



St Peter's School/Lincoln University
Demonstration Dairy Farm

FARM FOCUS DAY

Thursday, 18 March 2021

Season Update

Tom & Jo talk about making the most of the Autumn. Managing feed and BCS to achieve targets and set up for success next season.

What have we learnt about our reduced 6-week in-calf rate?

How did the summer crops perform?

How are the calves growing on chicory? Will we do it again?

Efficient N use

Ian Power from Ballance steps us through using My Pasture Planner to reduce total N used and gain greater efficiency at Owl Farm.

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 for the purpose of the Focus Day.





CONTENTS

Contents.....	2
Owl Farm Strategy.....	3
Health and Safety.....	4
Owl Farm Wagon Wheel KPIs	6
Owl Farm Multi-Year Snapshot	7
Farm Performance.....	8
Climate	10
Rainfall	11
Growth Rates	12
Pasture Cover	12
Production.....	13
MS/ha from home-grown feed	14
Feed supply and demand graph.....	15
Summer crops	16
Animal Wellbeing.....	22
Body Condition Score.....	22
SCC (Somatic Cell Count).....	24
Lameness.....	25
Reproductive performance	26
Livestock growth	31
2019 replacement heifers	31
2020 Replacement heifers	32
Analysis of costs to grow Heifers at home	32
Business Health	35
New grass plan.....	37
Planning for Plantain and Clover success	38
My Pasture Planner	40
Fit to Feed Demand	42
Optimise to N budget.....	42
Best fit for Owl Farm	43



OWL FARM STRATEGY

1. Vision

a. Dairy Farm

- To apply proven research, utilising good on-farm practice and scientific monitoring for the farm to be an exemplar in dairy production, financial, environmental and people performance, while maintaining the highest standards of health and safety.

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.

3. Farm Development Stages

a. Stage 1 Objective (2015/16 – 2017/18)

Established credibility by addressing current issues and performance, whilst setting up the farm for future development. During this stage, the farm operated a pasture-based system, with tactical supplementation strategies, based largely on existing infrastructure, to optimise profit while developing a resilient farm system.

b. Stage 2 Objective (2018/19 – onwards)

Testing and investigating, in conjunction with partners, innovative strategies to lead sustainable profit. The farm system will be developed over years 1-3 and reflect demonstration requirements of industry that are relevant and appropriate at that time point.



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
- Other vehicle 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

