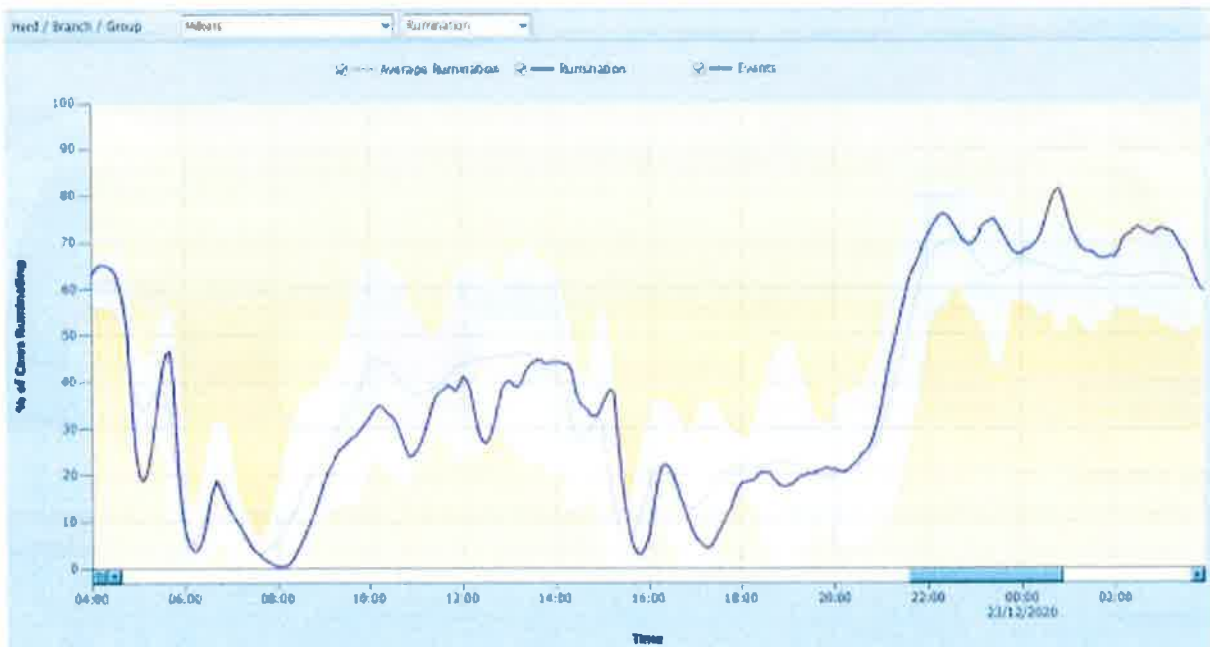
Veterinary Centre  
 Oamaru • Waimate • Palmerston • Glenavy • Oamarua • Kurow • Ranfurly



## Nutrition and Group Monitoring

A third significant opportunity monitoring presents is the ability to help manage nutrition and operational efficiency at a group (and individual). This helps us understand that what and how we feed our animals can have a significant impact on them and can help justify or improve operational changes and increase feed efficiency. The very easy to follow graphs tell you if someone has had a wee sleep in while you were away, or if there is an issue in real time with increased activity at the herd level, or even a drop in rumination at a herd level you can receive an alert to your phone.

We can also monitor heat stress, which as we all know results in production loss, reproduction issues and welfare concerns.





## Our support model

We invest back into our clients by providing aftersales support to both the farmers, and rural professionals who would like to learn about the system. We do this in several ways:

**Aftersales support:** Full personalised training by dedicated and skilled training team involving on farm one on one sessions, custom built NZ user manuals and online training options. We also have an NZ based technical support team available from 4am every day of the year, to help with any technical issue or urgent questions regarding the information coming out of the system. We also have a dedicated technical vet for monitoring to provide support to your vet where required. Furthermore, we hold regular user only sessions where we provide you with updates, improvements, and further training by presenting you with any new research or information which has been collected.

