OWL FARM

Providing knowledge.

ST. PETER'S SCHOOL & LINCOLN UNIVERSITY
DEMONSTRATION DAIRY FARM

FARM FOCUS DAY

Thursday, 12 September 2024

Owl Farm Wagon Wheel KPIs

Calving review

Mating plan for 2024

Latest Farm Insights reports

Disclaimer:

While every effort has been made to ensure information provided in this handout was true and correct and the time of going to print, Owl Farm takes no responsibility for the use of data outside of the purpose to inform readers of the current situation at Owl Farm on the Focus Day.

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CONTENTS

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HEALTH AND SAFETY

Welcome to Owl Farm. We are a fully operational, commercial dairy farm with several potential hazards to both visitors and staff. Many of these hazards cannot be eliminated while also providing access to visitors, therefore all staff and visitors MUST watch for potential hazards and act with caution.

St Peter's School / Owl Farm Hazard Notifications

- Children are the responsibility of their parent or guardian
- Normal hazards associated with a dairy farm
- Vehicular traffic on farm roads and races
- Races may be slippery

ARE YOU TRAINED FOR WHAT YOU ARE ABOUT TO DO? IF NOT, STOP.

Emergency Contact Information

Hazard maps and emergency information can be found by scanning the above QR code. In the event of an emergency, ensure the scene is safe and raise the alarm to get Owl Farm staff and emergency services to assist.

Emergency Services

- **Fire, Police and Ambulance** **111**
  1716 Cambridge Road, follow Hanlin Road through the school to the farm

Farm Staff

• Jo Sheridan – Demonstration Manager	021 712 680
• Tony Alarca – Farm Manager	027 244 7817

Safety Equipment Location

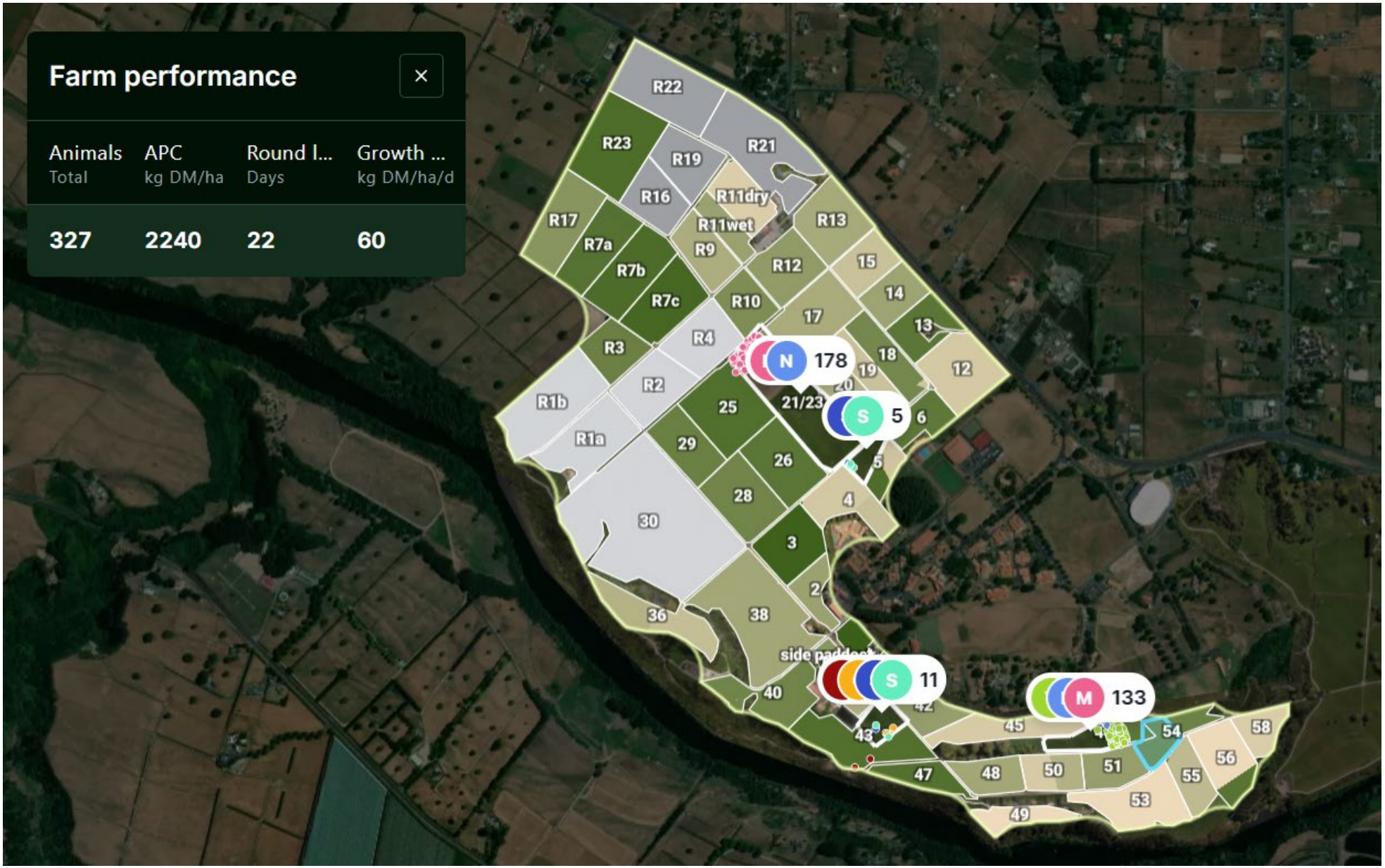
• First Aid Kits	Dairy Shed and Vehicles
• Fire Extinguishers	Dairy Shed and Tractor
• Defibrillator	St Peter's Main Office and Medical Centre

By entering Owl Farm and signing in at registration, you acknowledge your understanding of any potential hazards and agree to take personal responsibility and act in such a manner as to protect yourselves and others also on-farm.

OWL FARM STRATEGY

1. **Vision**
   a. **Dairy Farm**
      - Demonstrating excellence in farm performance to create a sustainable future.
   b. **Students**
      - To encourage more young people into the dairy industry.

2. **Strategic Objectives**
   a. **Dairy Farm**
      - Providing leadership to dairy farmers and the wider community by demonstrating progressive practices that can be achieved on farm.
      - Optimising profit through identifying the appropriate dairy production system for Owl Farm.
      - Achieving a sustainable environmental footprint based on industry good management practice.
      - To attract, train and retain quality employees.
   b. **Students**
      - To provide educational opportunities and exposure to the dairy industry which demonstrates career opportunities to students.


Farm performance
Animals
Total
APC
kg DM/ha
Round l...
Days
Growth ...
kg DM/ha/d
327
2240
22
60
R22
R23
R19
R21
R16
R11dry
R17
R11wet
R13
R7a
R9
R12
R7b
R7c
R10
R4
R3
R2
R1b
R1a
N 178
S 5
21/23
25
29
26
28
30
3
2
36
38
side paddock
S 11
40
M 133
43
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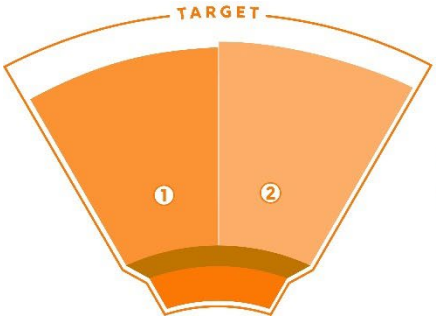
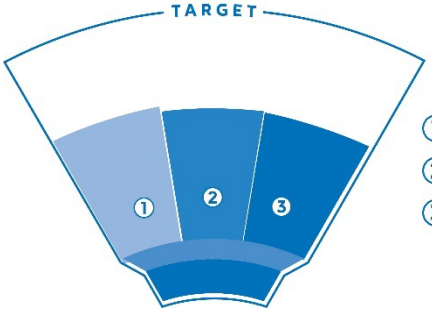
WAGON WHEEL KPIS 2023/24



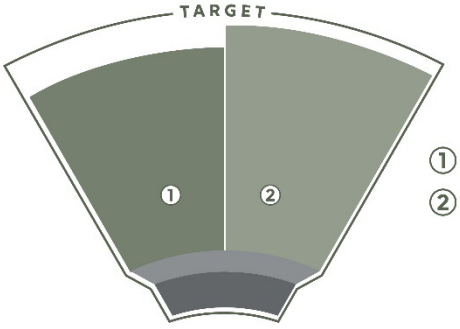
	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	P&C harvested/ha	15t DM/ha - measured via DairyBase	12.7	11.2	13.2	13.7	13.1	13.1
2	MS/ha to 31st Dec	850 kgMS/ha	729	766.5	808	810	816	819

	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	Healthy cows	15% or less involuntary culls	22%	22%	12%	19%	20%	-
2	Purposeful lives for calves	100% reared past 4 days on farm	54%	61%	70%	60%	39%	34%
3	Replacements reared	21% - at weaning	20%	19.4%	19.4%	22.9%	23.4%	23.1%
4	Healthy calves	100% adequate total protein	92%	83%	83%	80%	-	-

	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	Biological GHG/ha CO2 equiv	3 yr average trending down	7901	9633	10411	9945	9074	9192
2	GHG Emissions Intensity	3 yr average trending down	11.1	11.4	12.2	12.0		
3	Modelled N loss kg/ha/yr	3 yr average trending down	25	28	35	34	32	33



	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	Farm Working Expenses	$4.70/kgMS - via DairyBase	$6.73	$6.81	$6.30	$4.60	$4.96	$4.66
2	Op profit/ha (eff dairy)	> top 20% - via DairyBase	$2314	$2362 vs $4550	$3886 vs $6950	$3482 vs $4820	$2405 vs $4395	$2147 vs $3533
3	ROA	6% - via DairyBase		3.00%	5.50%	5.00%	3.40%	3.10%



	PRIMARY KPI	OWL FARM TARGET	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
1	Workplace 360	100%/100%/100%	100/87/76	100/68/53	100/79/63	100/79/63	-	-
2	Average hours worked/ week	45 hours/week/person	46.5	40.4	44.8	46.4	45	49

OWL FARM MULTI-YEAR SNAPSHOT

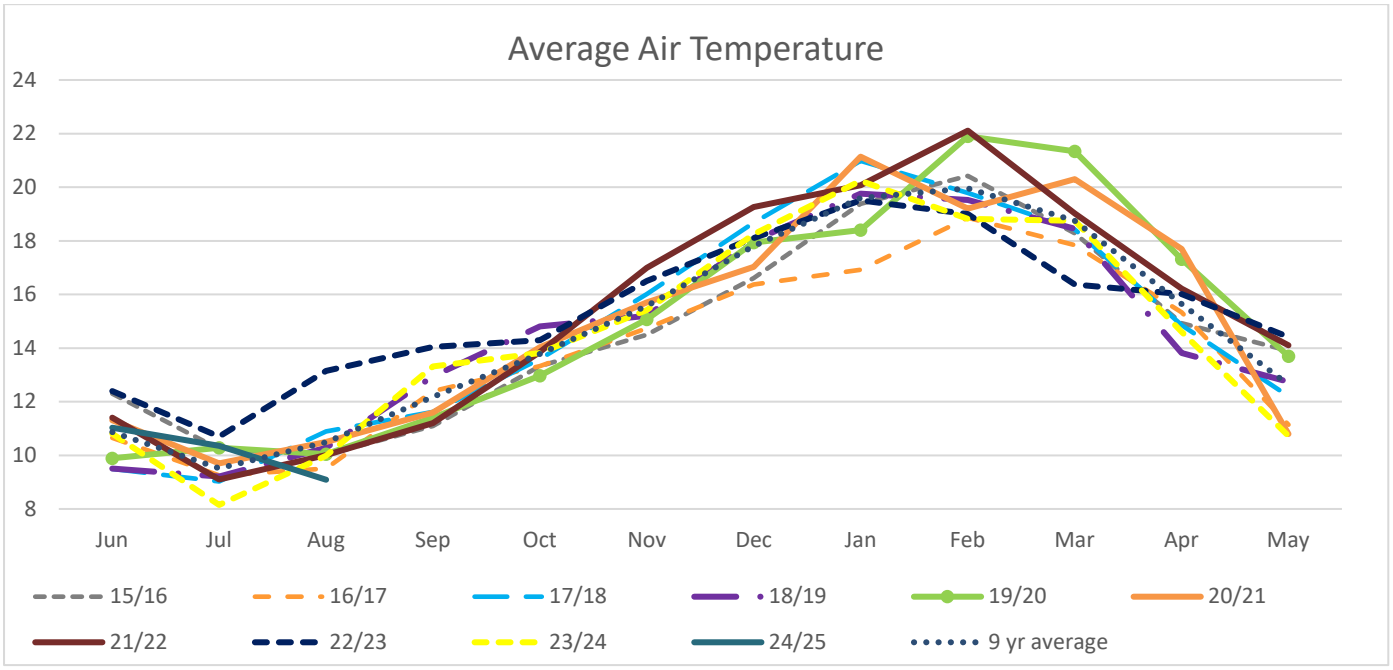
	Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Physical Info	Total farm area	164	164	164	160	160	150	150
	Effective area (ha)	148	147.3	147.5	144	144	140	140
	Location of calves	Off Farm	Off Farm	Off farm	Leased runoff	Dairy platform	Dairy platform	Dairy platform
	Leased run off (ha)	5	15	10	4.7	0	0	0
	Cows wintered	441	419	421	416	418	394	360
	Peak cows (1 Nov)	418	406	405	405	410	355	345
	Peak stocking rate cows/ha	2.82	2.76	2.75	2.81	2.84	2.5	2.5
Production	Total kg MS	168,169	169,359	167,185	178,125	164,163	154,394	143,022
	MS/cow	402	417	413	440	400	431	403
	MS/ha	1,136	1,150	1,133	1,237	1,142	1072	1055
	MS as % liveweight	86.5%	89.7%	86%	92%	83%	89%	83%
	Average SCC	146,000	172,000	162,000	144,000	121,000	151,385	156,784
Feed and Inputs	Pasture & Crop harvested t DM/ha (Farmax)	13.8	13.7	11.4	11.7	11.3	11.2	TBC
	Supplements imported t DM/ha	2.3	2.3	2.7	2.6	2.9	1.8	0.8
	Supplements imported t DM	339	337	400	368	398	250	122
	Silage harvested on farm t DM	169	238	143	115	94	80	141
	Crops grown on farm t DM	98	99	73	126	79	145	94
	Nitrogen fertiliser applied on pasture (kg/ha)	161kg	149kg	140kg	138kg	126kg	116kg	90kg
Financials	Gross farm revenue/kg MS (including stock/dividend)	$7.56	$6.86	$7.58	$7.94	$10.26	$9.65	$9.64
	Net milk sales/kg MS (Dairybase)	$6.39	$6.43	$7.11	$7.47	$9.36	$8.92	$8.85
	Stock sales/kg MS	$0.54	$0.43	$0.37	$0.52	$0.98	$0.84	$0.57
	FWE/kg MS	$4.28	$4.66	$4.96	$4.60	$6.30	$6.81	$6.73
	Operating Expenses/kg MS	$4.59	$4.97	$5.46	$5.10	$6.86	$7.45	$7.38
	Operating Profit/ha (Dairybase)	$3,096	$2,147	$2,405	$3,482	$3,886	$2,362	$2,314
Enviro	Estimated N loss kg/ha	35	35	32	34	35	28	25
	Estimated P loss kg/ha	0.8	0.9	0.8	1.0	1.0	1.0	0.9
	GHG loss/ha Overseer FM kg CO_2e/ha	11,801	11,728	11,304	11,623	12,350	11,096	9,104
	Biological GHG/ha (methane + nitrous oxide)	9,548	9,192	9,074	9,945	10,411	9,633	7,901
	Emissions Intensity kg CO_2e/kg MS	12	11.8	11.5	11.1	12.1	11.5	10.18
	N conversion efficiency	24%	25%	25%	27%	28%	31%	32%
Infrastructure	Cowshed	36 Rot	36 Rot	36 Rot	36 Rot	36 Rot	36 Rot	36 Rot
	Feed infrastructure	NIL	NIL	NIL	NIL	NIL	NIL	NIL
	Herd BW/PW	112/135	119/153	159/186	171/197	215/255	253/306	319/349
	Effluent storage	*New lined pond*	*3000m³*	*3000m³*	*3000m³*	*3000m³*	*3000m³*	*3000 m³*
	Amount of farm effluent is applied to	51 ha 34%	51 ha 34%	51 ha 34%	41 ha 28%	52 ha 36%	52 ha 37%	52 ha 37%

1.0 FARM PERFORMANCE

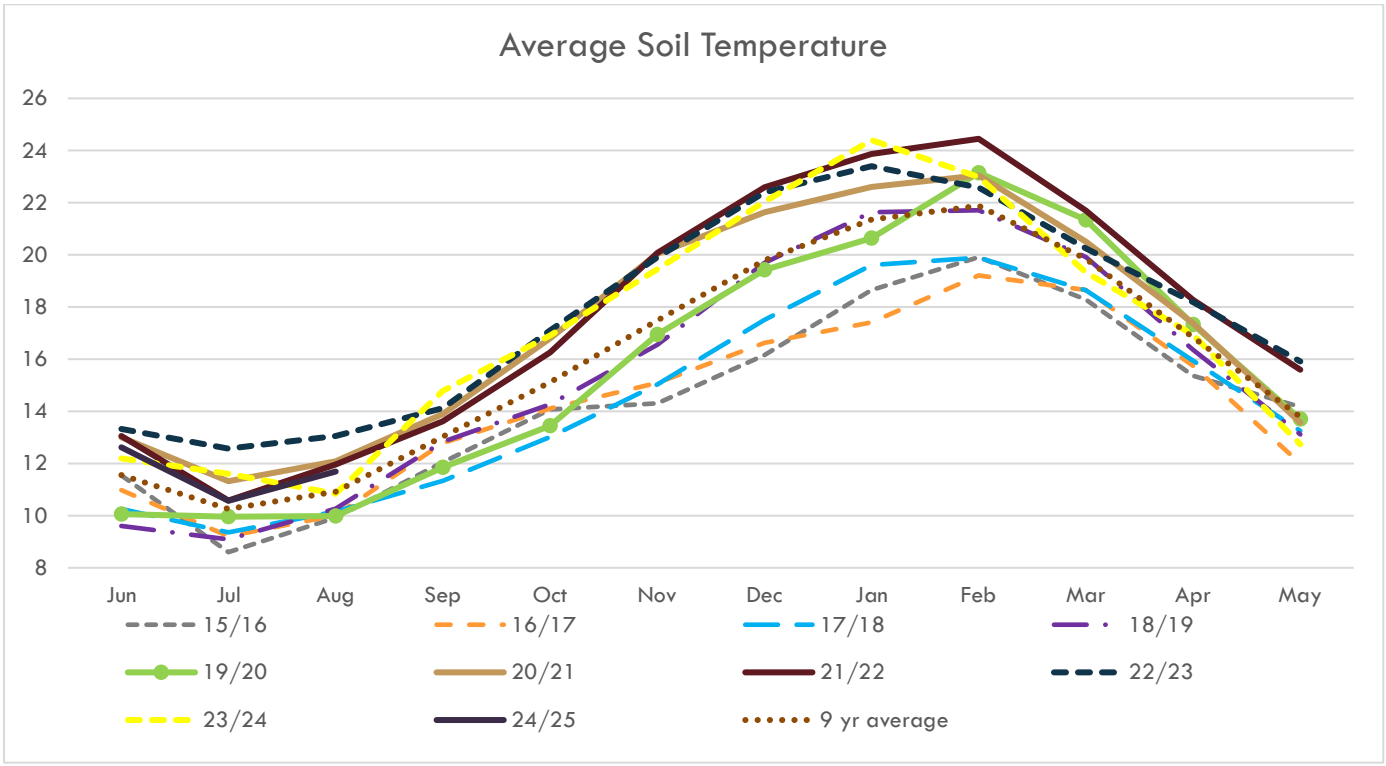
CLIMATE

Climate is recorded from one weather station on the farm, collecting rainfall, air temperature, humidity and wind data. We also have a 600mm soil probe that measures soil moisture and temperature at 100mm depths. Graphs show readings at 100mm depth over time.