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

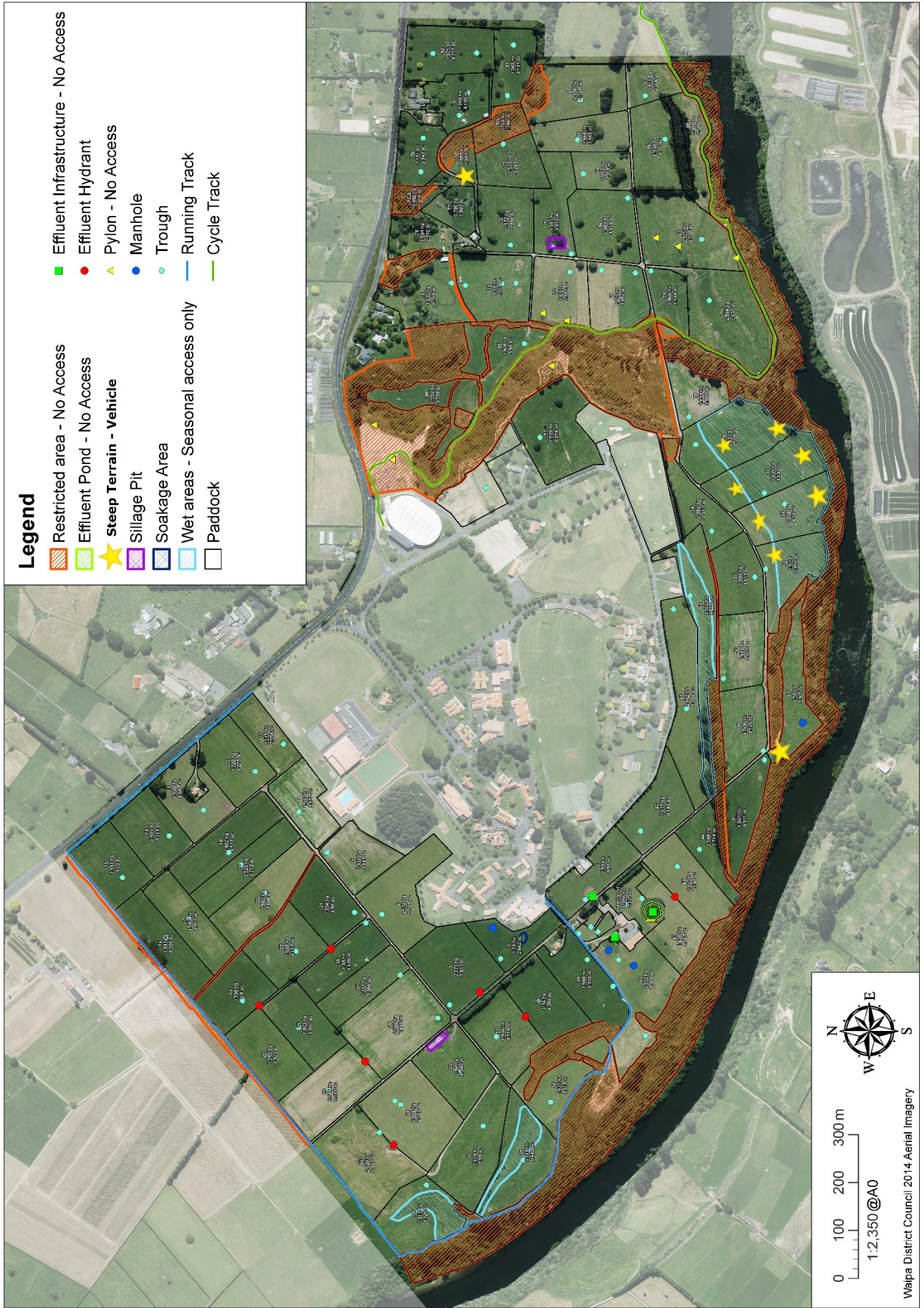
Farm Staff

- Jo Sheridan – Demonstration Manager 021 712 680
- Tom Buckley – Farm Manager 021 058 4916

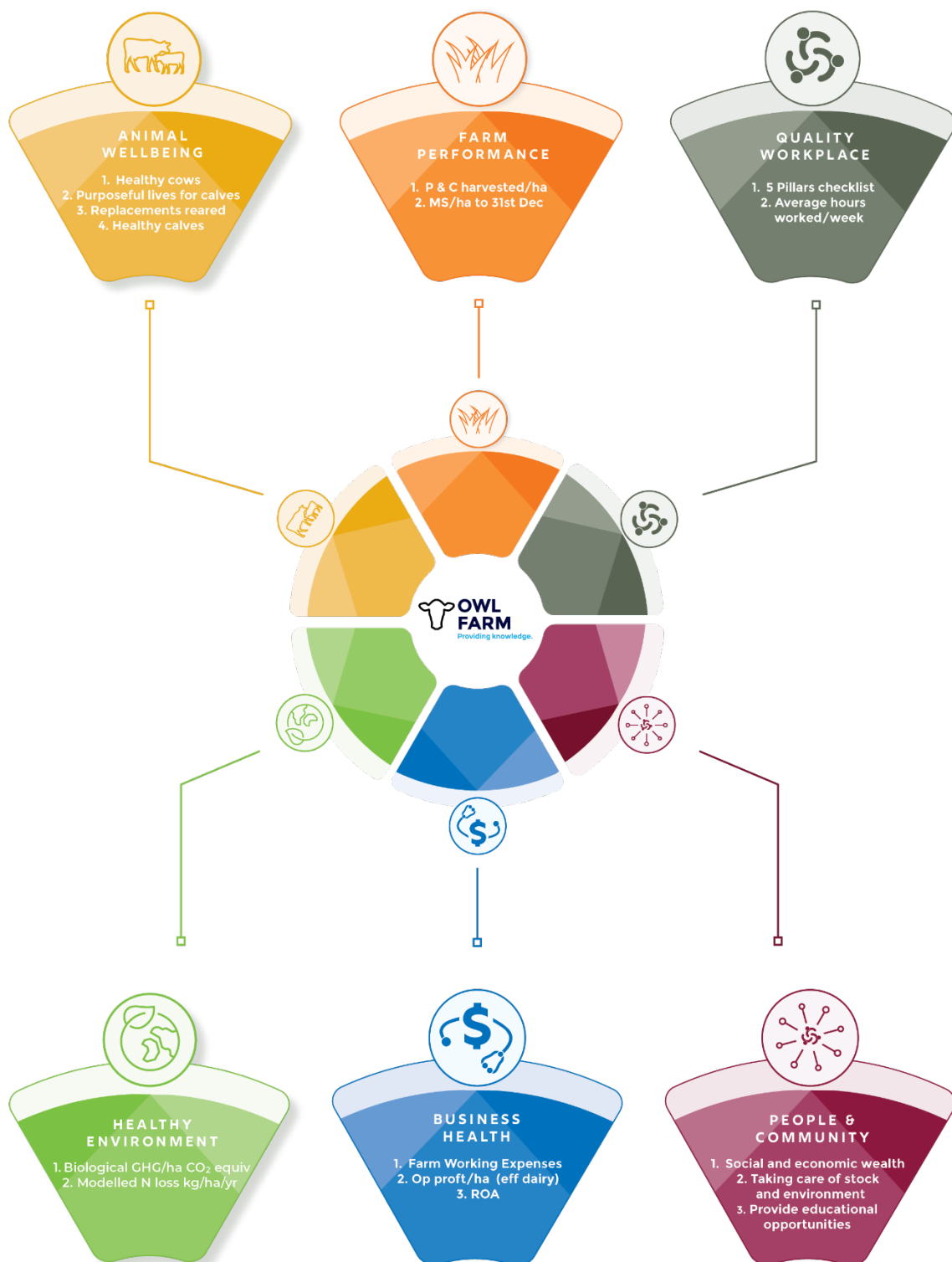
Safety Equipment Location

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

By entering Owl Farm and signing in at registration, you are acknowledging 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 WAGON WHEEL KPIS