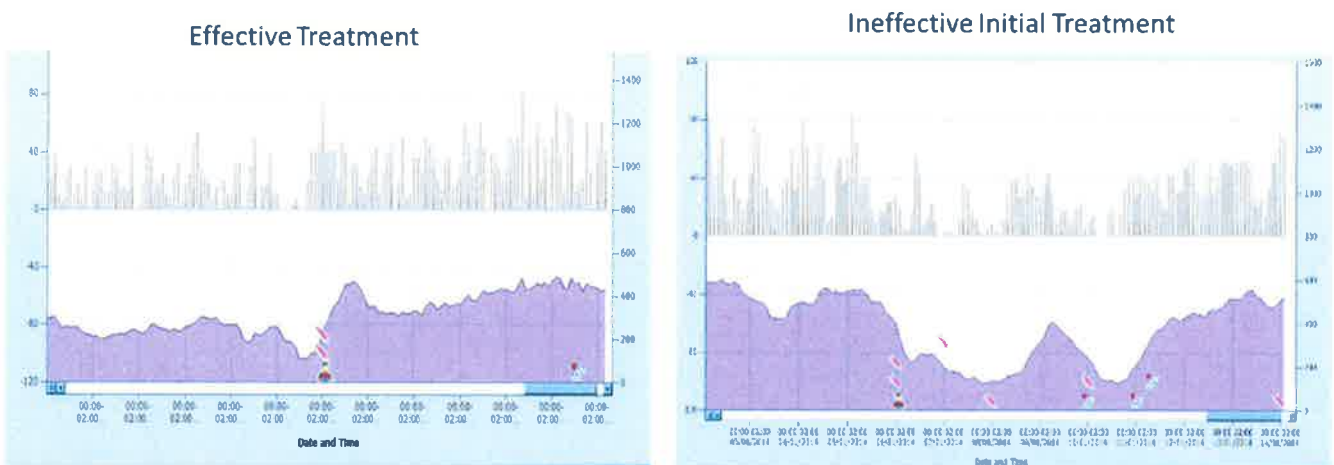
**The Elite Package:** Custom built for NZ farmers, there is a package which has been built for clients who have solid relationships with their vet and want to push the envelope to make the most of the information around critical points of the year.

**LearnAllflex:** Custom built NZ training and certification program for vets, nutritionists and farm consultants to maximise the outcome for our clients, by us supporting their trusted rural professionals. Created with the input of our training team and supported by our Technical Vet.

**Multi-farm dashboard:** Coming new this season is the ability to monitor key KPIs across multiple sheds. Helpful for vets, farm consultants or owners of more than one property who want to track progress across multiple sheds in one go.

## Costs and ROI

Dependant on herd size, coverage and level of information. Trevor Green, sales specialist to discuss.



## Reading if you're into it:

[www.vet111.co.nz/mooznews](http://www.vet111.co.nz/mooznews) March 2022

Stangaferro ML, Wijma R, Caixeta LS, Al-Abri MA, Giordano JO. Use of rumination and activity monitoring for the identification of dairy cows with health disorders: Part I. Metabolic and digestive disorders. *J Dairy Sci.* 2016 Sep;99(9):7411-742

Stangaferro ML, Wijma R, Caixeta LS, Al-Abri MA, Giordano JO. Use of rumination and activity monitoring for the identification of dairy cows with health disorders: Part II. Mastitis. *J Dairy Sci.* 2016 Sep;99(9):7411-742

Stangaferro ML, Wijma R, Caixeta LS, Al-Abri MA, Giordano JO. Use of rumination and activity monitoring for the identification of dairy cows with health disorders: Part III. Metritis. *J Dairy Sci.* 2016 Sep;99(9):7422-7433

Kaufman EI, LeBlanc SJ, McBride BW, Duffield TF, DeVries TJ. Association of rumination time with subclinical ketosis in transition dairy cows. *J Dairy Sci.* 2016 Jul;99(7):5604-5618