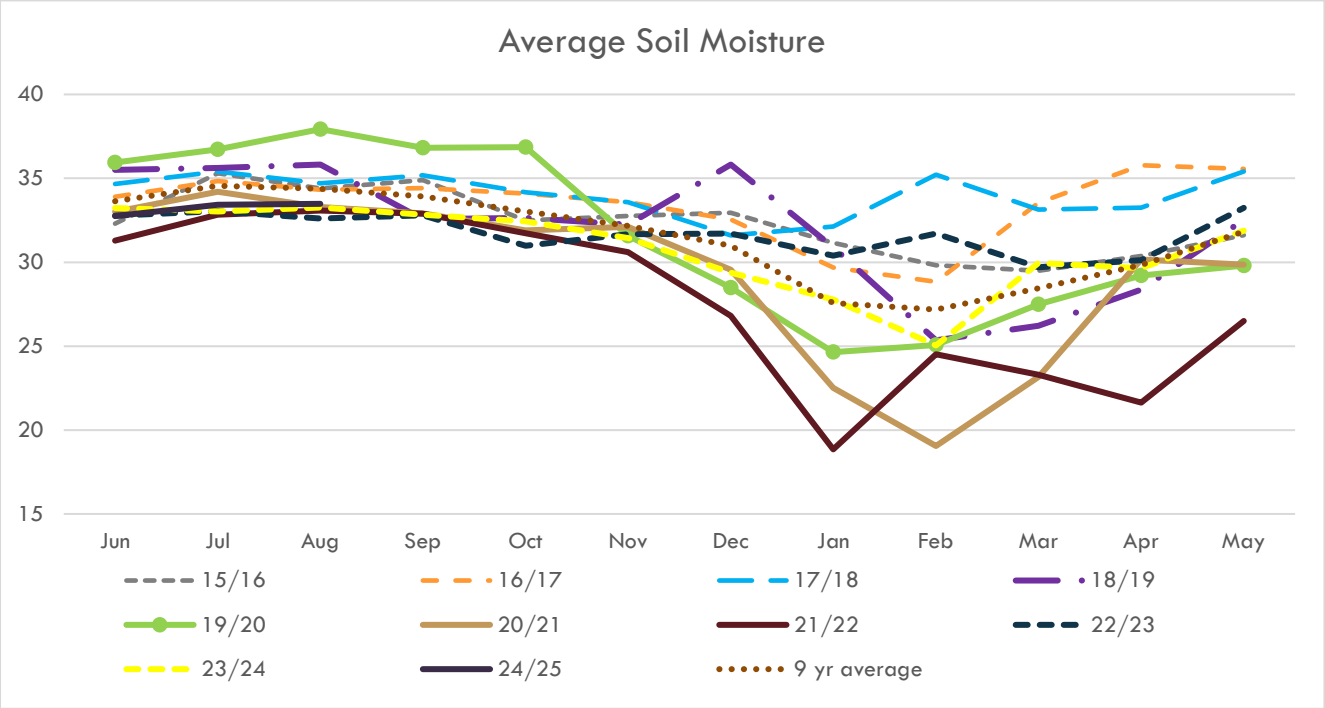
Graphic 1.1: Average air temperature over years



Graphic 1.2: Average soil temperature over years

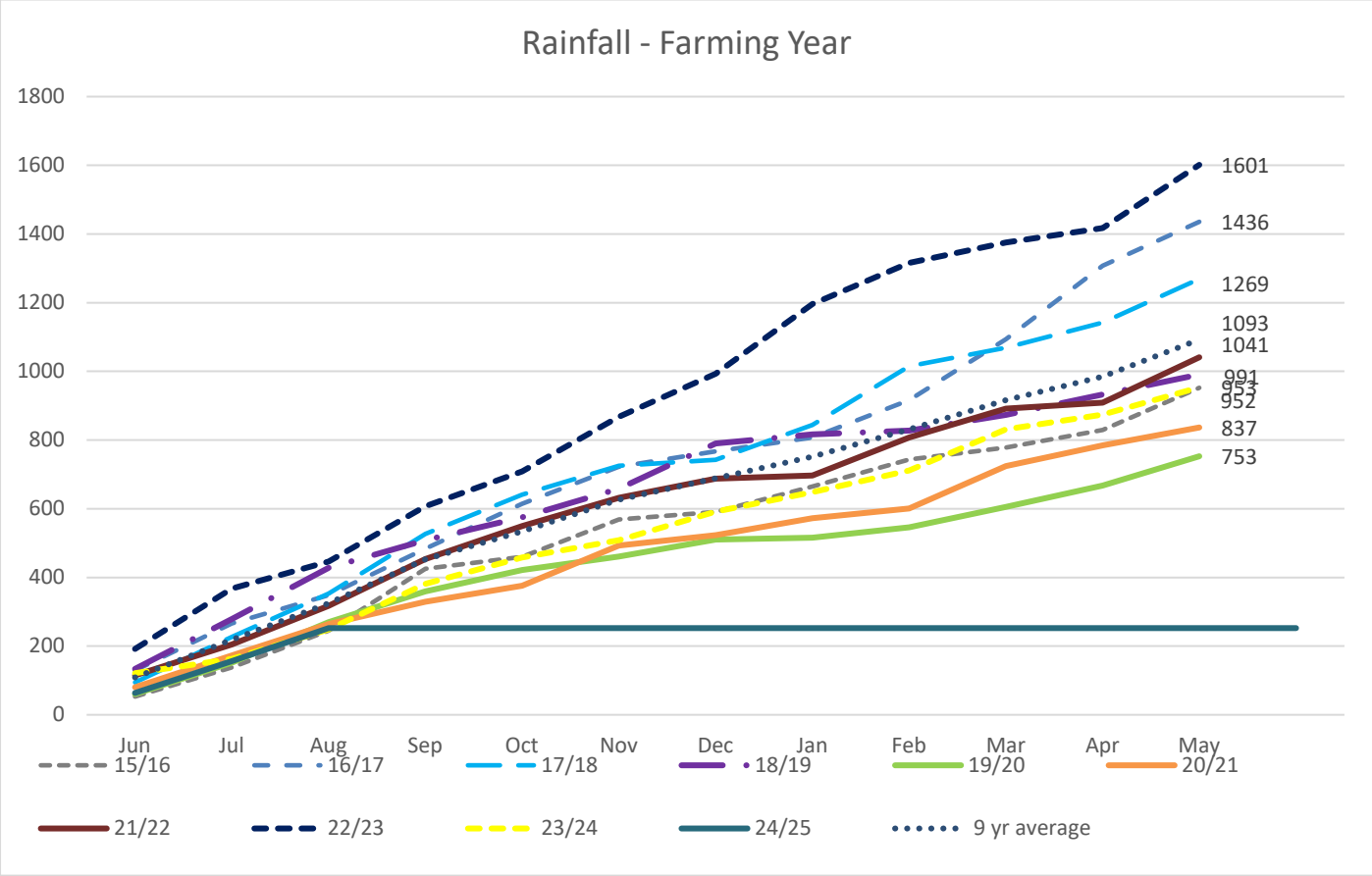


Graphic 1.3: Average soil moisture over years

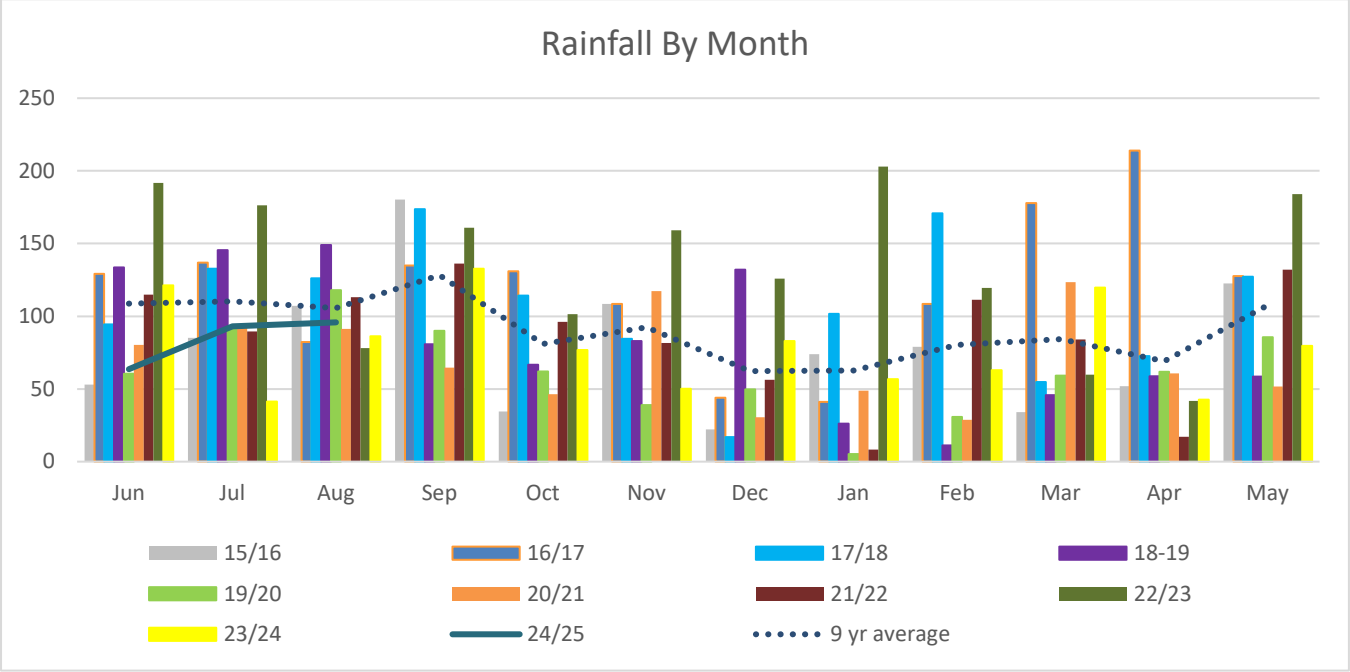


RAINFALL

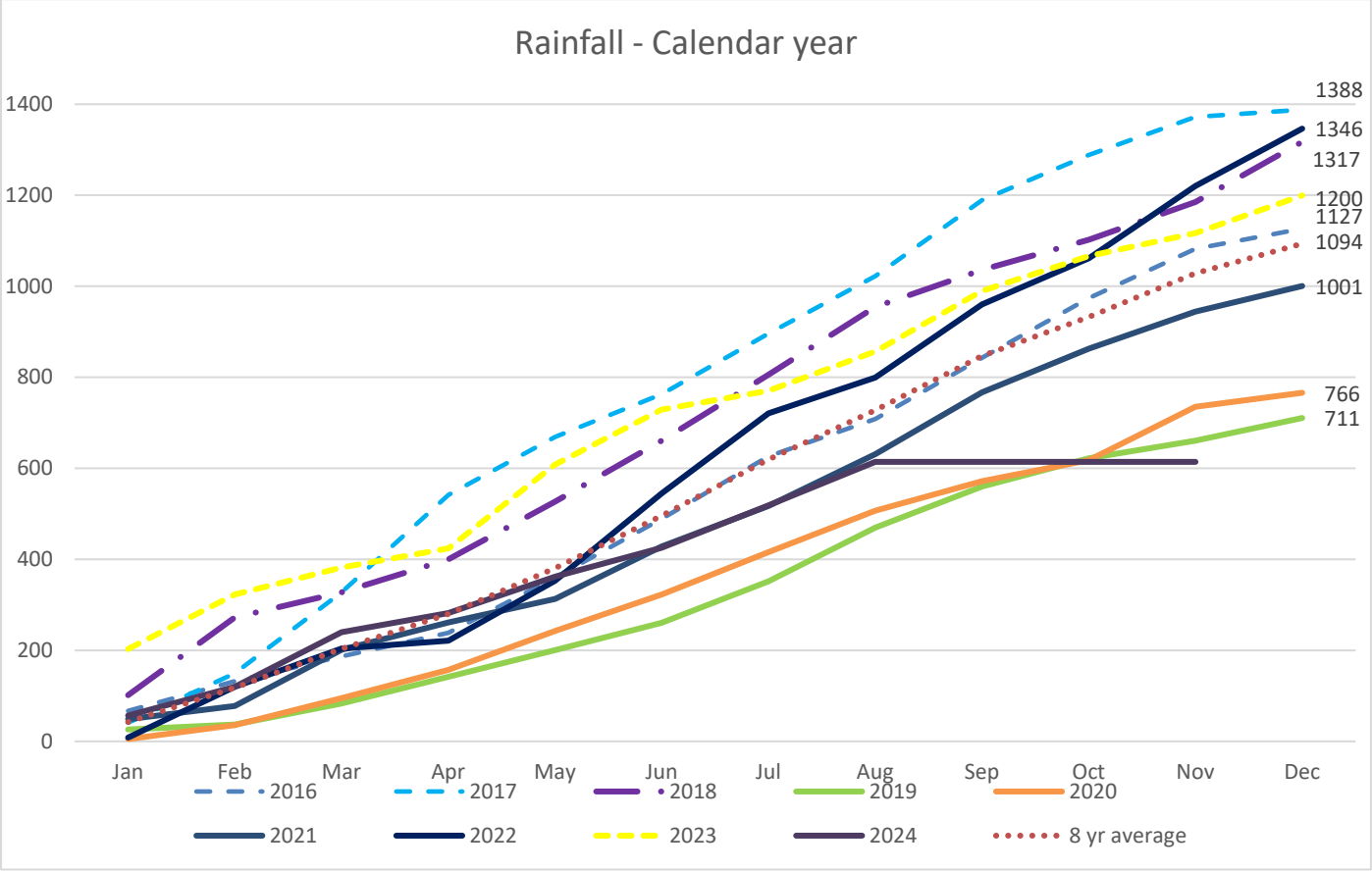
Graphic 1.4: Cumulative monthly rainfall over seasons