OWL FARM MULTI-YEAR SNAPSHOT

Year		2017-2018	2018-2019	2019-20
Physical Info	Total farm area	164	164	164
	Effective area (ha)	148	147.3	147.5
	Effective area leased (ha)	18	18	22
	Leased run off (ha)	5	3+12	5+5
	Cows wintered	441	419	421
	Peak cows (1 Nov)	418	406	405
	Peak stocking rate cows/ha	2.82	2.76	2.75
Production	Total kg MS	168,169	169,359	167,185
	MS/cow	402	417	413
	MS/ha	1,136	1,150	1,133
	MS/ha from homegrown feed	978	1,013	931
	MS as % liveweight	86.5%	89.7%	86%
	Average SCC	146,000	172,000	162,000
Feed and Inputs	Feed grown T DM/ha	17.5	15.7	13.9
	Feed harvested T DM/ha (actual kg)	13.6	14.1	12.2
	Feed harvested T DM/ha (@11MJ ME/kg DM)	13.7	13.2	
	Supplements imported T DM/ha	2.3	2.1	3.0
	Supplements imported T DM	335	306	440
	% diet imported	11%	11.8%	25%
	% of farm cropped & harvested (silages)	33%	93%	45%
	Nitrogen applied/effective ha	150kg	150kg	139kg
Financials	Gross farm revenue/kg MS (including stock/dividend)	\$7.56	\$6.86	\$7.58
	Cash farmgate milk price/kg MS (Dairybase)	\$6.39	\$6.43	\$7.11
	Accrued farmgate milk price /kg MS	\$6.66		
	Stock sales/kg MS	\$0.54	\$0.43	\$0.37
	Dividend/kg MS	\$0.36	\$0.00	\$0.00
	FWE/kg MS	\$4.28	\$4.41	\$4.96
	OPEX/kg MS (inc dep ⁿ & feed inv)	\$4.59	\$4.72	\$5.46
	Op Profit/ha actual payouts (cash milk rev) Dairybase	\$3,096	\$2,482	\$2,405
	Op Profit/ha actual payouts (accrued milk rev)	\$3,446	\$2,395	
	Op Profit/ha @ \$6.00 farmgate milk price (no div)	\$2,102	\$1,922	
	Opening debt/kg MS held	\$21.23	\$23.02	\$21.61
Enviro	Estimated N loss kg/ha	35	35	33
	Estimated P loss kg/ha	0.8	0.9	0.8
	GHG loss/ha Overseer FM kgCO ₂ e/ha	11,900	11,740	11,264
	Biological GHG/ha (methane + nitrous oxide)	9,824	9,361	9,030
	N conversion efficiency	24%	24%	25%
	Cowshed	36 Rot	36 Rot	36 Rot
	Feed infrastructure	NIL	NIL	NIL
	Herd BW/PW	112/135	119/153	159/186
	Industry BW/PW	72/93	64/73	93/117
	Effluent storage	New lined pond		
	% farm effluent applied to	51 ha 34%	51 ha 34%	51 ha 34%

FARM PERFORMANCE

We started the 2020 season with a warm dry winter and early spring. Good grazing conditions have seen excellent feed utilisation, less pasture damage, and less wear and tear on machinery. Although air temperatures have been somewhat average, the significant trend is much higher soil temperatures and lower soil moisture levels. This is supported by low rainfall with only 601mm to the end of February compared with our 5 year average of 884mm.

The new 600mm soil moisture probe has given us some valuable insights into the predicted pasture growth for the farm. We were able to identify in spring that we were not going to produce the normal 80 ha (or 180 t DM) surplus and had only harvested 118t DM. With calves on farm requiring 16t DM the decision was made to purchase 88t of silage off farm. At the same time, we decided to secure 100t of our budgeted 200t of PK for \$306 plus delivery. With calves requiring 14t of this PK we were still short 110t in the feed budget. With La Nina forecast we decided to secure another 60t DM in grass silage (to help meet FEI requirements) which left us with an exposure of 54t DM of PK to buy on the spot market if needed. We have used 132 t PK to the end of February, with expected total being 160t PK by the end of the season. There is 130t of silage left on farm (with 50-70t DM earmarked for the winter/spring period).

With empties gone, this leaves us with another month of silage feeding before all cows that remain in milk need to be on pasture only diet.