Soriani N, Trevisi E, Calamari L. Relationships between rumination time, metabolic conditions, and health status in dairy cows during the transition period. *J Anim Sci.* 2012 Dec;90(12):4544-54. doi: 10.2527/jas.2012-5064. Erratum in: *J Anim Sci.* 2013 Mar;91(3):1522

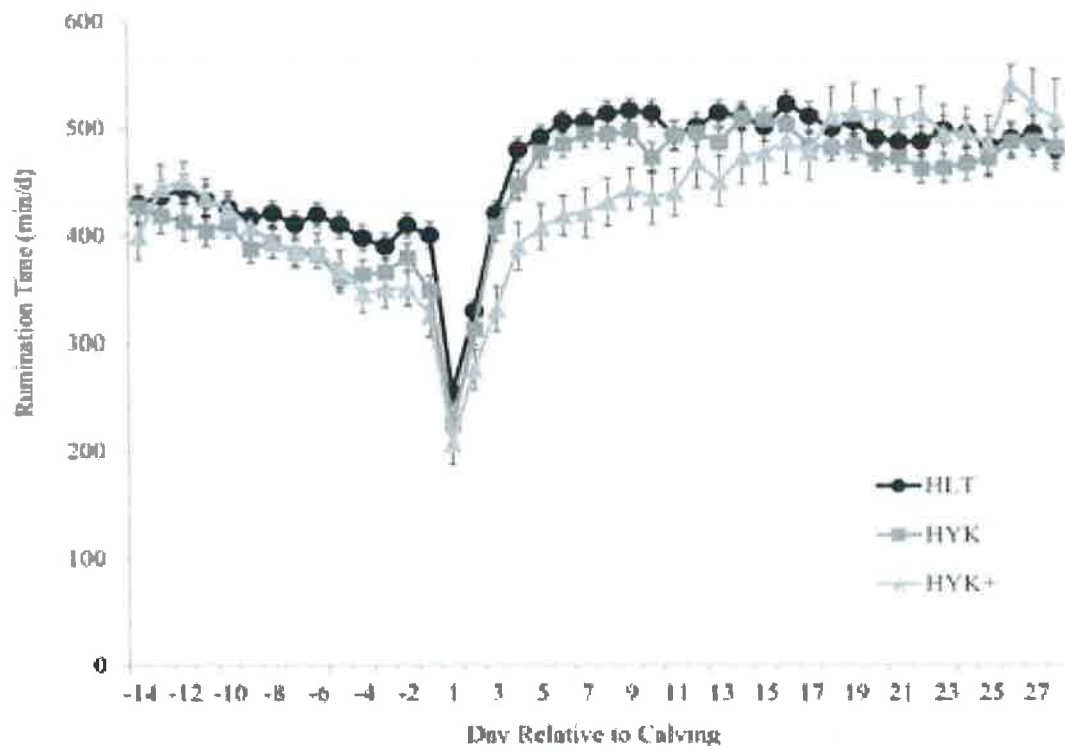


Figure 3. Daily ruminant time (mean  $\pm$  SE, min/d) over the transition period (-14 to 27 d) for healthy multiparous cows with no other recorded diseases (HLT;  $n = 87$ ), subclinically ketotic multiparous cows with no other health problems (HYK;  $n = 76$ ), and subclinically ketotic multiparous cows with other health problems (HYK+;  $n = 81$ ).