Graphic 1.5: Monthly rainfall over years

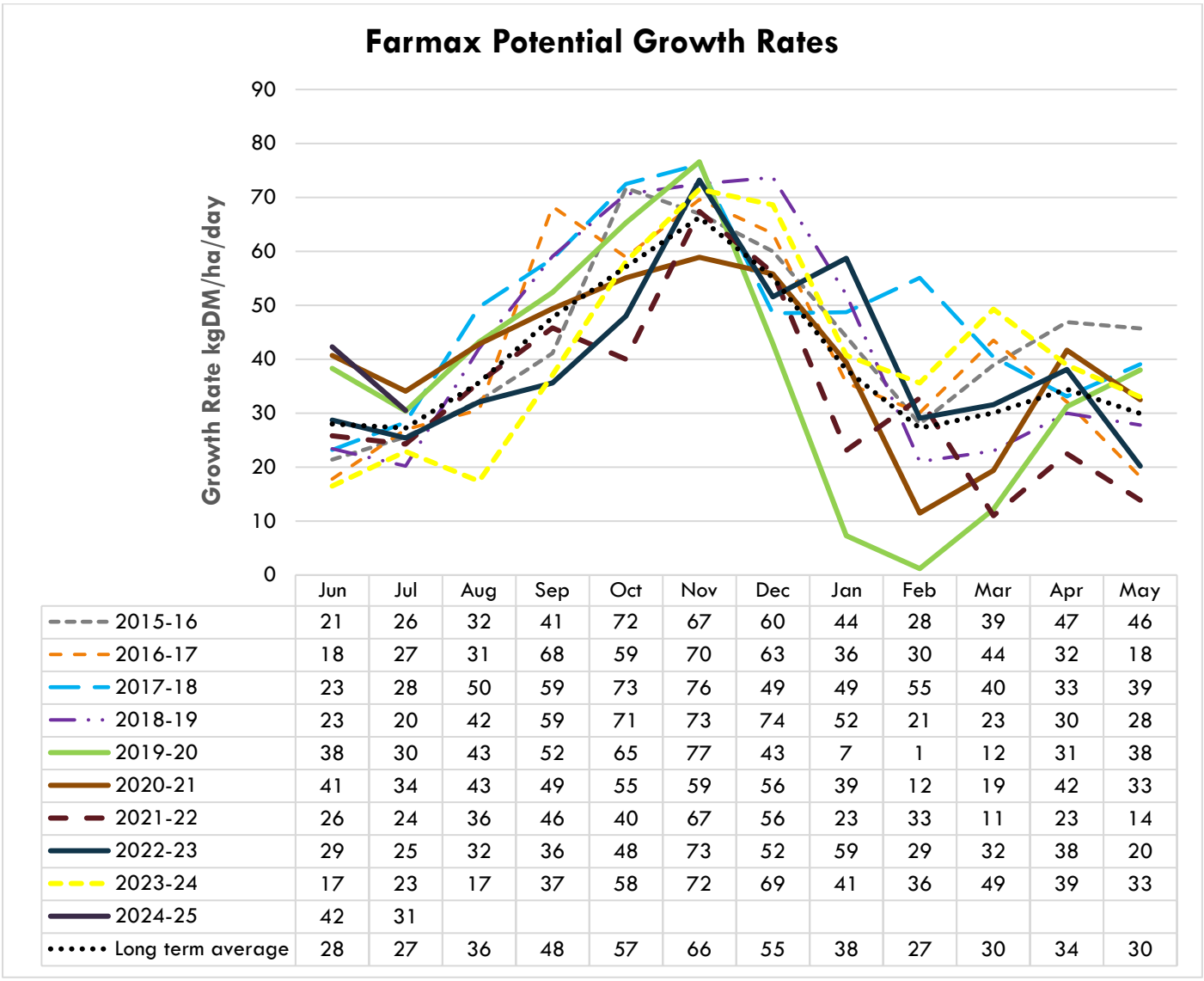


Graphic 1.6: Cumulative monthly rainfall over years



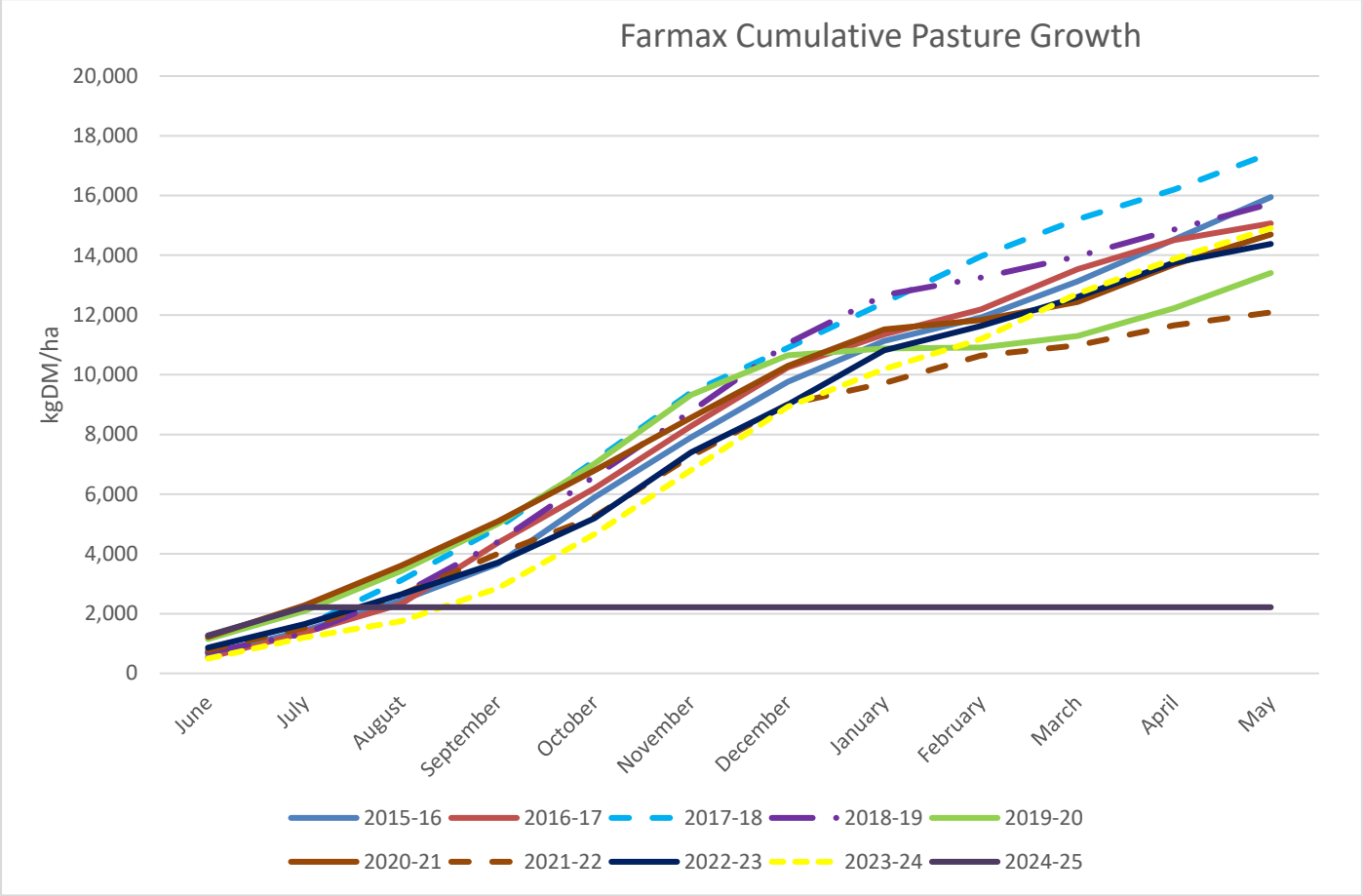
PASTURE GROWTH RATES

Graphic 1.7: Pasture Growth Rates from Farmax



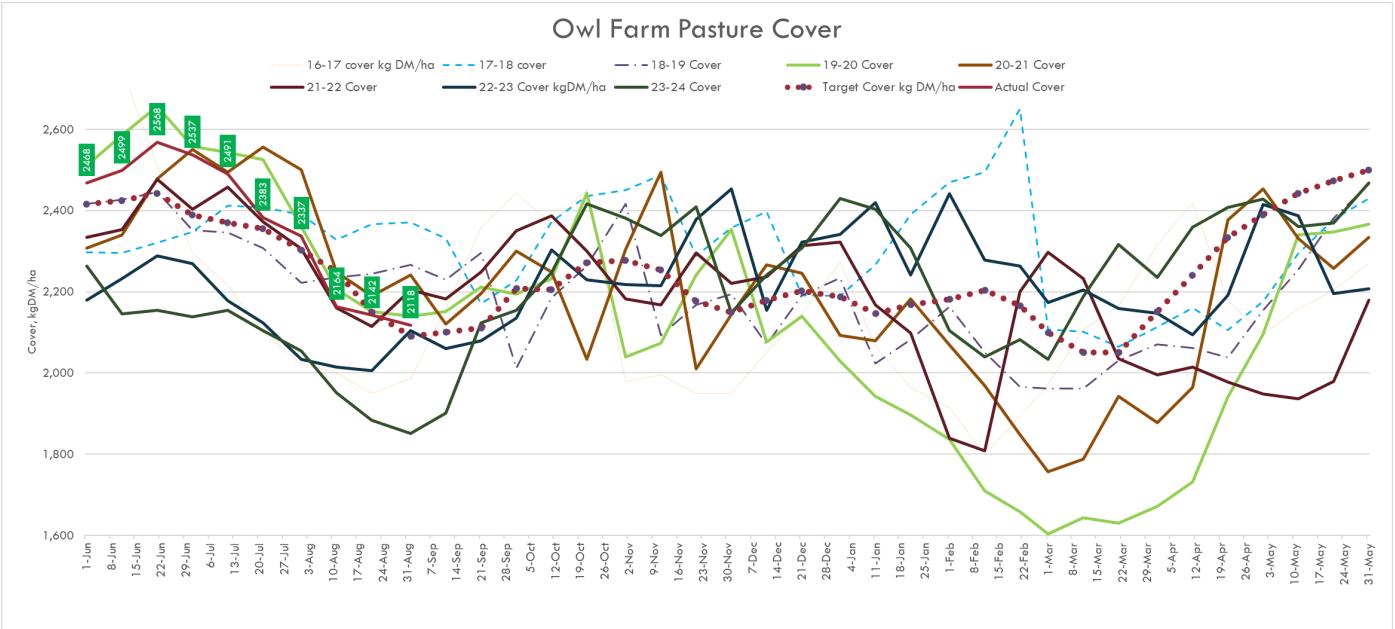
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2015-16	21	26	32	41	72	67	60	44	28	39	47	46
2016-17	18	27	31	68	59	70	63	36	30	44	32	18
2017-18	23	28	50	59	73	76	49	49	55	40	33	39
2018-19	23	20	42	59	71	73	74	52	21	23	30	28
2019-20	38	30	43	52	65	77	43	7	1	12	31	38
2020-21	41	34	43	49	55	59	56	39	12	19	42	33
2021-22	26	24	36	46	40	67	56	23	33	11	23	14
2022-23	29	25	32	36	48	73	52	59	29	32	38	20
2023-24	17	23	17	37	58	72	69	41	36	49	39	33
2024-25	42	31										
Long term average	28	27	36	48	57	66	55	38	27	30	34	30