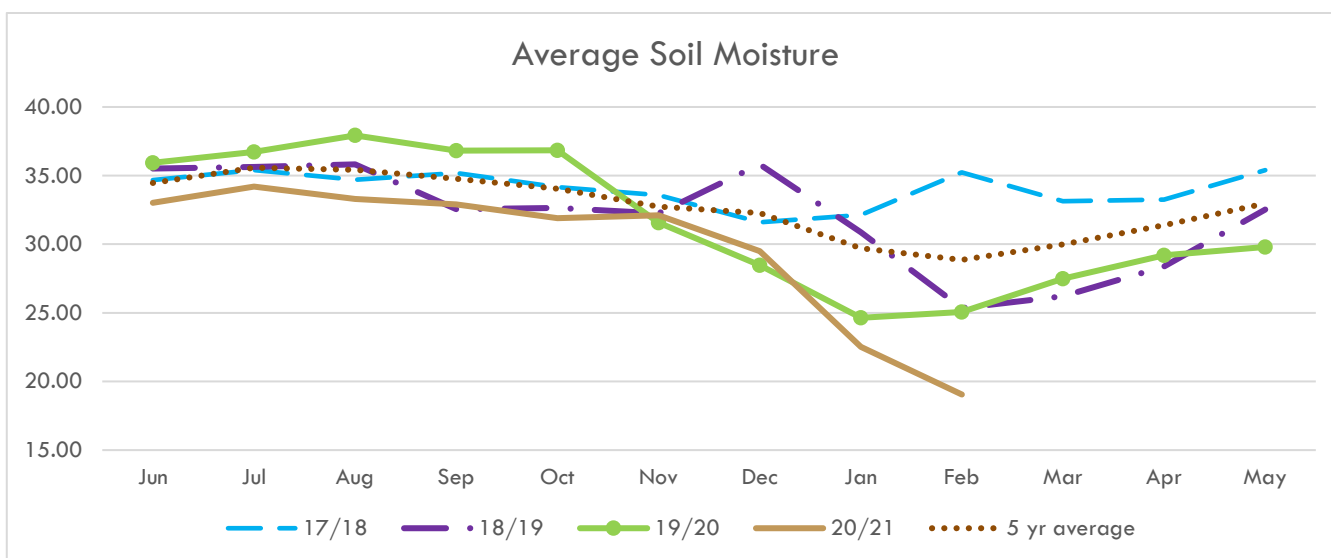
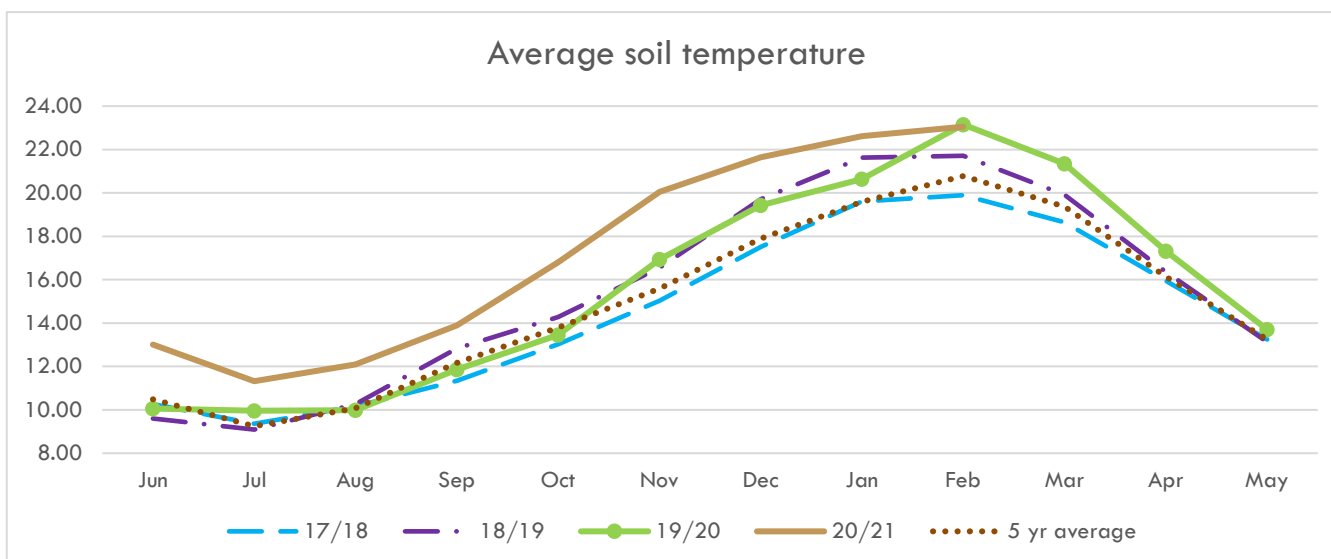
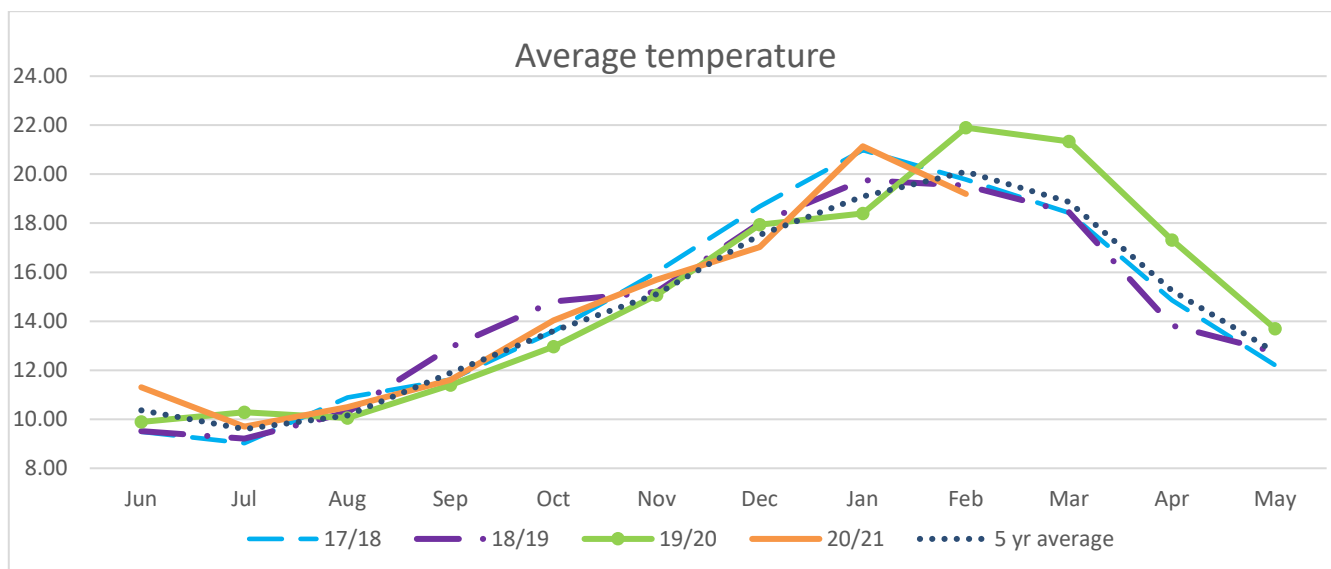
Only 76 Units of N have been used to date, so we will be applying nitrogen in March and April once pastures are growing well again.