# HALTER

LUDF

## Pasture

Feed Utilisation milk income		\$59,229
Current Pasture eaten	15.2	kgDM/ha/yr
Increase in pasture utilisation	4%	
Extra pasture harvested	0.61	kgDM/ha/yr
Total additional pasture harvest	102	kgDM/ha/yr
Feed conversion efficiency	12	kgDM/kgMS
Increased kgMS	8,461	kgMS

Increased pasture quality milk income		\$12,727
Standard pasture quality	12	kgDM/ha/yr
Increase in pasture quality	0.1	kgDM/ha/yr
Total additional MJME	263,994	MJME
Total additional kgDM (standardised)	21,818	kgDM
Total additional kg MS	1,818	kgMS

## Time Savings

Total Labour Benefits		\$35,000
Time savings during season	Hr/week	
Shifting mobs	14	
Bringing cows to the shed	10.5	
Setting and removing breakfences summer	14	
Additional time savings break fencing during winter	21	
Additional time savings during calving	17.5	
Additional time savings during mating		
Time saved tail painting	7	
Time saved on heat detection	7	
Time saved drafting AB cows	4.2	
Additional time savings drafting AB cows	18.2	

## Summary

Annual Investment	\$105,984	/year
Investment	\$16	/month/cow
Installation (Indicative)	\$12,500	
<b>Total Benefits</b>	<b>\$230,166</b>	
Pasture	\$71,956	
Time & Labour	\$35,000	
Health Benefits	\$24,131	
Reproduction	\$68,448	
Kale Utilisation	\$19,140	
Other	11,491	
<b>NET BENEFITS</b>	<b>\$124,182</b>	

## Heat and health

Reproductive benefits		\$68,448
Actual 6-week in-calf rate (%)	68%	
Likely 6-week in-calf rate due to Halter	76%	
Actual not-in-calf rate (%)	21%	
Your desired not-in-calf rate	15%	

Lameness Benefits		\$12,696
Incidence of lameness last year (%)	25%	
Expected incidence of lameness with Halter (%)	20%	
Estimated cost of a lame cow	\$460	

Cow losses		\$11,435
Typical number of cow deaths	20	3.6% /head/yr
Cow saved through early detection	5	
Value of saving the cow	\$2,987	
	\$700	

## Kale Utilisation

Total Kale Utilisation Benefits		\$19,140
Area planted	40	ha
Average yield	14.5	kgDM/ha/yr
Increase in utilisation	10%	
Value	\$0.33	kgDM/ha

## Other

Total Other Benefits		11,491
Fuel Savings	\$5,000	
Fencing Cost savings	\$2,000	
Vehicle R&M savings	\$2,000	
Motorbike depreciation costs/yr	\$500	
Kamar savings	\$2,000	

## Environmental Benefits

% of farm in Plantain	+20%	area of farm in plantain
Nitrogen Leaching (overseer modelling)	-9	kgN/ha/yr
Reduction in GHG emissions(4% decrease replacements)	0.15	kg CO2-e/kg MS

## Key Assumptions

Farm Size	167	
Cow numbers	552	
Milk Price	\$7.00	kgMS
kgMS/cow	502	
# fte (incl owner/mgr)	3.6	
Lactation length	280	
Marginal costs of extra cows	\$170	per cow





**Cow #303**

Ready for  
Insemination

**Cow #196**

Early Signs of  
Mastitis

**#1**

**Accuracy. No Less.**



#2

Monitor Your Herd 24/7

# What is CowManager?

CowManager is the most accurate cow monitoring system on the market.

CowManager provides a reliable pair of extra eyes in your herd, monitoring the fertility, health and nutrition of your cows 24/7. The technology is based on many years of experience and collaboration with dairy farmers and universities.

Practical research has proven that CowManager is the easiest, most reliable and versatile system on the market today. CowManager is a highly advanced technical solution that suits all of New Zealand's dairy systems and is your eyes on the farm when you are not even looking.

CowManager's leading advantage is in the data collected. Measuring three stages of activity; This combined with the data collected

from measuring rumination, eating and animal temperature means we have access to all the data we need to easily pinpoint areas of concern.

CowManager developed and holds a patent on collecting ear temperature. This is vital information and with it CowManager's algorithms have more data to evaluate, making CowManager the most accurate system on the market today.