Graphic 1.8: Cumulative Pasture Growth Rates from Farmax

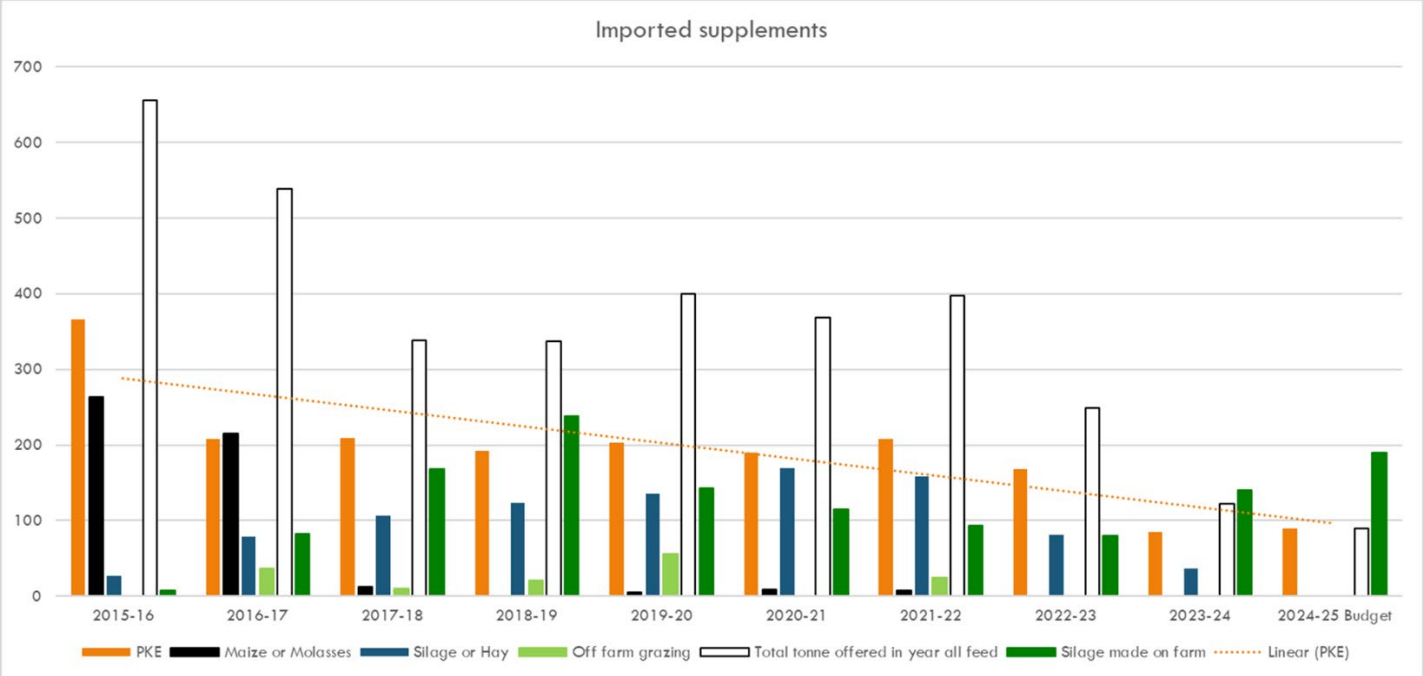


PASTURES & SUPPLEMENTS

Graphic 1.9: Pasture Cover from weekly farm walk

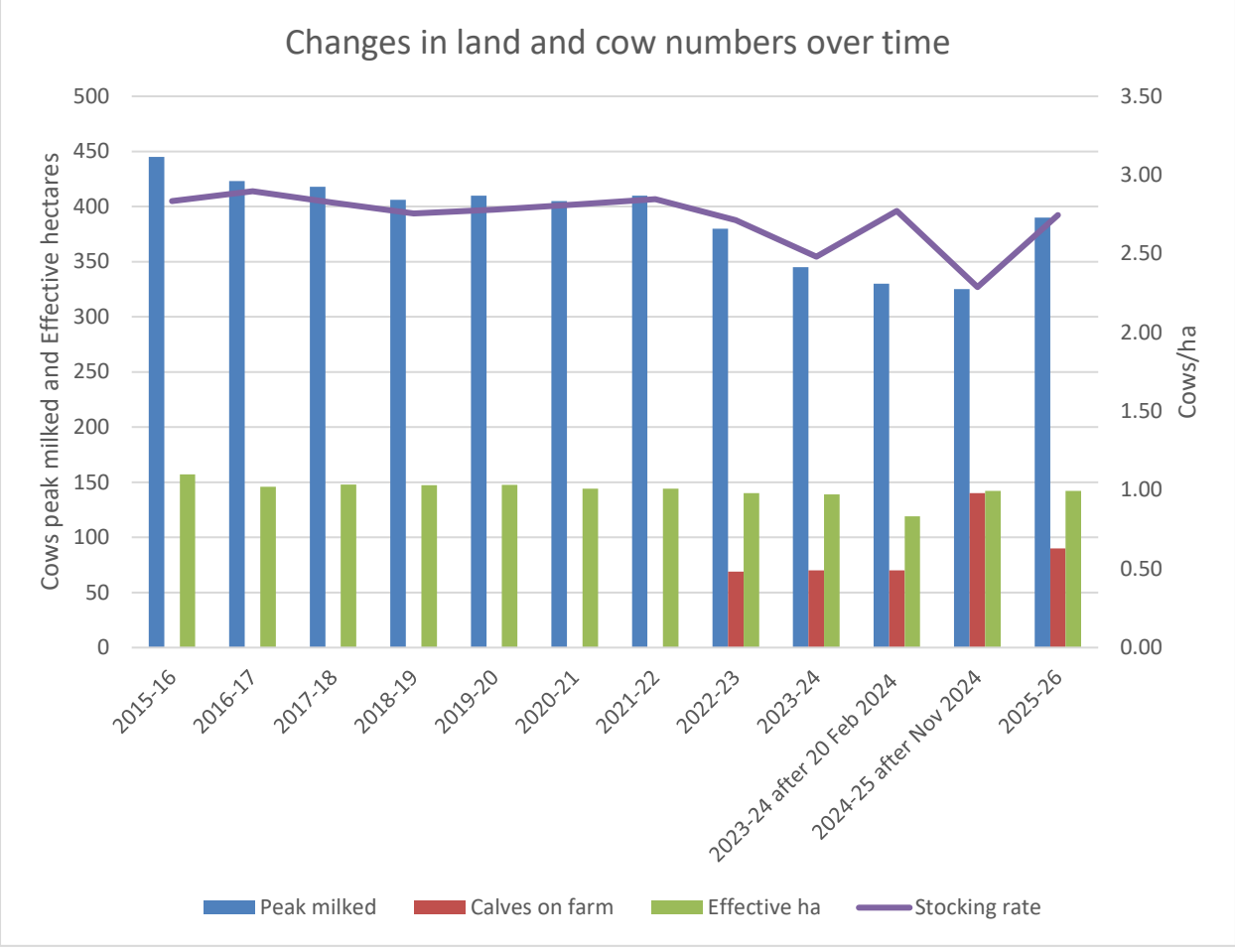


Graphic 1.10: Supplements offered/made; comparison between years

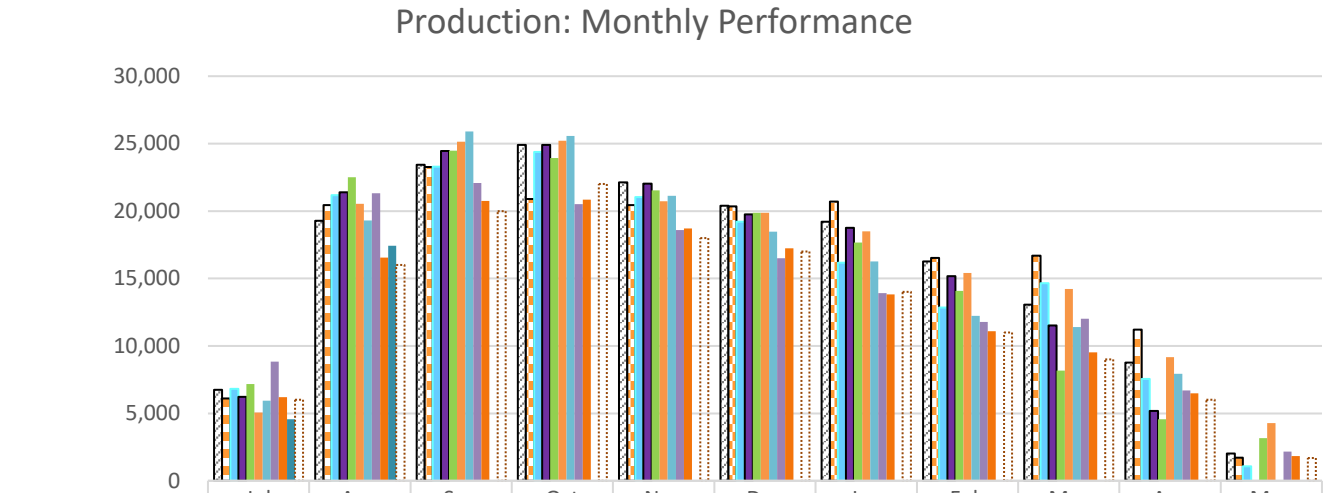


MILK PRODUCTION

Graphic 1.11: Changing land area and cow numbers

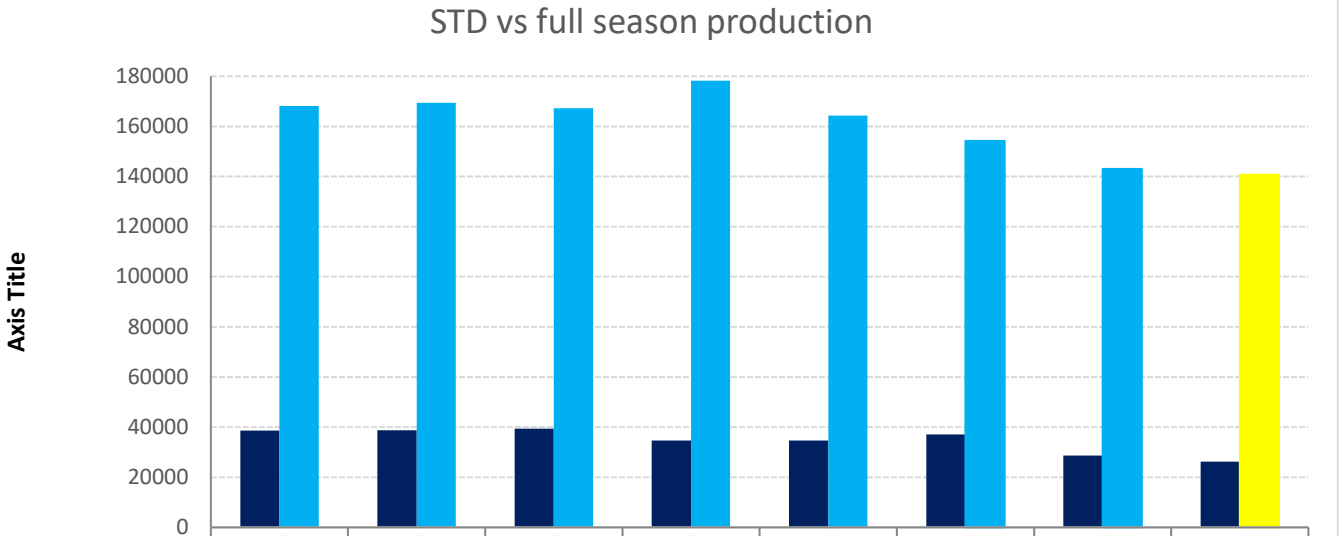


Graphic 1.12: Monthly milk production



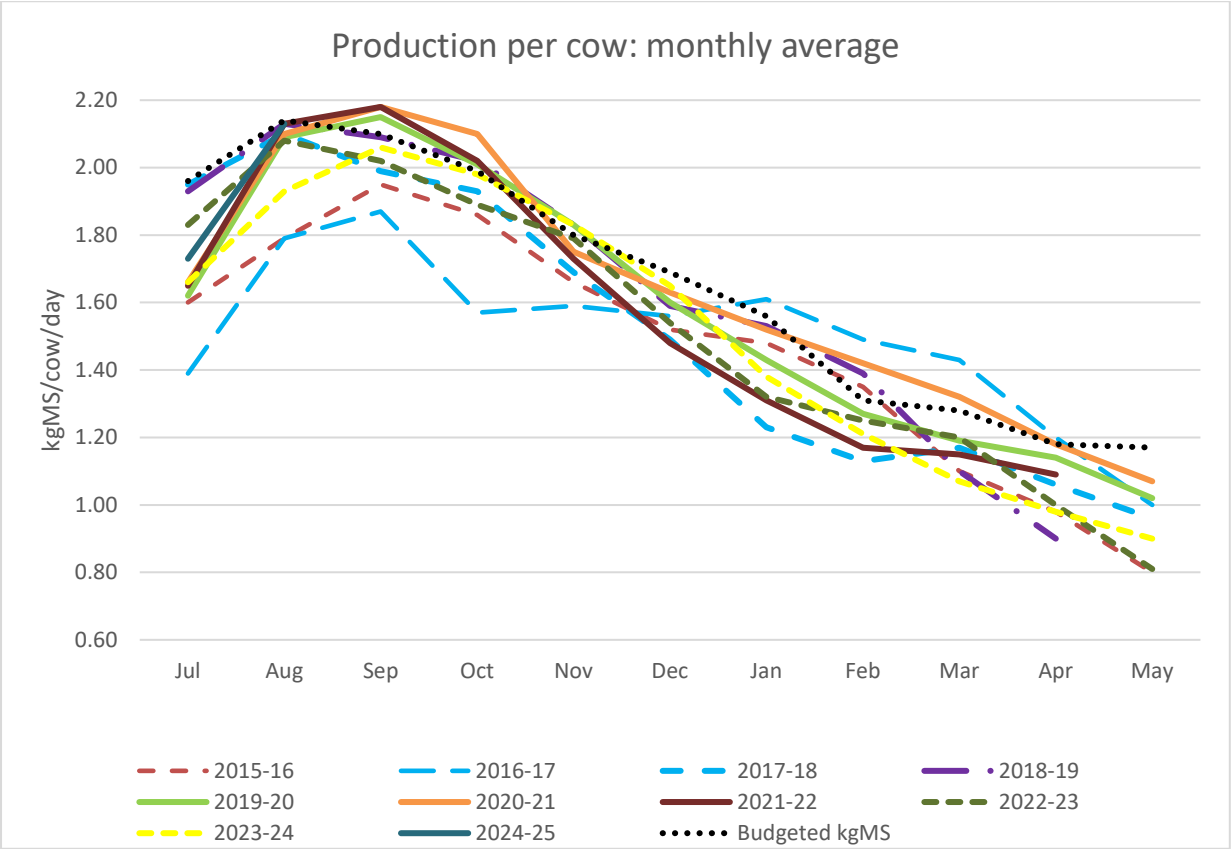
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
15/16 production	6,756	19,277	23,422	24,899	22,137	20,397	19,201	16,258	13,066	8,766	2,019
16/17 production	6,095	20,440	23,267	20,896	20,431	20,337	20,697	16,519	16,693	11,202	1,717
17/18 Production	6,807	21,183	23,287	24,376	21,030	19,213	16,158	12,856	14,641	7,549	1,070
18/19 Production	6,216	21,391	24,460	24,906	22,042	19,744	18,745	15,165	11,509	5,181	
19/20 Production	7,184	22,507	24,485	23,924	21,544	19,879	17,675	14,070	8,179	4,564	3,173
20/21 Production	5,052	20,543	25,146	25,222	20,716	19,866	18,488	15,411	14,234	9,178	4,270
21/22 Production	5,945	19,307	25,906	25,576	21,137	18,472	16,263	12,220	11,403	7,933	
22/23 Production	8,826	21,315	22,078	20,503	18,591	16,502	13,921	11,779	12,017	6,705	2,153
23/24 Production	6,205	16,549	20,742	20,834	18,705	17,241	13,824	11,093	9,523	6,486	1,821
24/25 Production	4,562	17,439									
Budgeted 24/25	6,000	16,000	20,000	22,000	18,000	17,000	14,000	11,000	9,000	6,000	1,700

Graphic 1.13: Production season to date compared to year end actual or 2024/25 target



	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25
31st May	38664	38782	39366	34612	34619	37136	28641	26251
7th September	168169	169362	167185	178291	164246	154204	143022	140700
% as total	23%	23%	24%	19%	21%	24%	20%	19%

Graphic 1.14: Production per cow



Notes:

MILK QUALITY

Our target this season is to provide the highest quality milk for Fonterra by achieving Te Tihi status in the Co-operative Difference framework. This represents Excellence in milk quality for 90% of our milk supply days.

To unlock the 7c/kg MS we have worked on the following:

Co-operative and Prosperity

- We will have full and accurate farm dairy records by 30th June 2025

Environment

- A Farm Environment Plan meeting all four key practices
- Purchased N surplus will be at or lower than the target kg N/ha
- We participate in a product stewardship scheme for plastics
- No discharge of farm dairy effluent to water
- 80% of our feed used for the season will be farm-grown
- We have completed the Winter Grazing Checklist

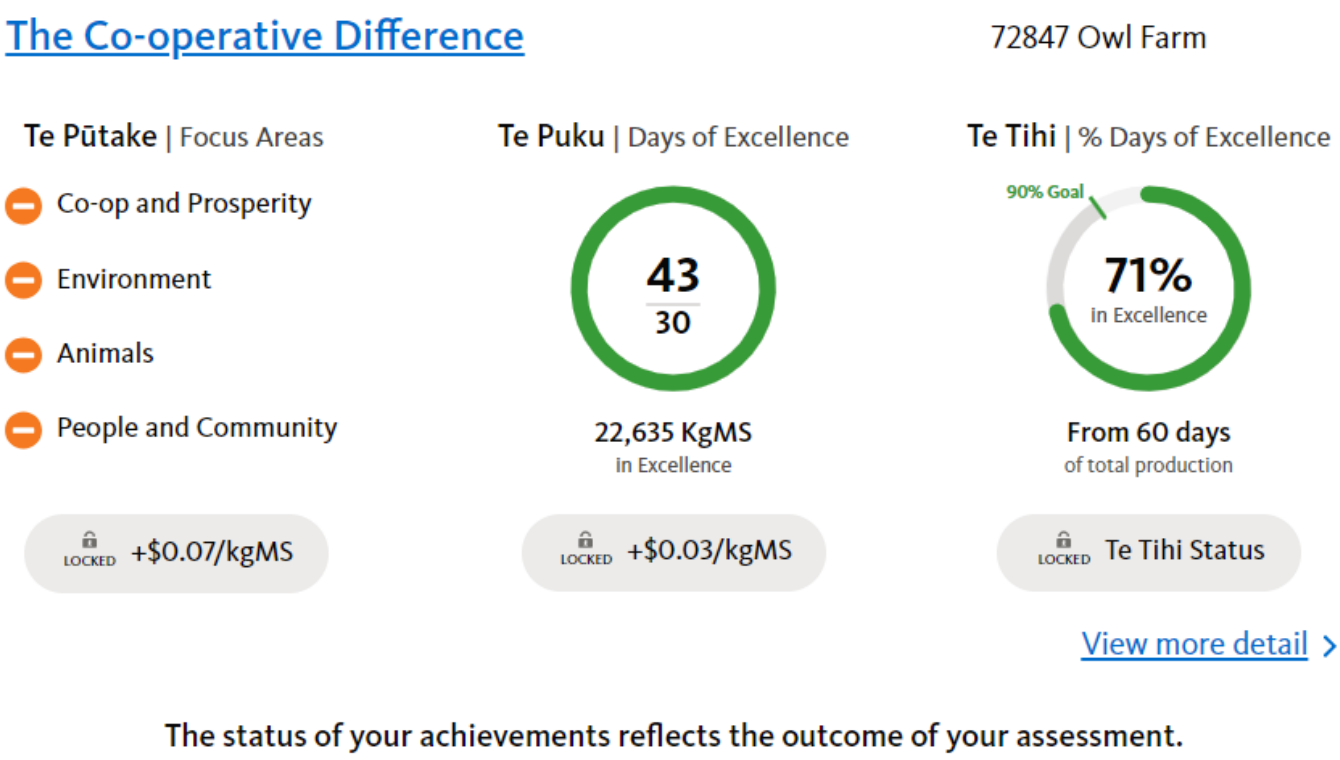
Animals

- An Animal Wellbeing Plan that addresses nutrition, health, environment, and behavioural issues

People and Community

- The 360 Workplace Assessment achieving 100% on the foundation section

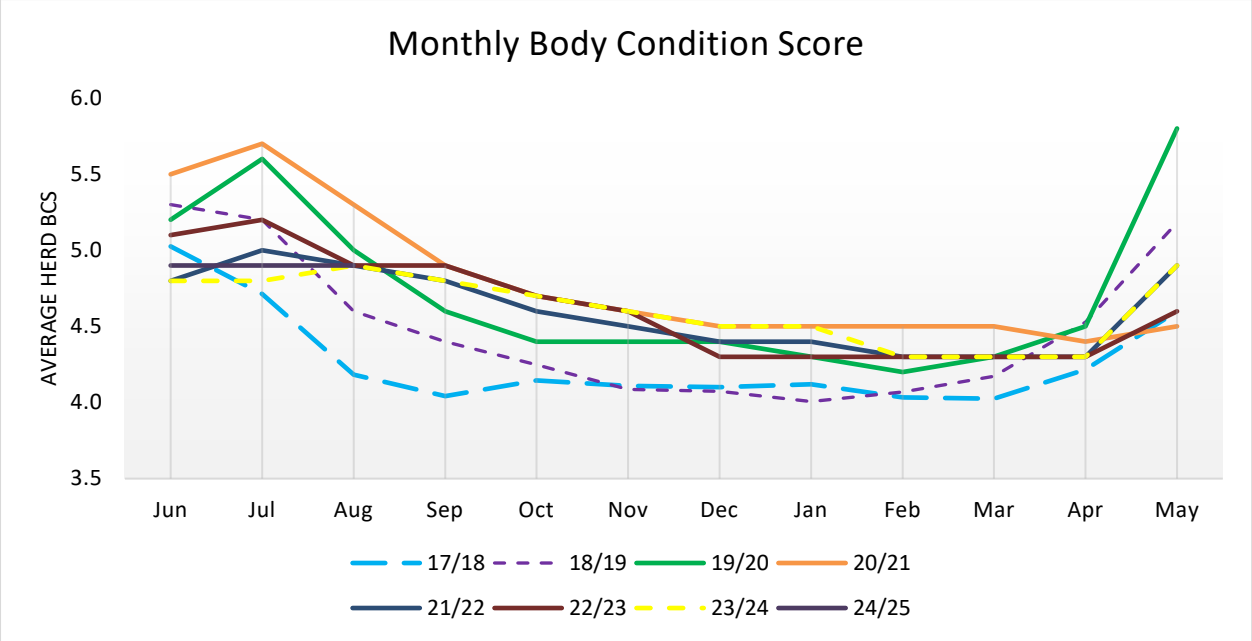
Graphic 1.15: The Co-operative Difference summary at 7/9/2024