Feed summary table

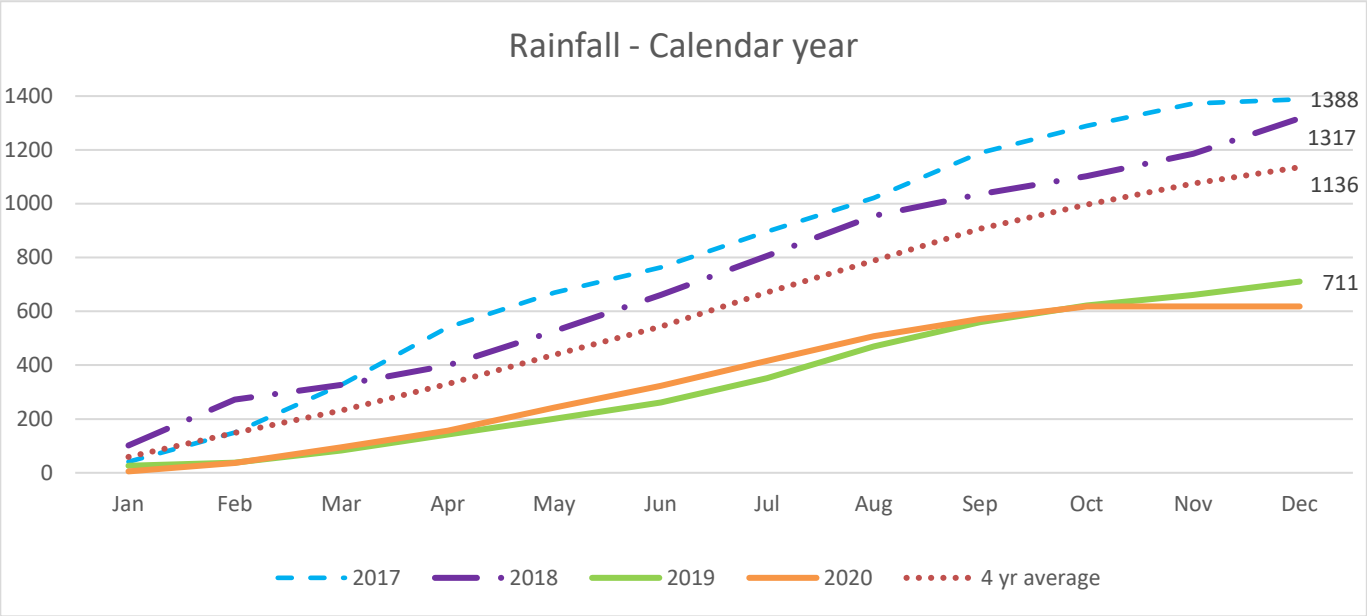
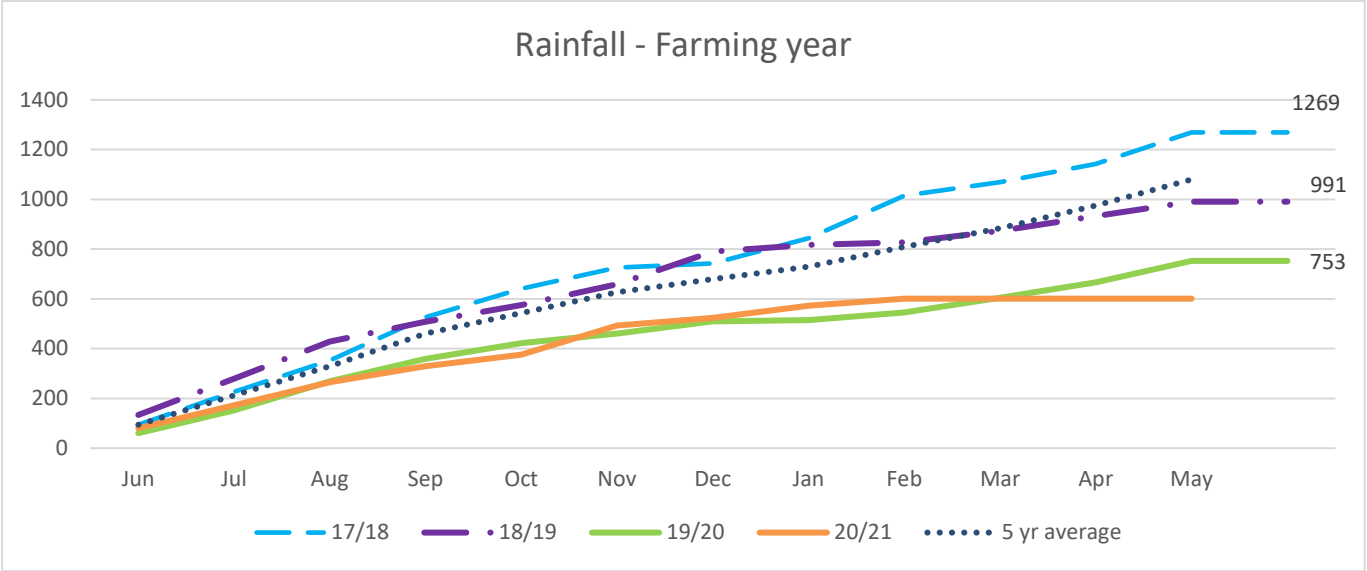
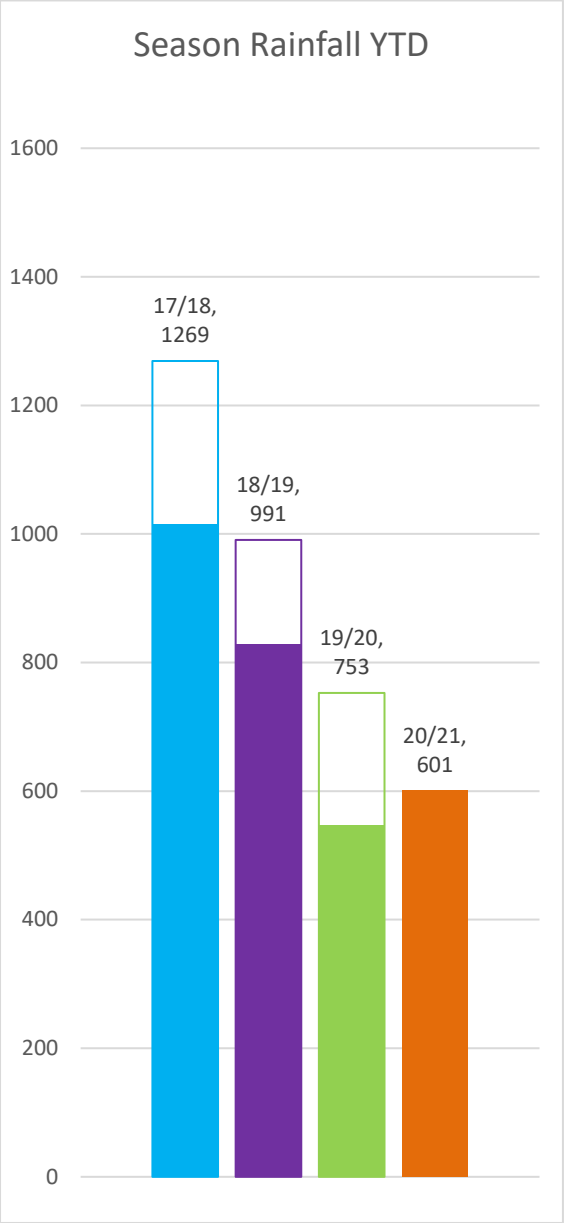
	2020/21 season	Budget	2019/20 season
Homemade silage	118	180	140
Purchased silage	124	33	90
Purchased PK	144 (160 t ww)	180 (200 t ww)	183 (203 t ww)
Purchased molasses	7.5 (10 t ww)	0	0
Homemade hay	7.8	9	6.3
Purchased hay	2.25	0	6
	403 t DM	402 t DM	425 t DM
Change in inventory	+40 increase	No change	-100 decrease

	Season to date 28/02/2021	2017-2018	2018-2019	2019-2020	2020-2021
Stock	Milking Platform	148	147	147	144
	Cows on farm	410	395	383	385
	Peak cows	418	406	405	405
	Peak stocking rate	2.82	2.76	2.75	2.81
Production	Total kgMS Season to date to factory	144,909	152,670	151,268	150,443
	MS/cow Season to date	347	376	374	371
	MS/ha Season to date	976	1,036	1,026	1,045
	MS/ha from homegrown feed to date	868	941	914	913
Feed and Inputs	Average Pasture Cover 1 June	2,256	2,430	2,516	2,517
	Pasture growth rates total TDM/ha	14.0	13.3	10.9	11.9