**Accuracy. No Less.**



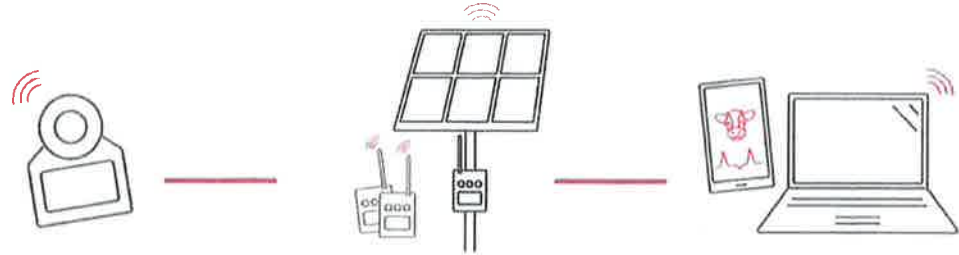
CowManager is the only system that measures ear temperature



# #3

## How Does CowManager Work?

CowManager Collects Data 24/7



The patented ear sensor technology relays the collected information to a series of routers placed around your farm, giving you 24/7 reliable data at your finger tips. CowManager is cloud based, which allows you to access your data from wherever you are.

You can install the CowManager application on computers and multiple phones. You can even grant your staff or other parties, such as your vet, access to monitoring treated animals.

### CowManager is Modular

CowManager is a modular system. It allows you to only work with the modules that are beneficial to your farm. Most farmers work with the full package, as this gives them all insights they need on cows' performance to make quick, data-driven decisions on the health, reproduction and nutrition of their herd. With the unique Pay as You Go construction you only pay the software fee for the sensors linked to cows\*. So, when your cow numbers decrease



throughout the season, your software fee automatically decreases as well.

\* Only available with monthly subscription, minimum of 2 modules activated. Applicable to a minimum of 80% of the cows linked to sensors.



#4



Your alerts are available on your smart phone and computer.

## Each Module has its own set of Alerts and In-Depth Graphs.

While alerts notify you in a timely manner when issues arise, the graphs behind support your decision making with in depth insights. This combinations allows you to identify cows of interest and the status of those cows.

**The Health Module** alerts you to diseases such as mastitis, milk fever, lameness. Allowing great insights through the data graphs you can begin to see patterns in your herd and accurately assess many conditions from this graph. This module also gives you the ability to monitor treatment progression during the recovery stages.

**The Fertility Module** is more than just the most accurate heat detection system on the market, it helps to identify peak heats, silent heats, pregnant cows, abortions and so much more. Combine this with Auto Drafting features and you will have the easiest mating season ever.

**The Nutrition Module** is a game changer for those looking to optimize herd-performance with insights in eating and rumination time. Its unique Transition Monitor identifies dry cows at risk weeks before calving. The ear temperature measurement combined with the behavior warns you for heat stress in an early stage. Early intervention and optimization in feed and management prevents losses and results in a healthier and more productive herd.

All graphs are displayed in a clear, easy to read format that enables you to effectively make precise decisions.

“It Leads to Less Wastage”





#5

Mike Marshall  
550 Cow Herd, Otago

## “We Increased Our 6 Week in Calf Rate by 15% up to 78%”

“Our MT rate went from 23% - 24% down to 13%”

“We put the increase in our 6 week in calf rate to mating cows on time and also picking up those silent heats that would have otherwise been missed.

Over calving the Health Module is invaluable, detecting metabolic diseases such as Ketosis before the cows go down.

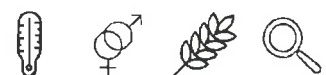
All our staff have the app on their phone so everybody can use it and everyone knows what is going on.

It saves time, it means you are able to spend time with your family without having that stress or worry of missing cows or the costly implications of having down cows.”