2.0 ANIMAL WELLBEING

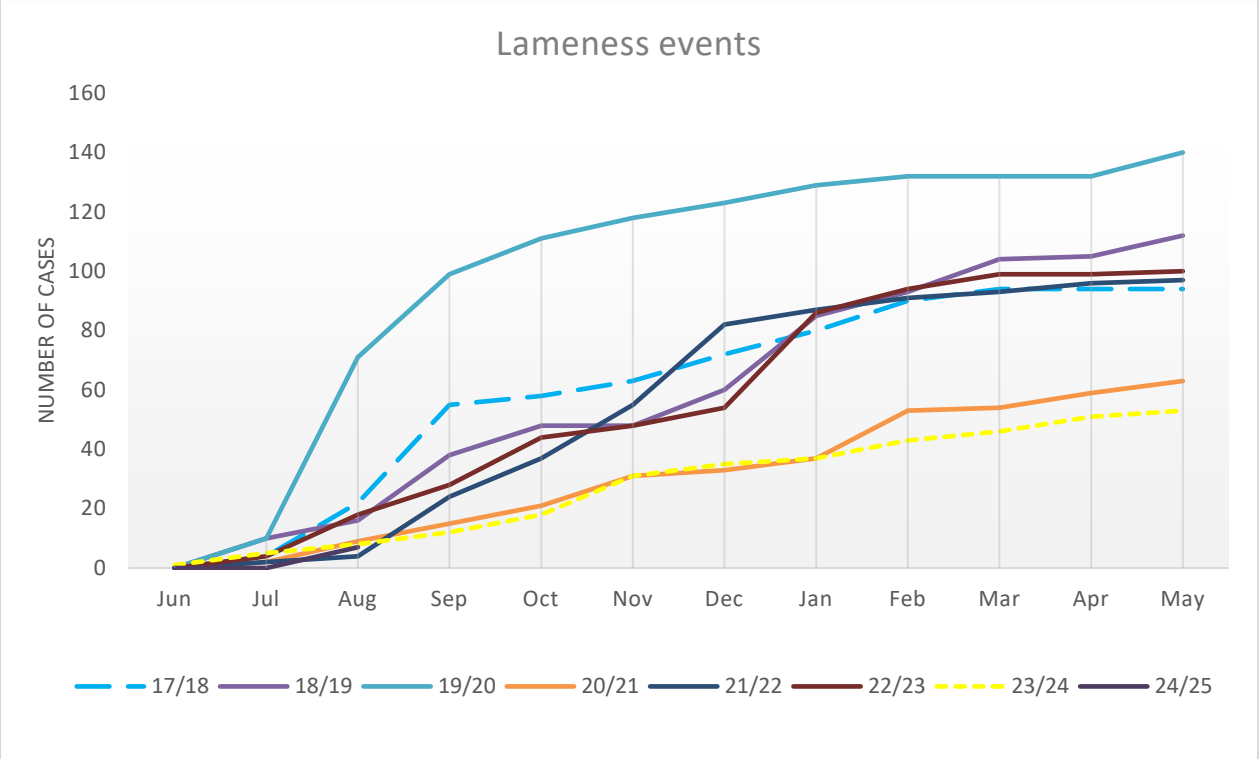
BODY CONDITION SCORE

Graphic 2.1: Monthly Body Condition Score



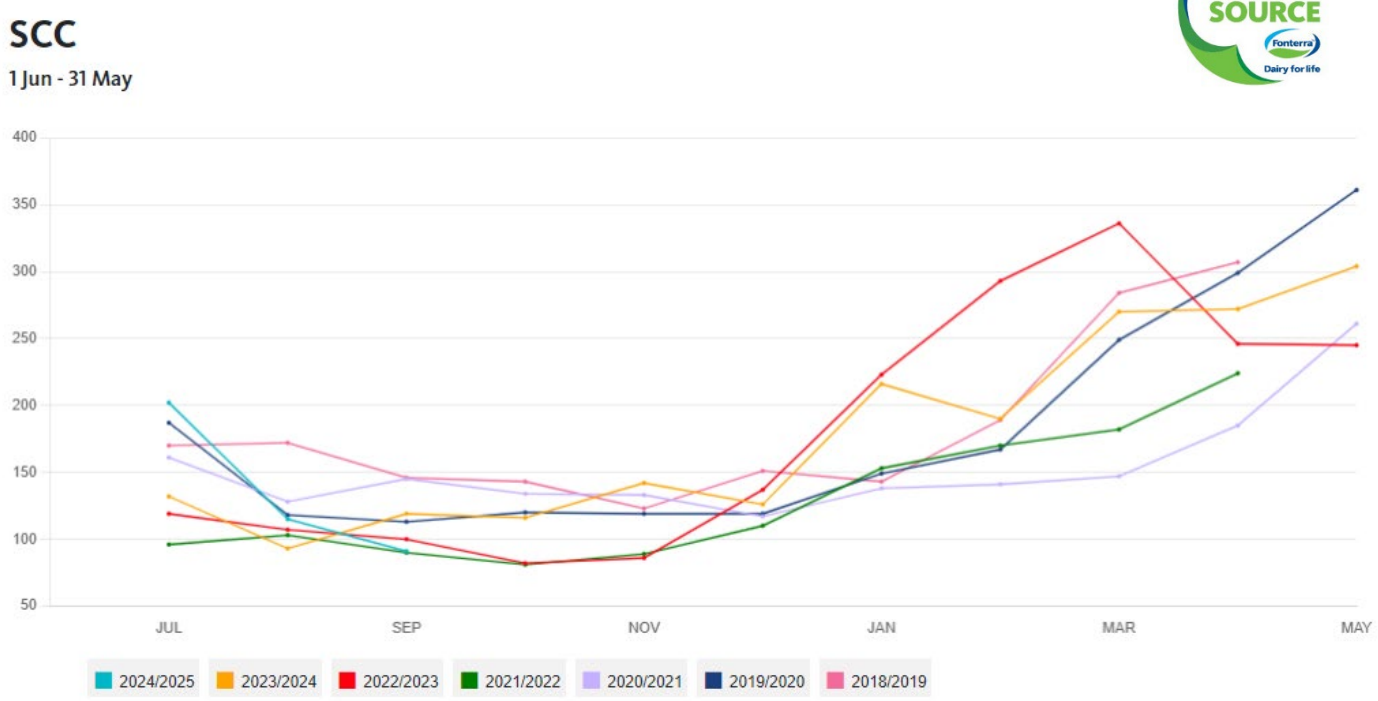
LAMENESS

Graphic 2.2: Lameness events between years

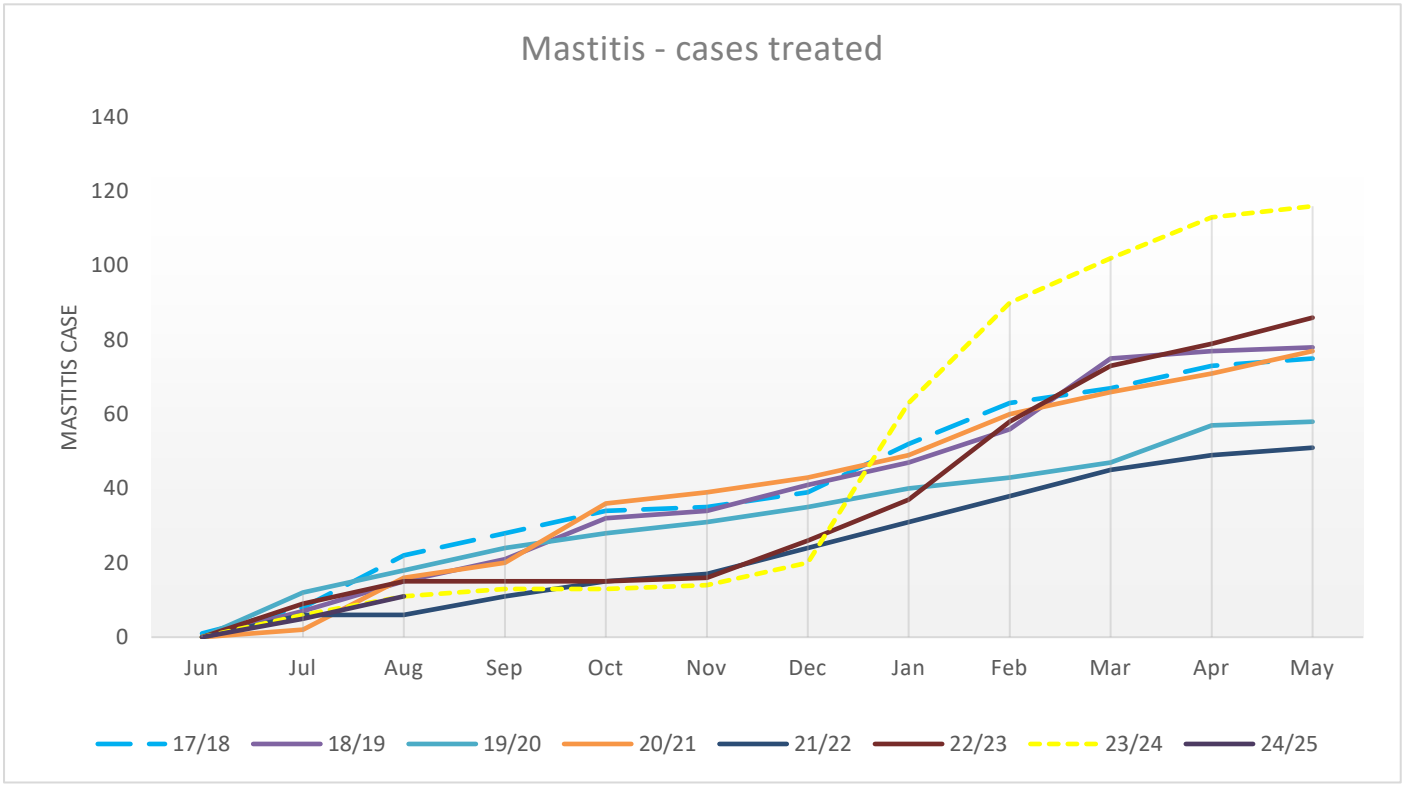


SCC (SOMATIC CELL COUNT)

Graphic 2.3: Monthly SCC over years



Graphic 2.4: Mastitis Cases Treated



Notes:

REPRODUCTION

Our reproductive goals are to achieve 78% 6-week in-calf rate and a <12% Not-in-calf rate with a 77 day mating period.

Graphic 1.18: Fertility Focus Report 2023

Fertility Focus 2023: Seasonal

Owl Farm
Tony Alarca

Report date:	19/02/24
PTPT:	HPTT
Herd Code:	2/1884
No of cows included:	345
These cows calved between:	18/05/23 and 23/11/23
Mating start & end date: (based on AB or pregnancy test data)	25/09/23 - 09/12/23
Next planned start of calving:	03/07/24
Duration of mating:	76 days
Duration of AB period:	76 days

incalf FERTILITY FOCUS Version 3.01

DairyNZ

LIC

1 Overall herd reproductive performance

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

Your herd	70% (70-71%)
Aim above	78%

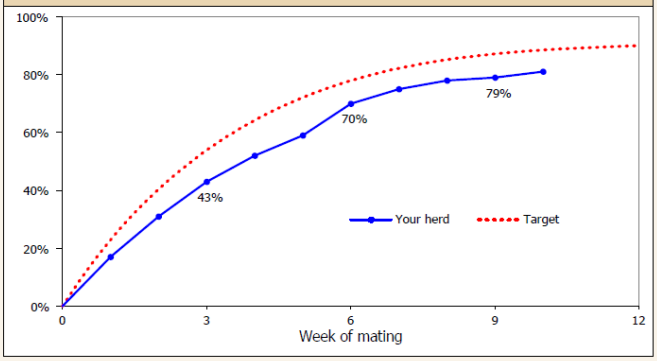
☆☆☆

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

Your herd	16% (14-16%)
Aim for	11%

☆☆☆

% of herd in calf
Cumulative by week of mating



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	88%
Aim above	90%

☆☆☆☆☆

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	48%
Aim above	60%

☆

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	78%	90%
Aim above	80%	95%
	☆☆☆	☆

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

Calved by	Week 3	Week 6	Week 9
Your herd	59%	82%	95%
Aim above	67%	88%	98%
	☆	☆	☆

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

Your herd	33%
Aim above	85%

☆

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

Your herd	91%
Aim above	90%

☆☆☆☆☆

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

Your herd	94%
Aim above	95%

☆☆☆☆☆

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

Treated	By MSD	Wks 1-3	Wks 4-6
Your herd	9%	5%	2%

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	16%
Expected	16%

OK

Behind Your Detailed Fertility Focus Report

Report period: Cows calved between 18/05/23 and 23/11/23.
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:	19/02/24
PTPT:	HPTT
Herd Code:	2/1884
Calvings up to this date requested for analysis:	18/02/24
No of cows included:	345
These cows calved between:	18/05/23 and 23/11/23
Mating start & end date: (based on AB or pregnancy test data)	25/09/23 - 09/12/23

Version 3.01

Part A) Herd records cross check

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

2023/24	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
No. of calvings		47	183	95	20								345
No. of AB matings					116	328	115	29					588
No. of preg tests								340	98				438
No. of non-aged/late aged positive preg tests													0
No. of cows culled or died						1	2		7				10

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	288
Recorded empty	42
Doubtful/recheck*	11
Culled without pregnancy test	3
No record of cull or pregnancy test	1
Cows analysed	345

*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

344 cows had calving dates in the required range and were not culled before day 21 of mating and 88% 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 560 AB inseminations on and between 25.09.23 and 09.12.23.

3 Key indicators to areas for improvement

Calving pattern of first calvers

69 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

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

3-week submission rate of first calvers

69 first calvers had calving dates in the required range and were not culled before day 21 of mating and 91% of these were submitted during the first 21 days of mating.

Heat detection

115 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.

Pre-mating heats

344 cows had calving dates in the required range and were not culled before day 21 of mating and 114 of these had a pre-mating heat recorded.

Non-cycling cows

344 cows had calving dates in the required range and were not culled before day 21 of mating and 57 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 bulls 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.

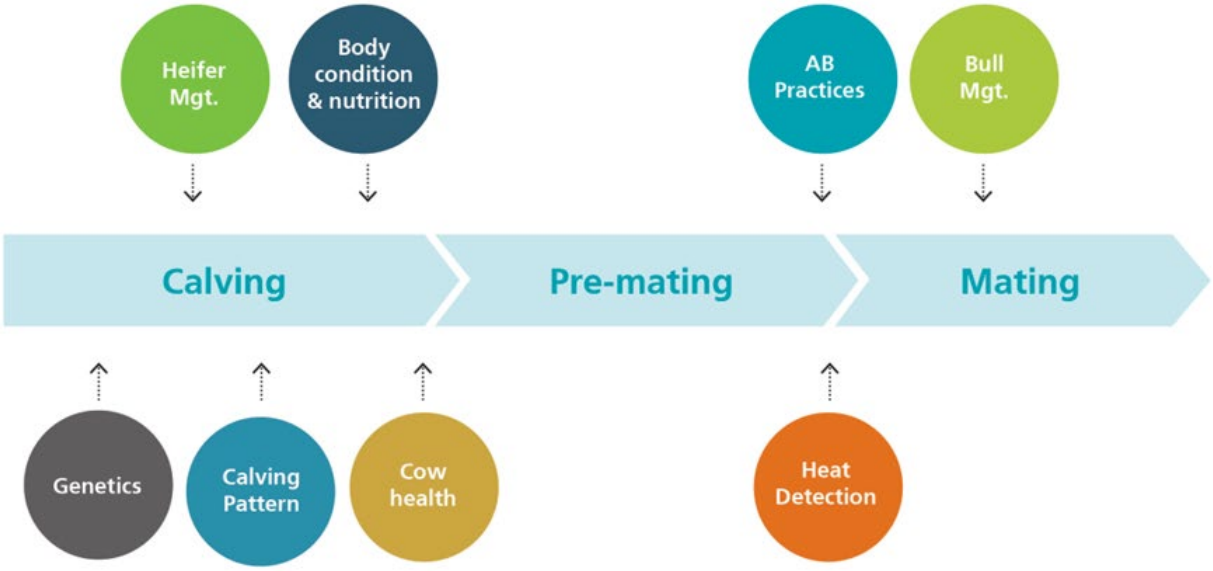
Graphic 2.5: Reproduction comparison between years

	6-week in-calf rate (%)	Not-in-calf rate (%)	Mating length
2023	70	16	76 days
2022	60	18	88 days
2021	68	9	94 days
2020	65	14	90 days
2019	74	10	83 days
2018	74	13	87 days
2017	65	18	79 days

We have struggled to meet our Wagon Wheel KPI of less than 15% involuntary culls with 22% wastage for the last two seasons. This represents cows that are culled due to being empty, untreatable mastitis, lameness or a death. Empty cows are a big contributor to this statistic and a barrier to maintaining a 19% replacement rate. This season we utilised support from our vets, LIC and the Halter team to analyse past performance and set a plan in place for 2024 mating.

Herd fertility is dependent on eight key management areas, each playing an important role in herd reproduction.

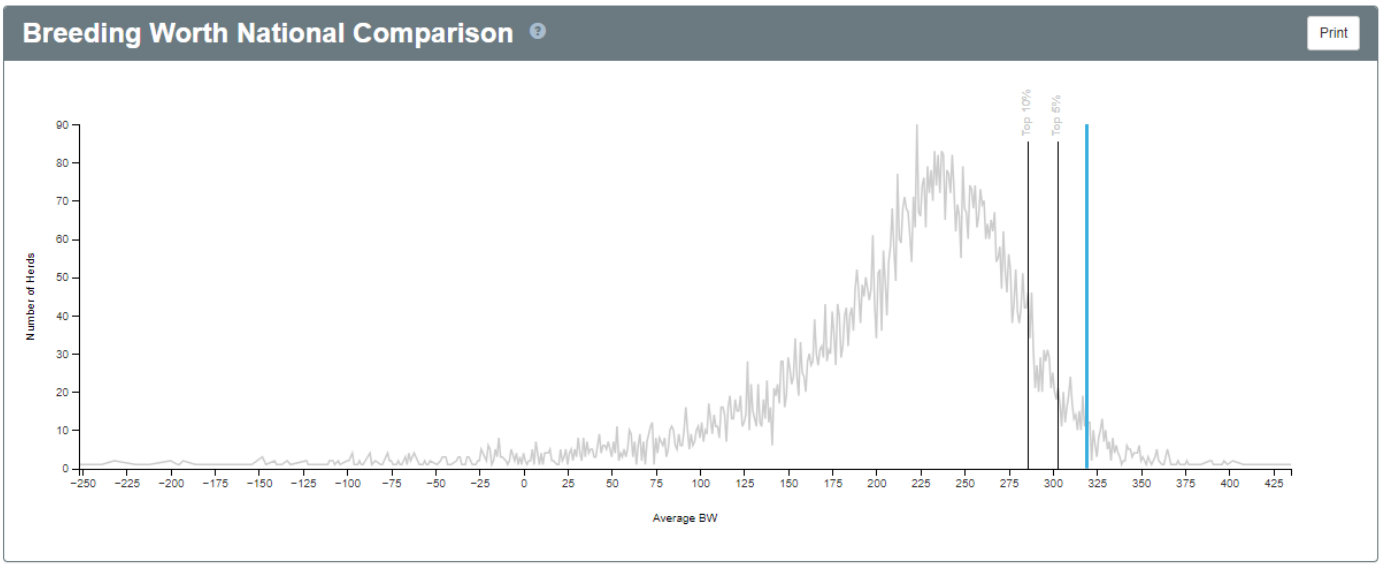
Graphic 2.6 InCalf ingredients graphic from DairyNZ's InCalf book



GENETICS

Our herd has an average Fertility BV of 2.96% (ranging from -5.6 to 13.1); approximately 11% of our herd have a negative Fertility BV. Our 2023-born heifers have a fertility BV of 5.57%. This ensures that current genetics are not a limitation for reproductive success.

Graphic 2.7 Owl Farm breeding worth national comparison

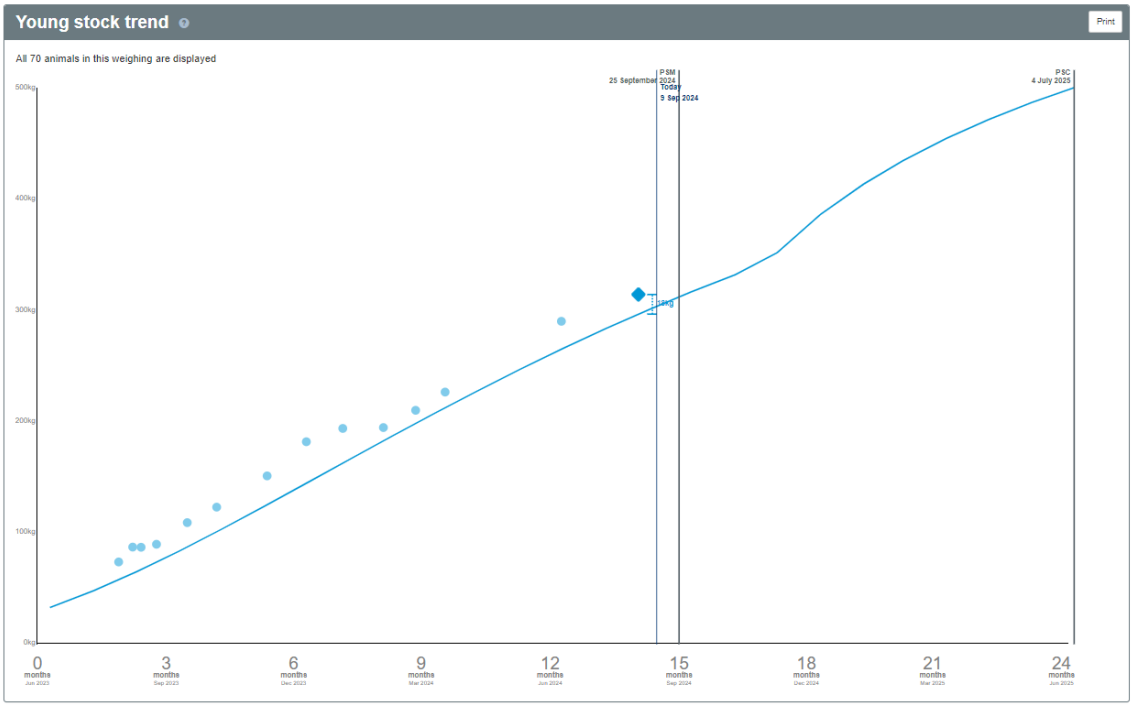


HEIFER MANAGEMENT & BULL MANAGEMENT

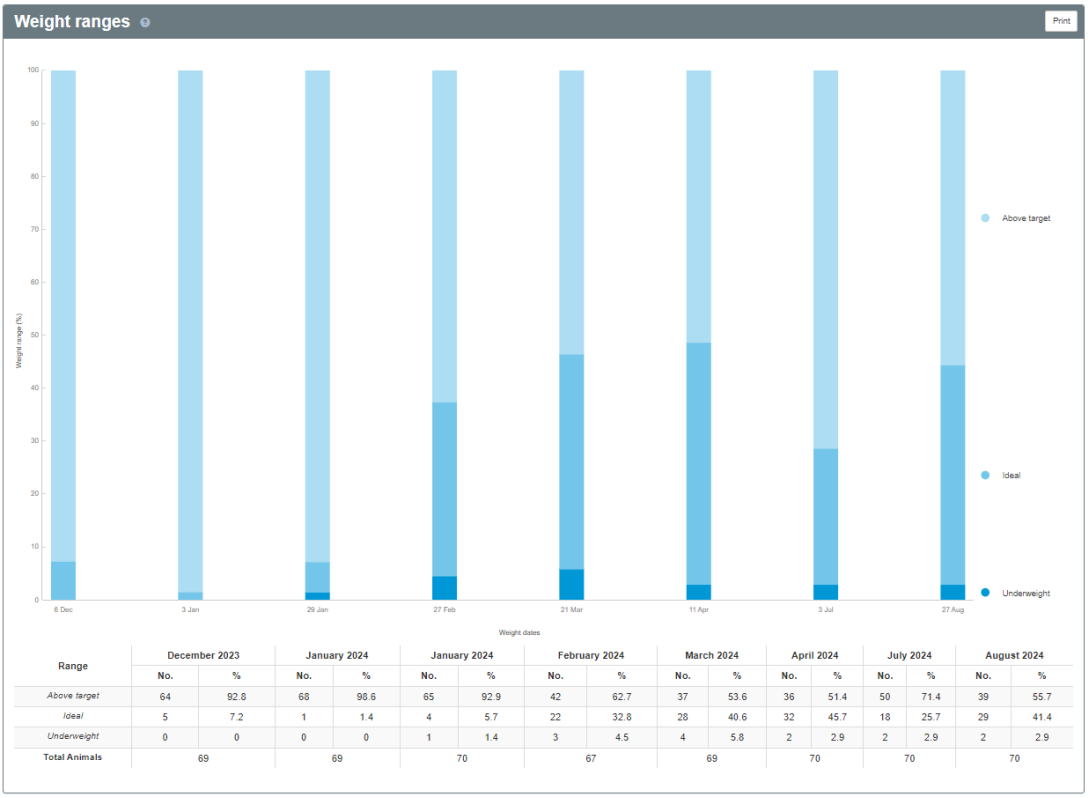
For the last three seasons our heifers have achieved liveweight targets at all milestones and have consistently achieved <10% Not-in-calf rate.