	Actual pasture grown to graze and harvest as silage excl area sprayed out in crop	12.8	12.3	10.2	10.6
	Total pasture supply TDM/ha	12.8	12.3	10.2	10.6
	Yield of Crop grown per total farm /ha	0.8	0.8	0.5	0.7
	Winter homemade silage on hand fed	0.2	0.8	0.6	0.1
	Imported Supplements fed/ha	1.6	1.2	1.4	1.5
	Total Feed supply TDM/ha	15.3	15.1	12.7	12.8
	Homegrown grass eaten TDM/Ha (grown this year)	9.2	8.4	7.9	8.3
	Homegrown silage grown and eaten this year	0.0	0.3	0.5	0.0
	Crop eaten per total farm/ha	0.7	0.7	0.5	0.6
	Homegrown feed EatenTDM/ha (grown this year)	9.8	9.5	8.9	8.9
	Silage harvested TDM/ha Season to date	1.1	1.6	1.0	0.8
	Total Homegrown feed Harvested TDM/ha	11.0	11.1	9.8	9.7
	Winter homemade silage on hand eaten	0.2	0.6	0.5	0.1
	Imported Supplements Eaten TDM/ha	1.2	1.0	1.1	1.3
	Total Feed eaten this year (includes only silage fed) TDM/ha	11.2	11.1	10.5	10.2
	% Feed eaten grown on farm	89%	91%	89%	87%
	Feed conversion Eff (kgDM/kgMS eaten)	11.5	10.7	10.2	9.8
	Nitrogen Applied/effective ha	122	93	102	77