Watch Mike Marshall's Full CowManager Review



Excellent Service





Ask About Our Lifetime Warranty or  
Request A Free No Obligation Quote

## Local Representatives

### Jared Bekhuis - National Manager

p. 027 909 0114 | email: jared@senztag.co.nz

### Bede McNamara - Manawatu/Taranaki

p. 027 201 7714 | email: bede@senztag.co.nz

### Jared Bekhuis - Upper South Island/ West Coast Sales Manager

p. 027 909 0114 | email: jared@senztag.co.nz

### Claire Vaughan - Mid/South Canterbury Sales Manager

p. 027 404 8544 | email: claire@senztag.co.nz

### Alicia Keown - Southland/Otago Sales Manager

p. 027 220 2622 | email: alicia@senztag.co.nz

### Nick van Baar - Nation Wide Technical Support

p. 021 164 1570 | email: nick@senztag.co.nz

### Caron Mouat - Nation Wide Technical Support

p. 027 423 0082 | email: caron@senztag.co.nz



### Lifetime Warranty

Did you know CowManager can come with a Lifetime Warranty? Chat with our team to find out more.

### Integration

CowManager integrates with a wide range of agricultural systems. Check out the CowManager website for an updated list or contact us. [www.cowmanager.com](http://www.cowmanager.com)

### Realtime Data

CowManager provides incredibly accurate real time data direct to your smart device 24/7.

### Modular

CowManager is modular, you only pay for the modules as you use them i.e. you can simply turn fertility on just for your mating periods.

### 24/7 Support

We have a brilliant support team based right here in New Zealand. All team members have farming backgrounds themselves and understand your needs.

### Discrete Innovative Ear Sensor

The CowManager ear sensor is easy to install, discrete and low maintenance.



## David Fullerton

David Fullerton at Waipiri Holsteins has been using monitoring systems since the 80's. With a long history with cow collars and now 7 years with the CowManager ear tags, David is certain that collars are old technology and the CowManager ear tags are the way of the future.

**▶ Youtube** Scan QR Codes For Full Farmer Story



## Jason Laurence

Jason Laurence has had CowManager installed for over 15 months now and has noted a huge number of benefits that have positively impacted both their families, and their herds lives on farm.



Ask about our **lifetime warranty** or payment plans available

## Local Representatives

**Office: 07 280 5798**

### Jared Belhuis

National Manager  
p. **027 909 0114**  
jared@senztag.co.nz

### Nick van Baar

Northland/BOP Sales  
p. **021 164 1570**  
nick@senztag.co.nz

### Claire Vaughan

Mid/South Canterbury  
Sales Manager  
p. **027 404 8544**  
claire@senztag.co.nz

### Jono Lilburn

Upper North Island Sales Manager  
p. **027 239 3750**  
jono@senztag.co.nz

### Bede McNamara

Manawatu/Taranaki  
p. **027 201 7714**  
bede@senztag.co.nz

### Alicia Keown

Southland/Otago Sales Manager  
p. **027 220 2622**  
alicia@senztag.co.nz

## Technical Support and Training

**Office: 07 280 5798**

### Douwe Ykema

Nation Wide Technical Support  
p. **027 257 8216**  
douwe@senztag.co.nz

### Charlotte Dabell

Training Specialist  
p. **027 225 3633**  
charlotte@senztag.co.nz



Accuracy and Reliability



**EASY DAIRY**  
automation systems

## Automatic Drafting Made Easy

Easy Draft has been designed and refined over many years to be reliable, easy to use, gentle on animals and has seamless integration with CowManager.

# Easy Draft



**Accuracy. No Less.**



## The Future Is In The Ear

CowManager is a revolutionary ear sensor created to provide accurate information about your herd's fertility, health, nutrition and location 24/7.



Mike Marshall

**"It saves time, it means you are able to spend more time with your family."**

"We increased our 6 week in calf rate by 15% LP to 78%. Our MT rate went from 23% - 24% down to 13%". Over calving the health module is invaluable detecting metabolic diseases such as ketosis before the cows go down."



**More Info?**

**Download The CowManager Advantage Document**



**Or Call: 07 280 5798**