2023-born calves left the farm on 1st May to commence grazing at Waikato Heifer Growers. They weighed over 226 kg when they left the farm. They are now 314 kg and have achieved more than 60% of their mature liveweight prior to PSM.

Graphic 2.7: 2023-born calves - weight trend



Graphic 2.8: 2023-born calves - weight ranges

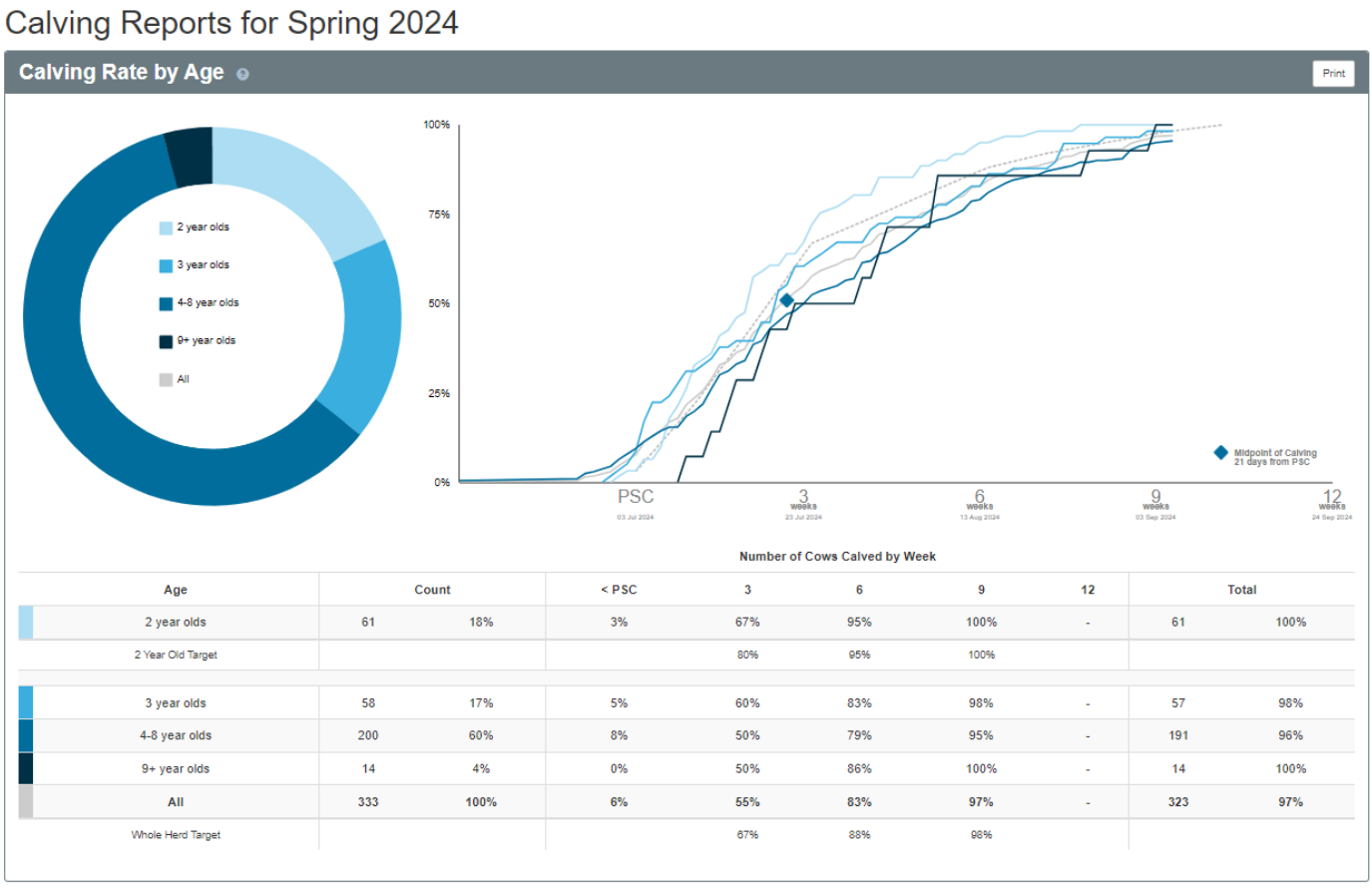


Range	December 2023		January 2024		January 2024		February 2024		March 2024		April 2024		July 2024		August 2024	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Above target	64	92.8	68	98.6	65	92.9	42	62.7	37	53.6	36	51.4	50	71.4	39	55.7
Ideal	5	7.2	1	1.4	4	5.7	22	32.8	28	40.6	32	45.7	18	25.7	29	41.4
Underweight	0	0	0	0	1	1.4	3	4.5	4	5.8	2	2.9	2	2.9	2	2.9
Total Animals	69		69		70		67		69		70		70		70	

CALVING PATTERN

Calving pattern became an issue when we were using Wagyu bulls. This year only heifer 6 and 9 week industry targets were met. Managing gestation length and calving rate is an opportunity for us. We have selected dairy beef sires with a gestation length of 280 days (Kakahu Milestone - Charolais) and 278 days (Kakahu Project – Angus) and are investing this season in the Why Wait program for selected cows cycling in the week prior to PSM. Short Gestation Length (SGL) Angus bulls are used in week 10 of mating and SGL dairy bulls are used in week 11 of mating to create a 9.5-week calving period.

Graphic 2.9 Calving rate 2024

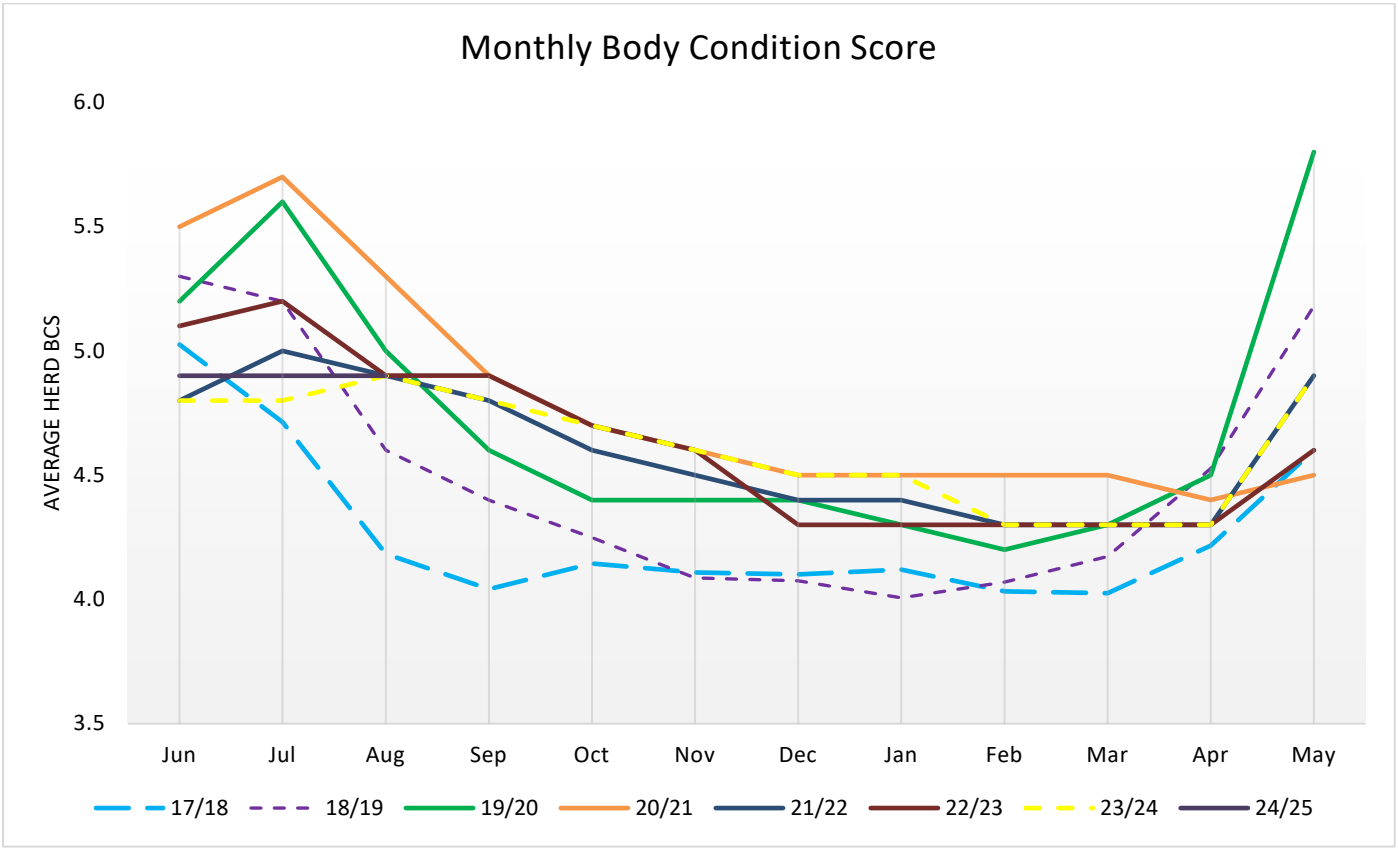


Age	Count		< PSC	3	6	9	12	Total	
2 year olds	61	18%	3%	67%	95%	100%	-	61	100%
2 Year Old Target				80%	95%	100%			
3 year olds	58	17%	5%	60%	83%	98%	-	57	98%
4-8 year olds	200	60%	8%	50%	79%	95%	-	191	96%
9+ year olds	14	4%	0%	50%	86%	100%	-	14	100%
All	333	100%	6%	55%	83%	97%	-	323	97%
Whole Herd Target				67%	88%	98%			

BODY CONDITION SCORE

BCS targets at PSC (5 and 5.5) and PSM (4.0-4.5) are often met; however, cows consistently continue to lose weight during mating and this is one of the key areas we have focused on this season.

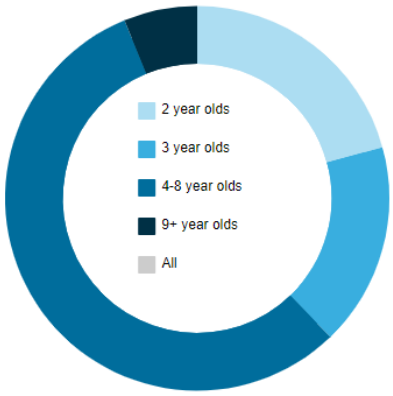
Graphic 2.10 BCS over time

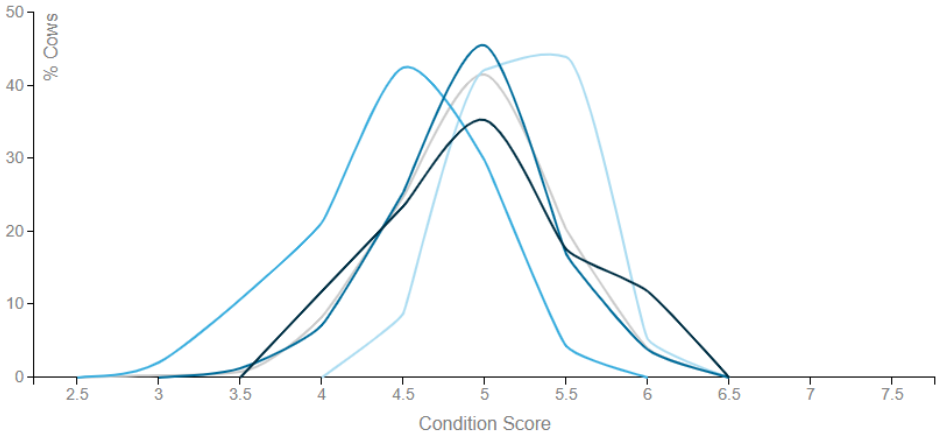


Graphic 2.11 Spring BCS age profile

BCS by Age for 19 August 2024

275 of 329 cows scored on this date.





Body Condition Scores

Age	3.0	3.5	4.0	4.5	5.0	5.5	6.0	Average	Total Scored	% Scored
2	0	0	0	5	24	25	3	5.2	57	93%
3	1	0	10	20	14	2	0	4.6	47	85%
4-8	0	2	11	39	70	26	6	4.9	154	81%
9+	0	0	2	4	6	3	2	5.0	17	77%
All	**1**	**2**	**23**	**68**	**114**	**56**	**11**	**4.9**	**275**	**84%**

NUTRITION

Cows that calve in the first 3 weeks have good reproductive outcomes at Owl Farm, and those that calve after 3 weeks are disadvantaged.

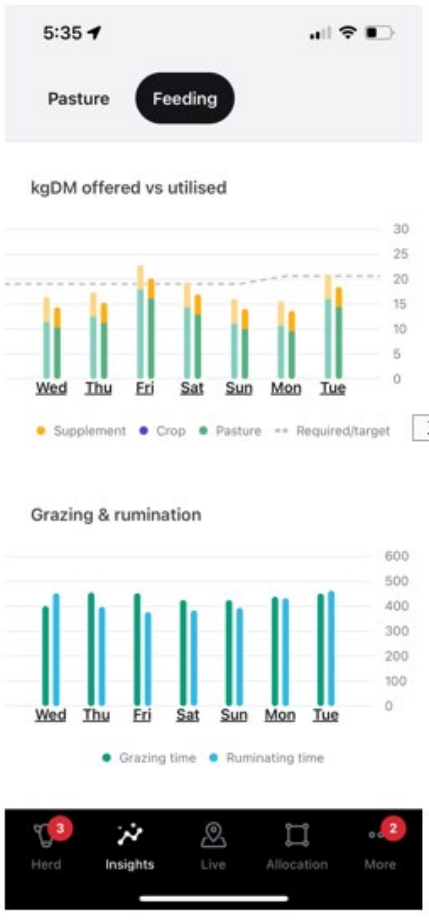
Key changes to our system:

- carry 50 t DM winter spring supplements instead of our usual 20-30 t DM.
- Target a higher APC (2100 vs 1900) and longer rotation length (25 vs 21 days) at Balance Date on the 28th August.
- Use the feed budget to provide a consistent diet for cows during calving to reduce the need for high amounts of silage of PK to later-calving cows.
- Separate young and light cows based on BCS into a separate herd and preferentially feed by allowing higher residual target of 1600 kg DM/ha, and offering PK to reduce BCS loss.

Feed is sampled monthly and blood tests are carried out on springers and milkers. Daily feed allocation, grazing and rumination time is monitored. We utilise rumination data and health alerts to support the identification and diagnosis of animal health outcomes.

Graphic 2.12 Data sources used during the spring at Owl Farm

1



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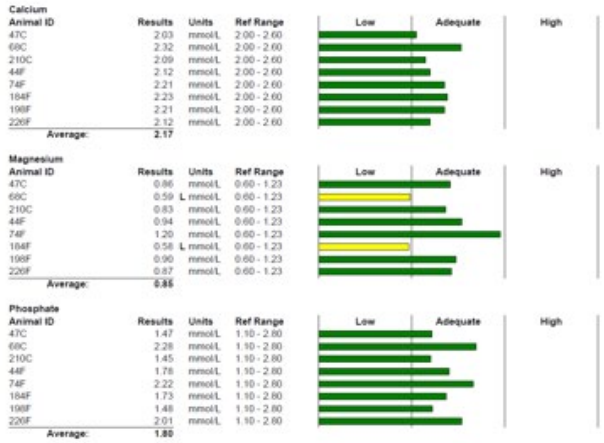