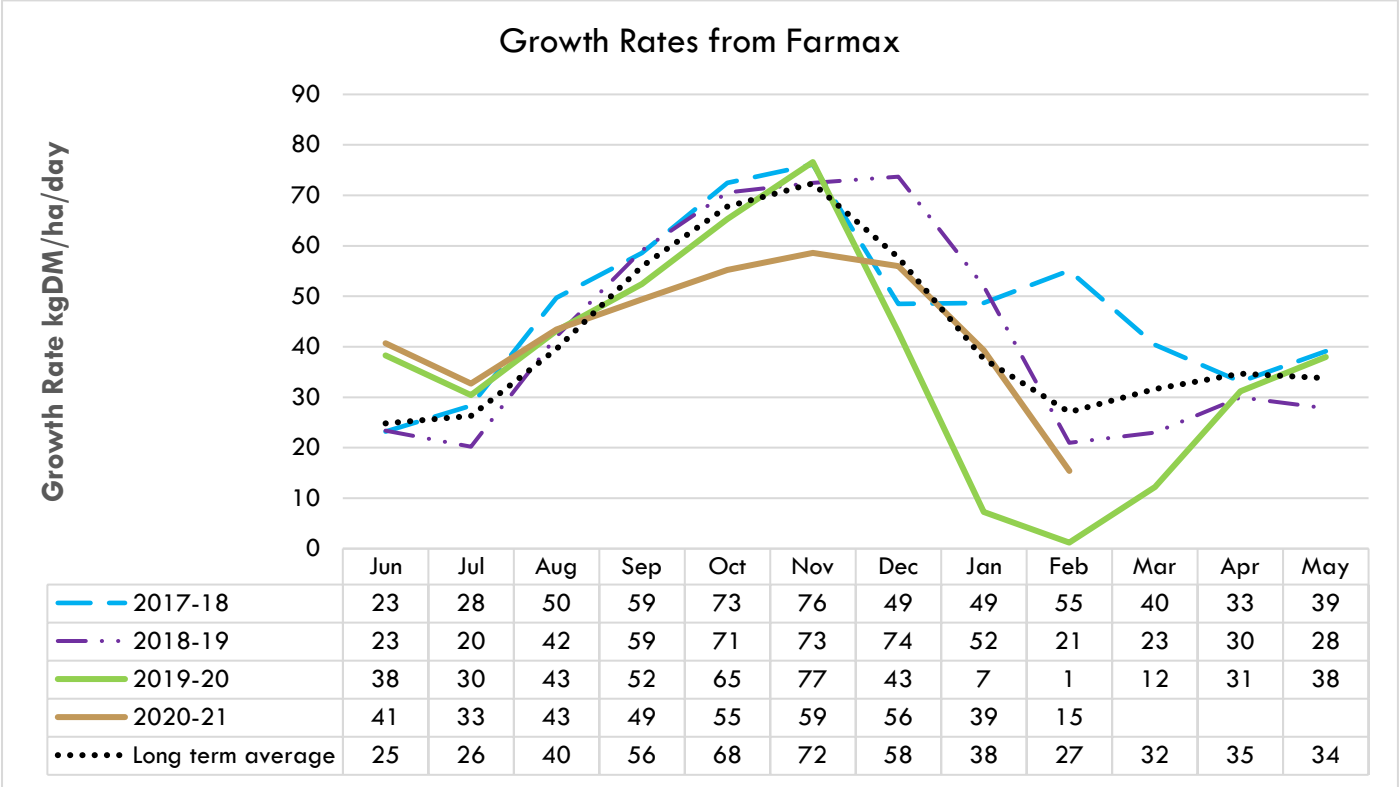
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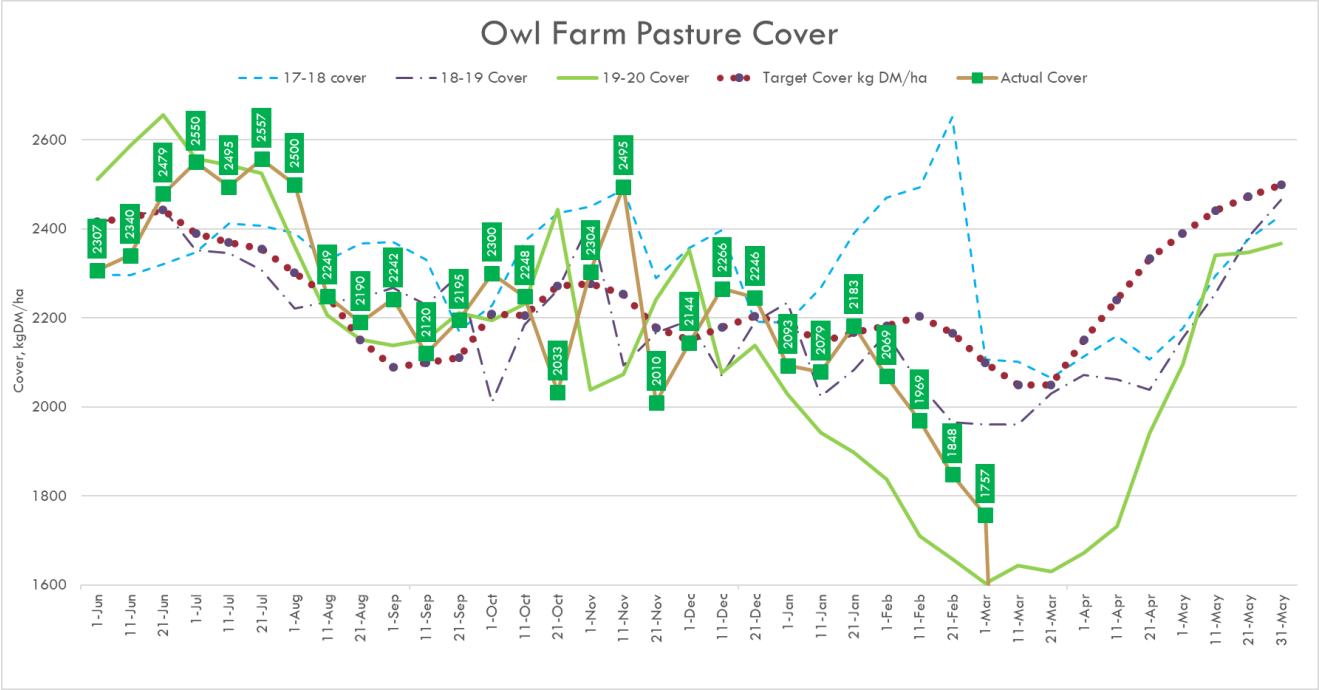
RAINFALL