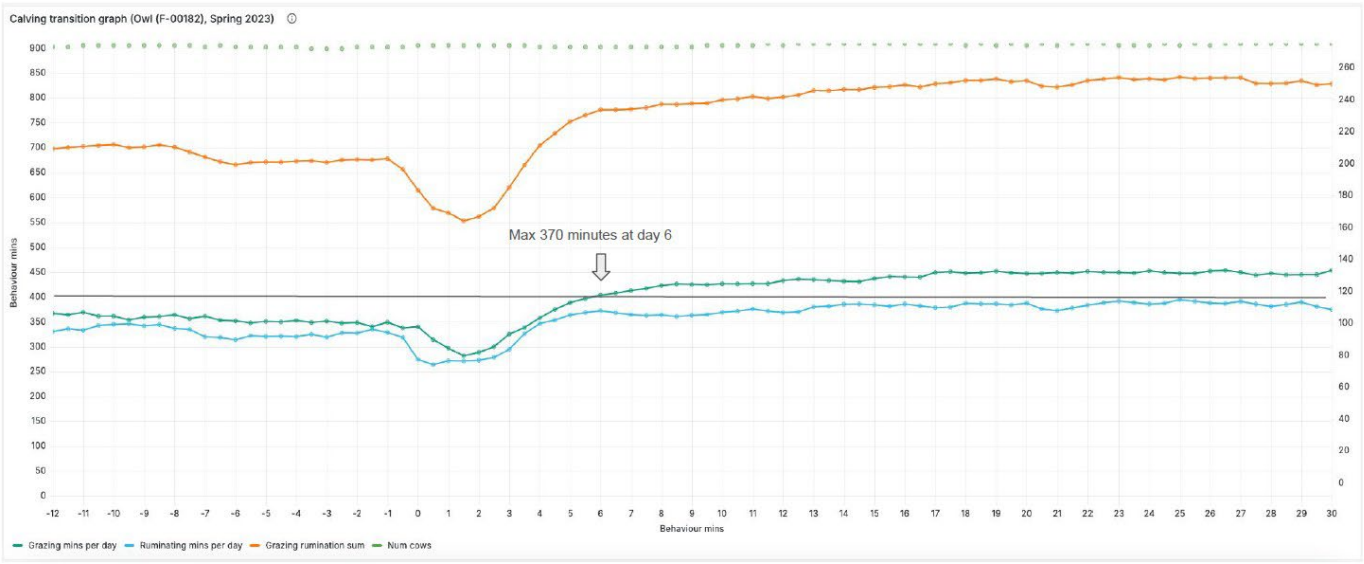
3

Plant Analysis Results

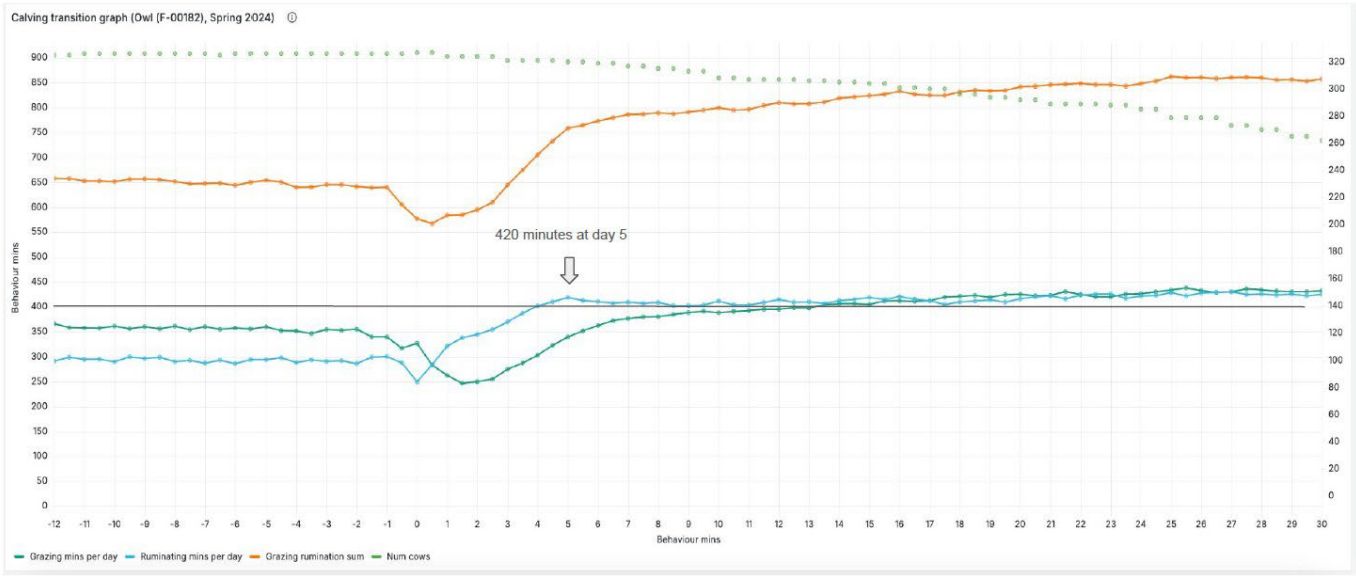
		Grass Silage	Hay	Pdk 58	Pdk 4	Pdk 17
Sample Name:						
Lab Number:		3642729.1	3642729.2	3642729.3	3642729.4	3642729.5
Sample Type:		Mixed Pasture, Silage	Mixed Pasture, Hay	Mixed Pasture	Mixed Pasture	Mixed Pasture
Sample Type Code:		P143	P150	P1	P1	P1
Nitrogen	%	3.0	1.8	3.8	3.4	3.8
Nitrogen	%DM	3.1	1.8	3.9	3.5	3.9
Dry Matter*	%	30.7	84.3	14.5	15.7	18.5
Crude Protein	%DM	19.5	11.5	24.2	21.8	24.6
Acid Detergent Fibre (seq)*	%DM	29.7	33.9	20.5	21.2	19.9
Neutral Detergent Fibre*	%DM	45.2	57.4	36.5	36.5	37.7
Lignin*	%DM	6.1	6.6	4.4	4.0	4.0
Ash*	%DM	12.3	8.6	11.1	10.2	10.2
Organic Matter*	%DM	87.7	91.4	88.9	89.8	89.8
Soluble Sugars*	%DM	1.2	7.0	14.1	13.6	12.4
Starch*	%DM	1.0	2.0	< 0.5	0.5	< 0.5
Crude Fat*	%DM	4.1	1.8	4.3	4.5	4.3
Digestibility of Organic Matter in Dry Matter (DOMD)*	%	60.3	51.5	79.2	78.8	77.9
Metabolisable Energy*	MJ/kgDM	9.7	8.2	12.7	12.6	12.5

Graphic 2.13 Rumination data comparing 2023 calving vs 2024

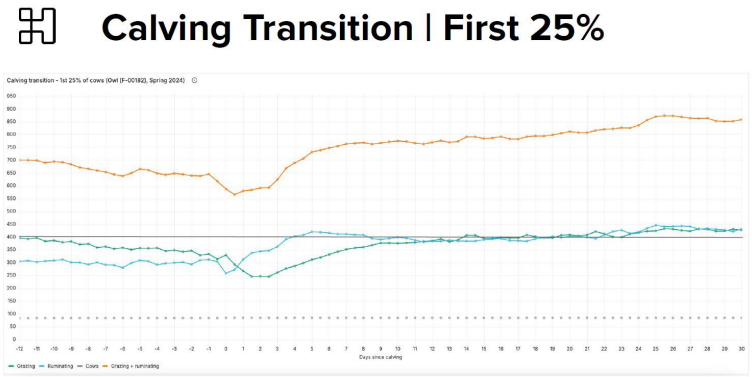
Calving Transition | 2023

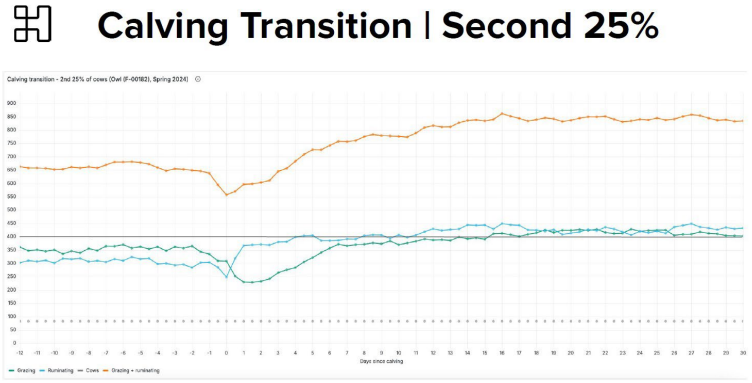


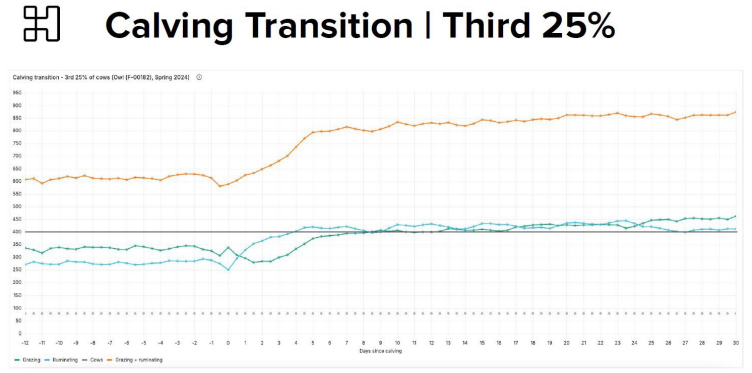
Calving Transition | 2024

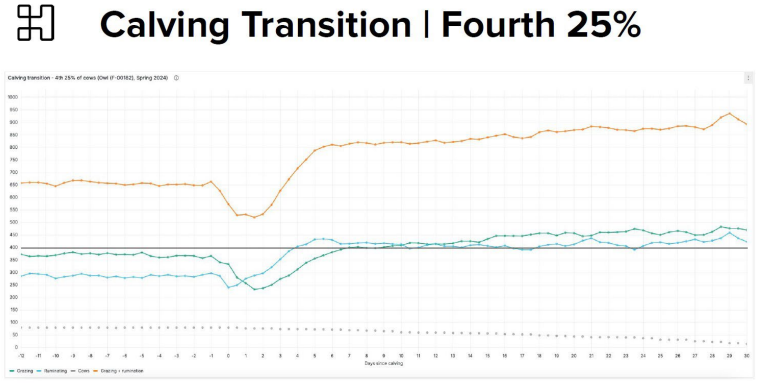


Graphic 2.14 Rumination data comparing cows calved throughout the 2024 spring







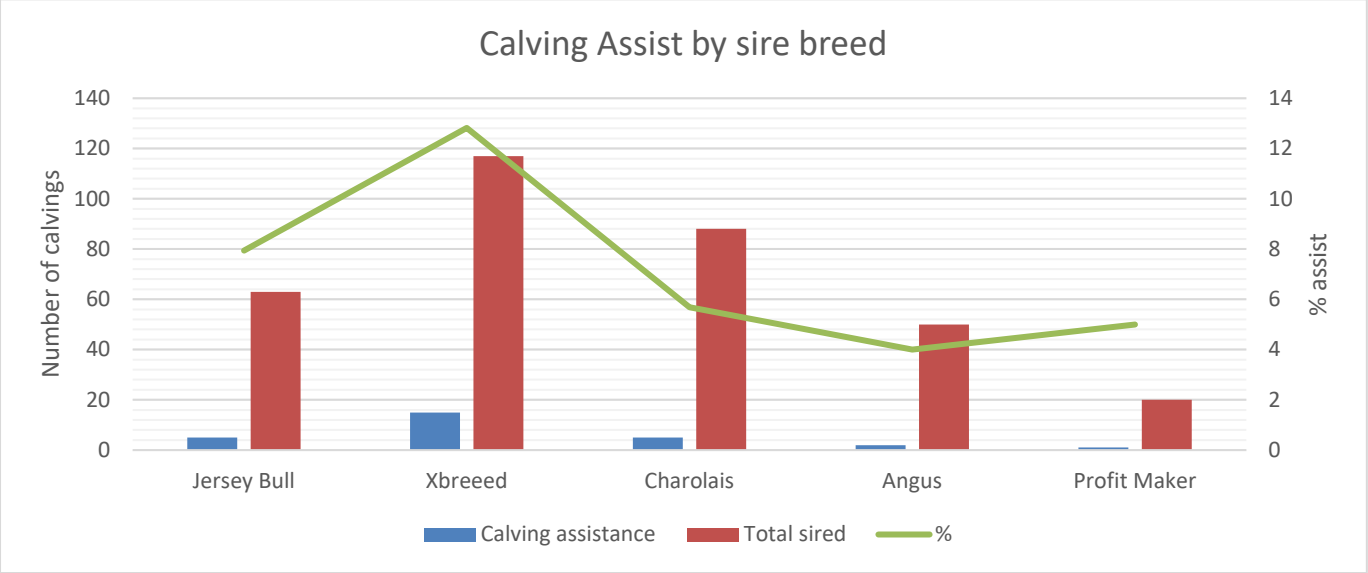


COW HEALTH

Calf weights were collected this season for the first time to understand the impact of birthweights on ease of calving and liveweight gains. We did not weigh the calves from the heifers (will try to in 2025). Charolais averaged 39 kg. Profit Maker averaged 35 kg. Angus averaged 36 kg. Xbreed averaged 30 kg.

While dairy beef calves were significantly bigger, they had proportionally easier calving this year than both Xbreed and Jersey bulls over heifers.

Graphic 2.13 Owl Farm calving assists by breed comparison



Metabolic treatments: 10 cows were treated for metabolic disease (3%)

Retained Foetal Membranes: 6 cows were treated for RFM (2%)

Metri-cure: all cows were checked in 3 batches prior to PSM

Mastitis: 11 cases of mastitis STD (3%)

Lameness: 12 lame cows STD (3%)

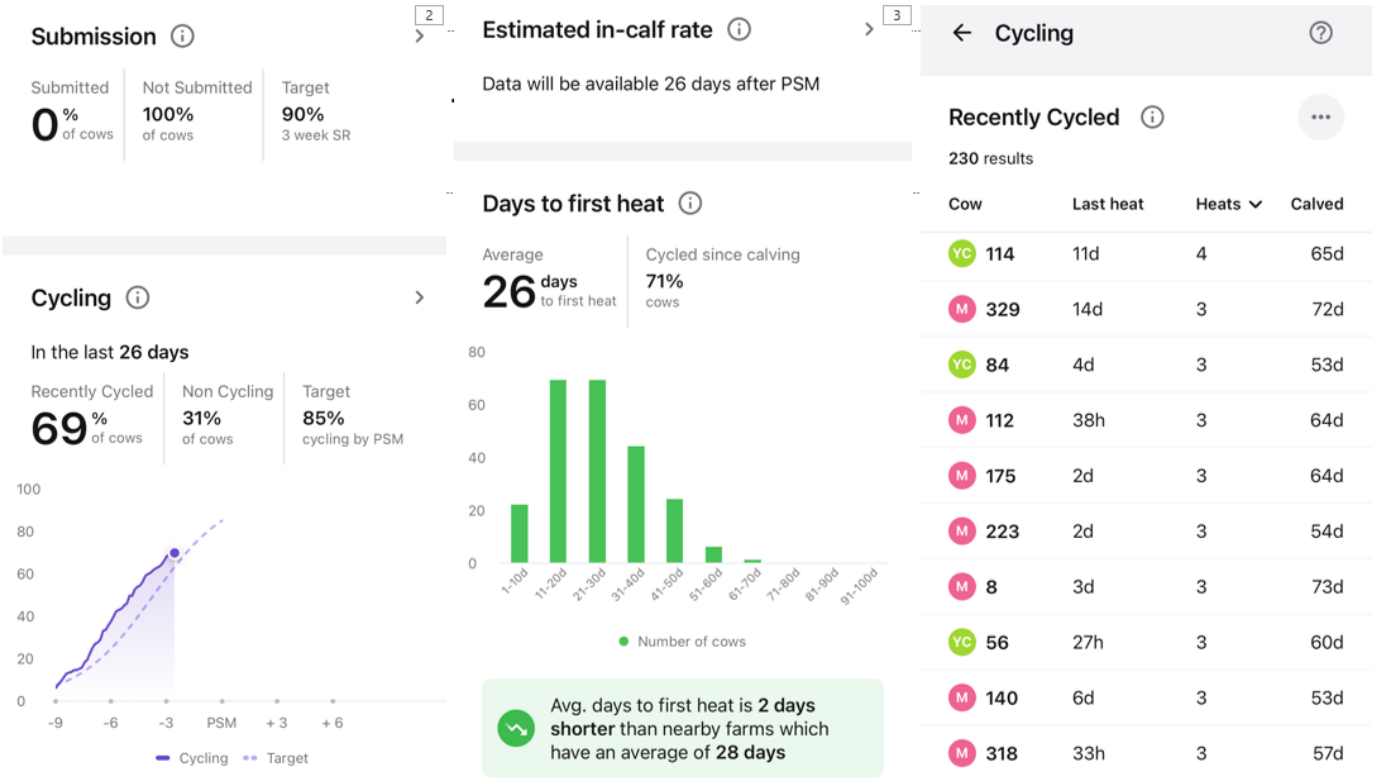
AB PRACTICES

AI once daily, based on Halter heat detection after morning milking.

HEAT DETECTION

Cows identified as on heat at morning milking and not yet mated are automatically drafted out after milking for mating. We have used wearables only for heat detection for the past two seasons.

Graphic 2.14 Daily wearable cycling data



BULL MANAGEMENT

We have not had bulls on farm for 7 years due to health and safety risks for our many visitors. Bulls are run with heifers out grazing at a ratio of 1:15.

Graphic 2.15 Mating Plan

Planned Start of Mating: 25/9/2024

Yearling Matings – x70 Synch Plan – Forward Pack KiwiCross followed by 5 registered Jersey bulls

Replacement AB – 25/9/24 to 19/10/24 – 25 days

- 25/9/24 to 15/10/24 – 21 days @ 8 straws sexed per day (168 straws)
- 16/10/24 to 19/10/24 – 4 days @ 5 straws sexed per day (20 straws)
- Beef - Charolais Milestone into anything else on the day (low BW/late/ intervention cows)

Marker – Charolais- Milestone

- 20/10/24 to 24/10/24 – 5 days

Performance Beef – week 4.5 to week 9

- 25/10/24 to 26/11/24 – 34 days (Milestone, semen in storage + Project)

SGL Angus – Week 10

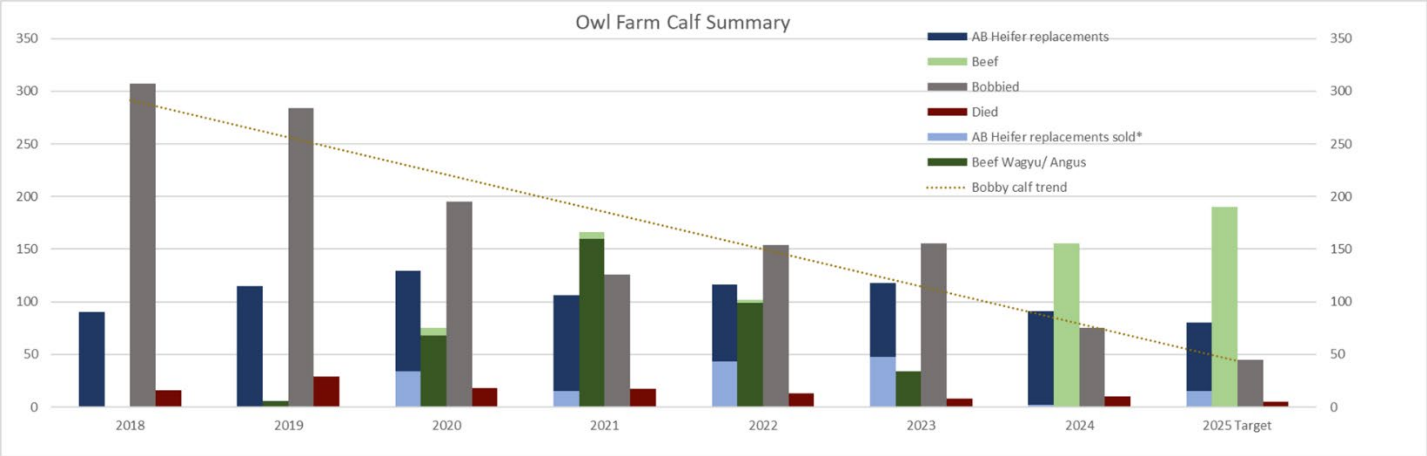
- 27/11/24 to 3/12/24 - 7 days

SGL Kiwicross – Week 11

- 4/12/24 to 10/12/24

PURPOSEFUL LIVES FOR CALVES

Graphic 1.18 Calf fate over time



GROWING WEANED CALVES

In 2020 we made the decision to grow our replacement heifer calves at home. For the summers of 2020 (4.7ha), 2021 (7.1ha) and 2022 (7.89ha) the calves were grazed on spring-sown chicory crops.

To dilute the cost of establishment we carried over the 2022-sown chicory and, after a weed spray we undersowed on 18th May with Manta Italian ryegrass (12 kg/ha) and Relish red clover (5 kg/ha). This allowed the calves to start grazing six weeks earlier on 11th October after four grazings by the cows.

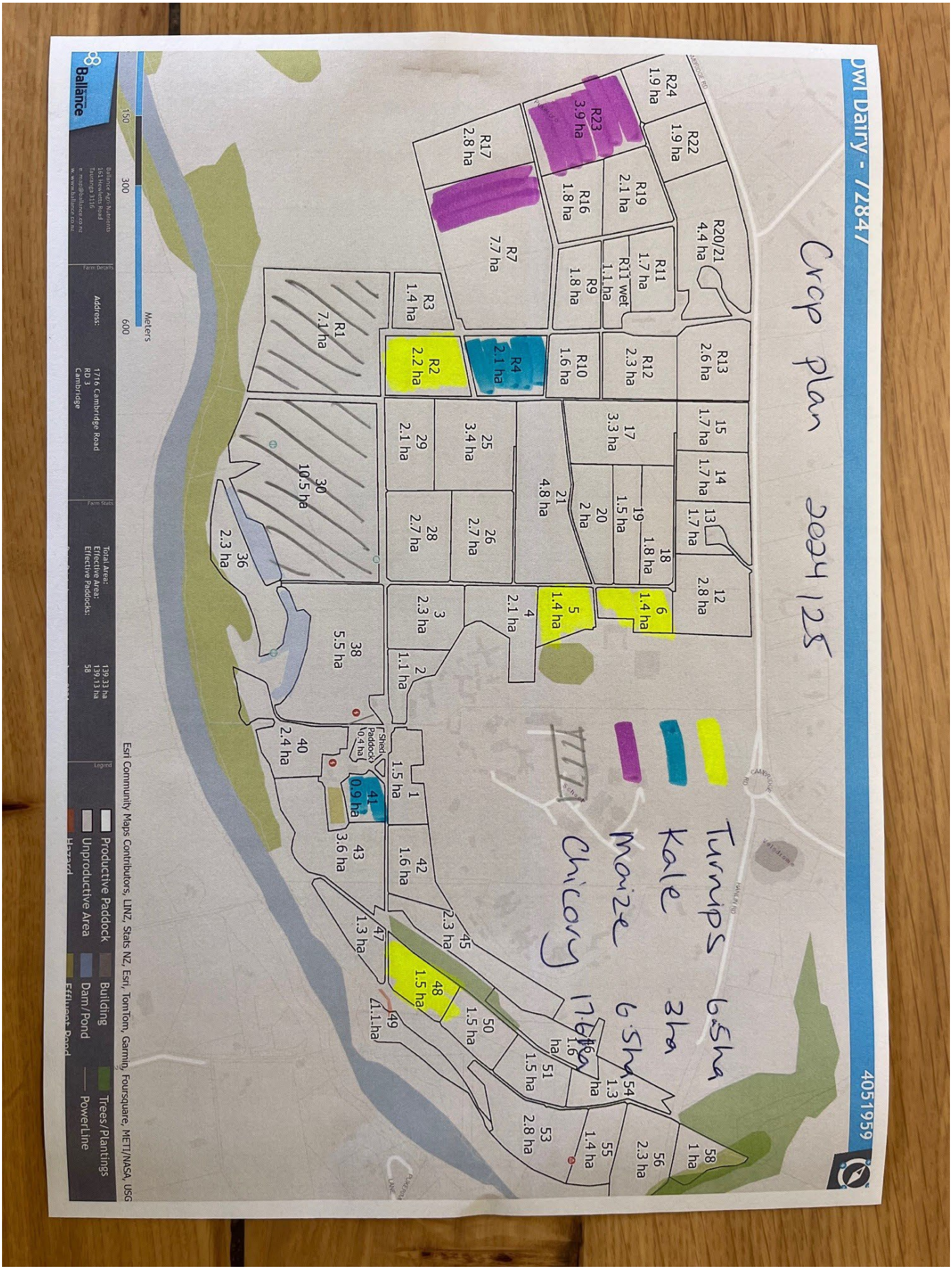
The calves are behind a single wire and have water troughs in each break, with shifts every 2-3 days to reduce labour required.

Calves gain on average 0.7-0.78 kg lwt/day, leaving the farm well above target weight on 1st May.

Graphic 2.11: Comparison of calves at home between 2020-2023

	2020	2021	2022	2023	2024
Number of calves	96 on leased dairy runoff	79 On dairy platform	69 On dairy platform	70 On dairy platform	90 dairy heifer and 55 dairy beef on land transitioning into dairy pasture
Area of chicory	4.7 ha	7.1 ha	7.89 ha	7.89 ha + Italian + Red Clover	Up to 17ha
Supplements	19.1 t DM grass silage 11.1 t DM PKE 3 t DM pasture	20.3 t DM grass silage 17.8 t DM PKE 4.6 t DM pasture	4.7 t DM grass silage 6.7 t DM PKE	Started feeding PK and silage mid February. Calves removed from crop 22nd Feb.	
Supplements per calf	345 kg DM/calf	540 kg DM/calf	165 kg DM/calf		
Approximate cost/head/week	$9.30	$14.09	Est. $11.15	Est < $5.00	
Weight	224 kg on 15th April	235 kg on 30th March	232 kg on 5th April	226 kg on 11th April	

Graphic 2.12: Crop plan for 2024/25 season



3.0 ENVIRONMENT

Graphic 3.1: Fonterra Farm Insights report 23/24

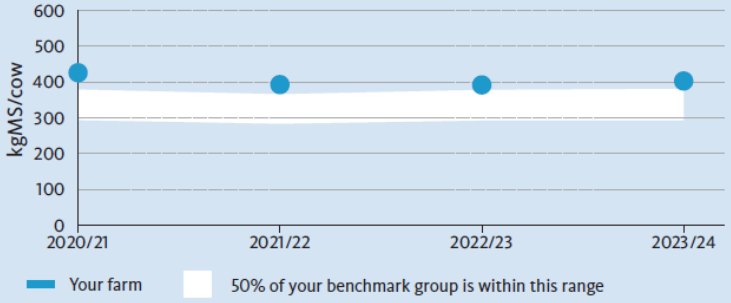
Your farm's big picture view

Success looks different to everyone. By looking at key trends over time, you can start to build a bigger picture of sustainability on your farm.

Production per cow

Your farm is benchmarked against other Waikato System 2 farms.

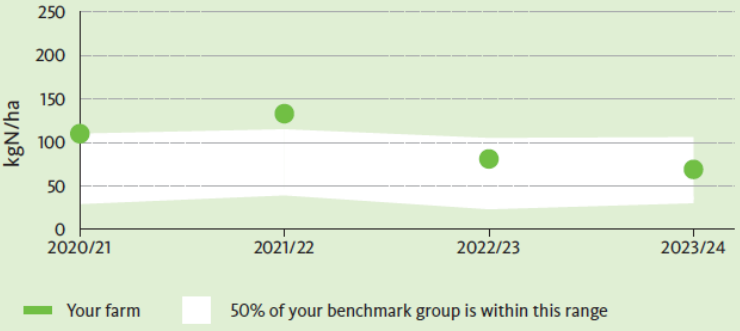
Higher production per cow with the same inputs, like feed, can mean emissions produced are spread across extra milk solids. That's good for lowering emissions intensity.



Purchased Nitrogen Surplus

Your farm is benchmarked against farms in the Waikato region with milk production between 1001-1200 kgMS/ha.

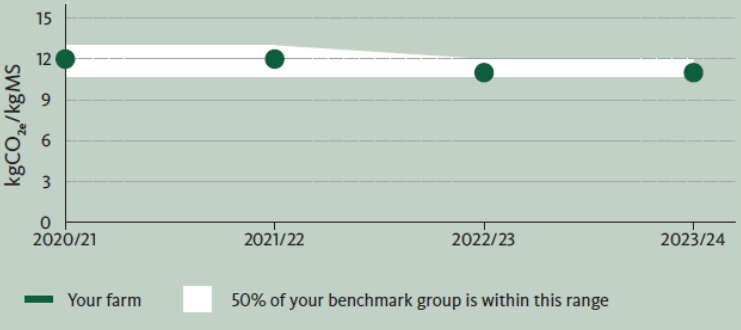
Surplus Nitrogen in your system is at risk of being lost to the environment. See more on page 10.



Greenhouse Gas Emissions per kgMS

Your farm is benchmarked against others in the Waikato region.

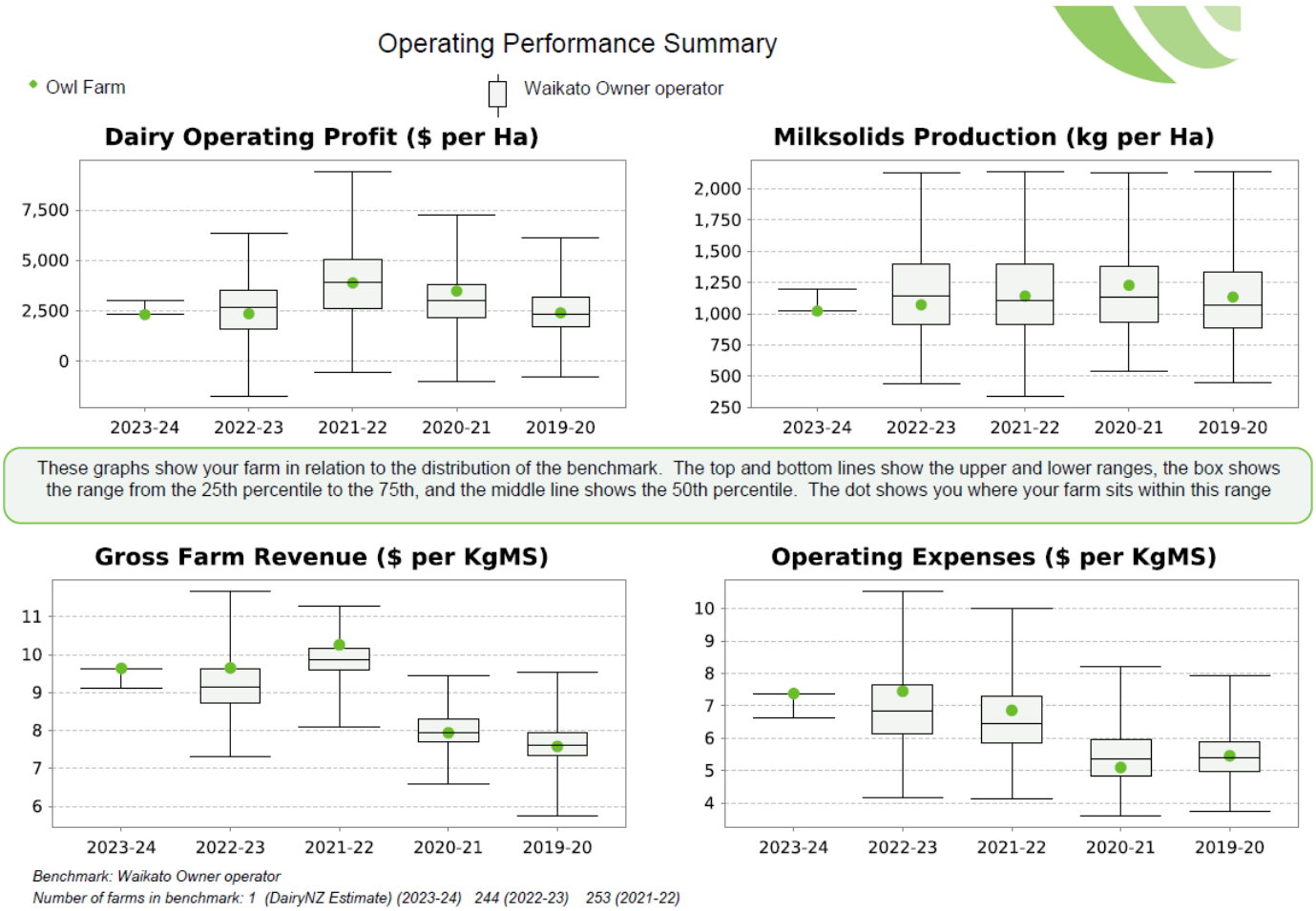
You can find a more detailed breakdown of your emissions on page 9.



Graphic 3.2: Overseer summary trends over time

4.0 BUSINESS HEALTH

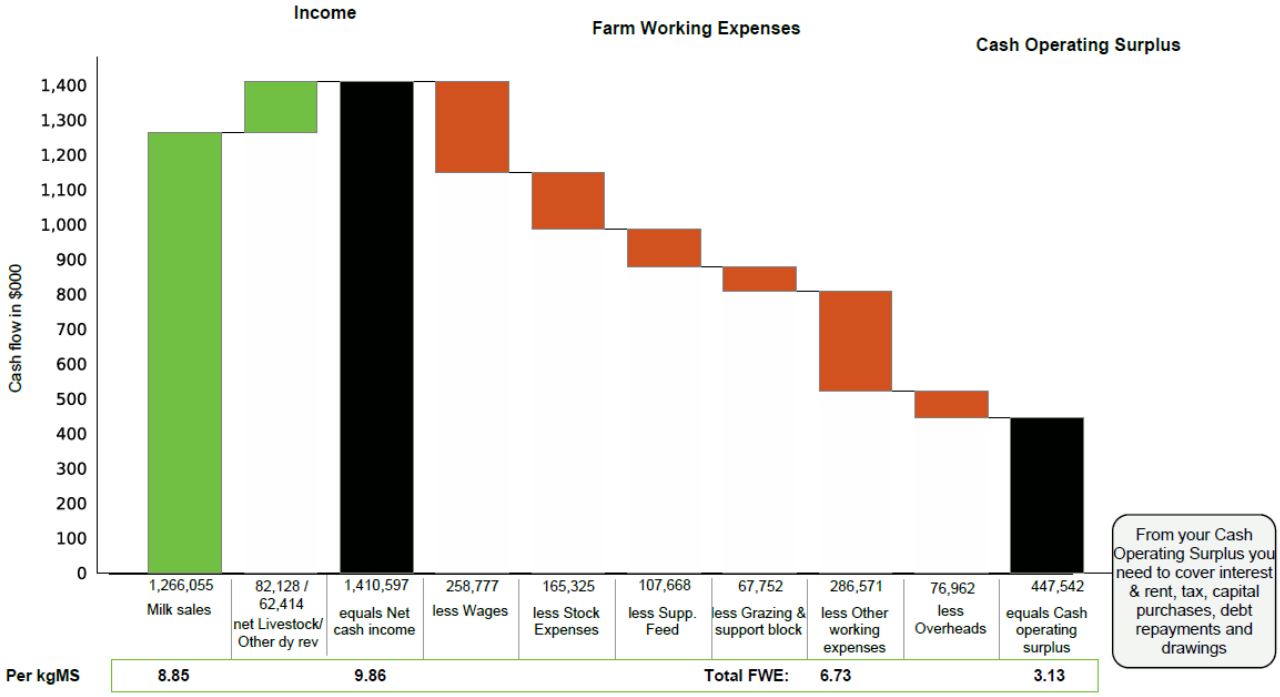
Graphic 4.1 DairyBase 2023/24



Notes:

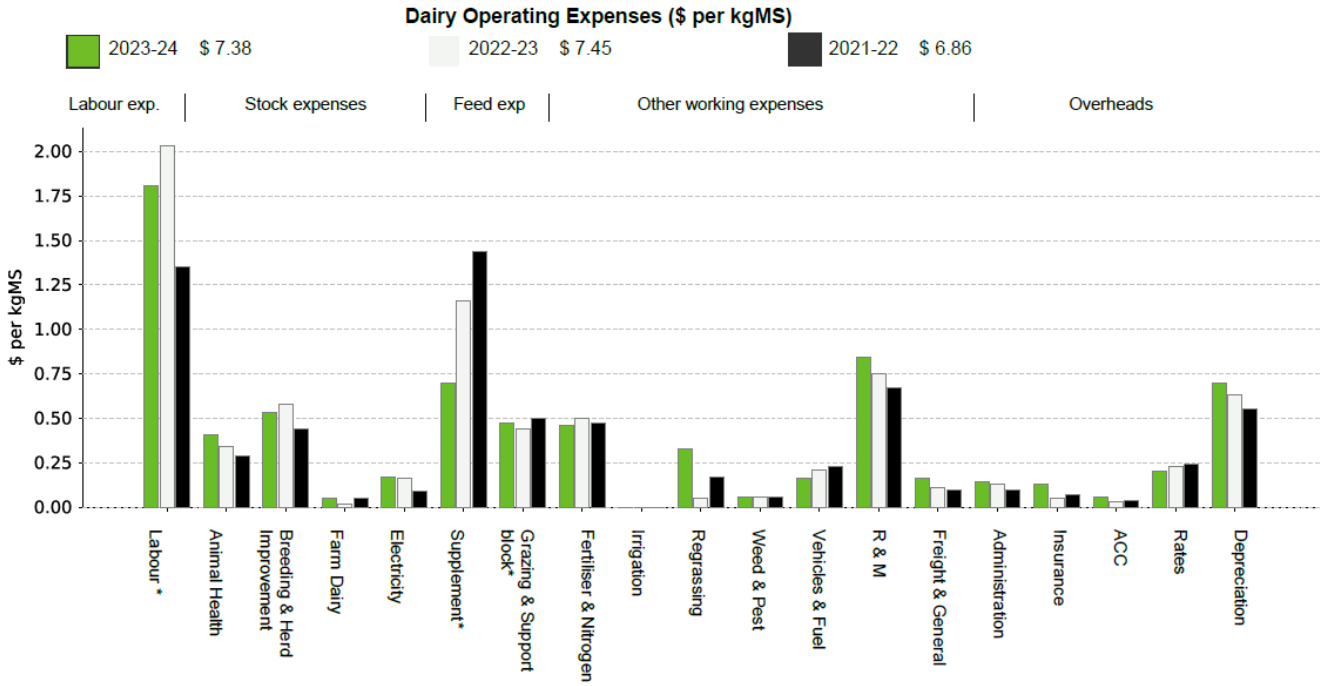
Where did my cash go?

This cash flow chart summarises the in and out flows of cash during the season to an operational level. Green bars indicate cash coming into the business, orange bars indicate cash leaving the business and black bars are the sub totals at different stages. Use the descriptions at the bottom to guide you through the flow of cash



How do my costs compare over time?

This chart shows the dairy operating expenses per kg milksolids over time. Non cash adjustments* are included in labour, feed and owned support block to enable comparison across seasons



Notes:

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Providing knowledge.
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21 November 2024

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