GROWTH RATES



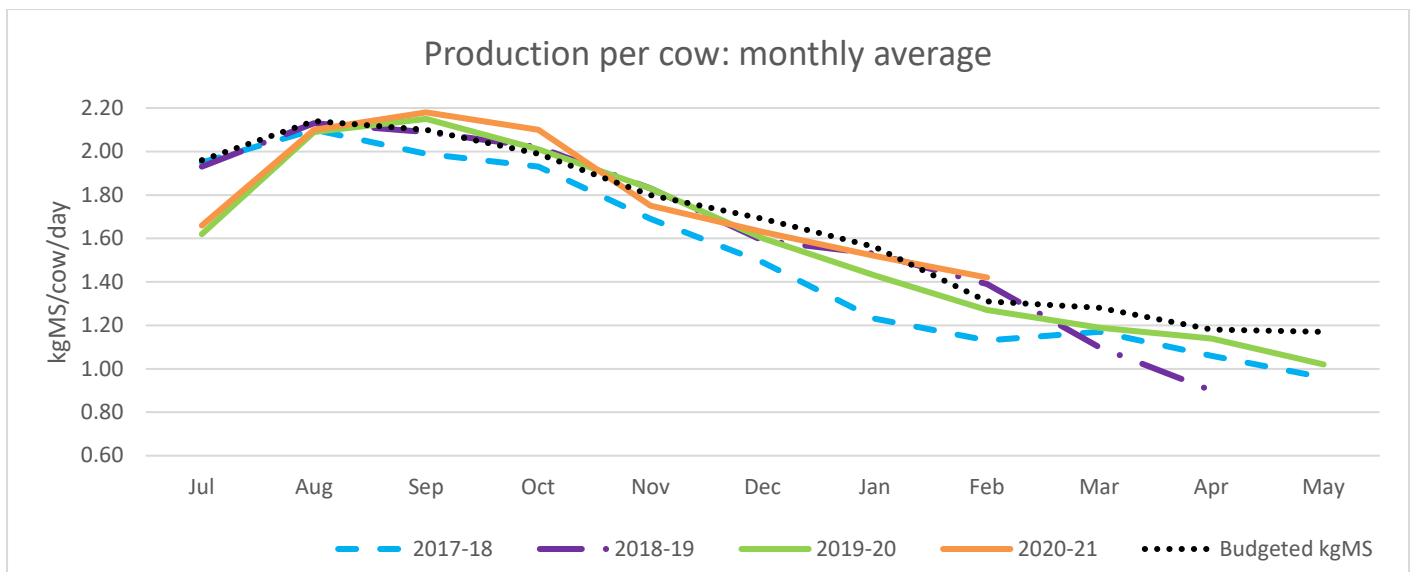
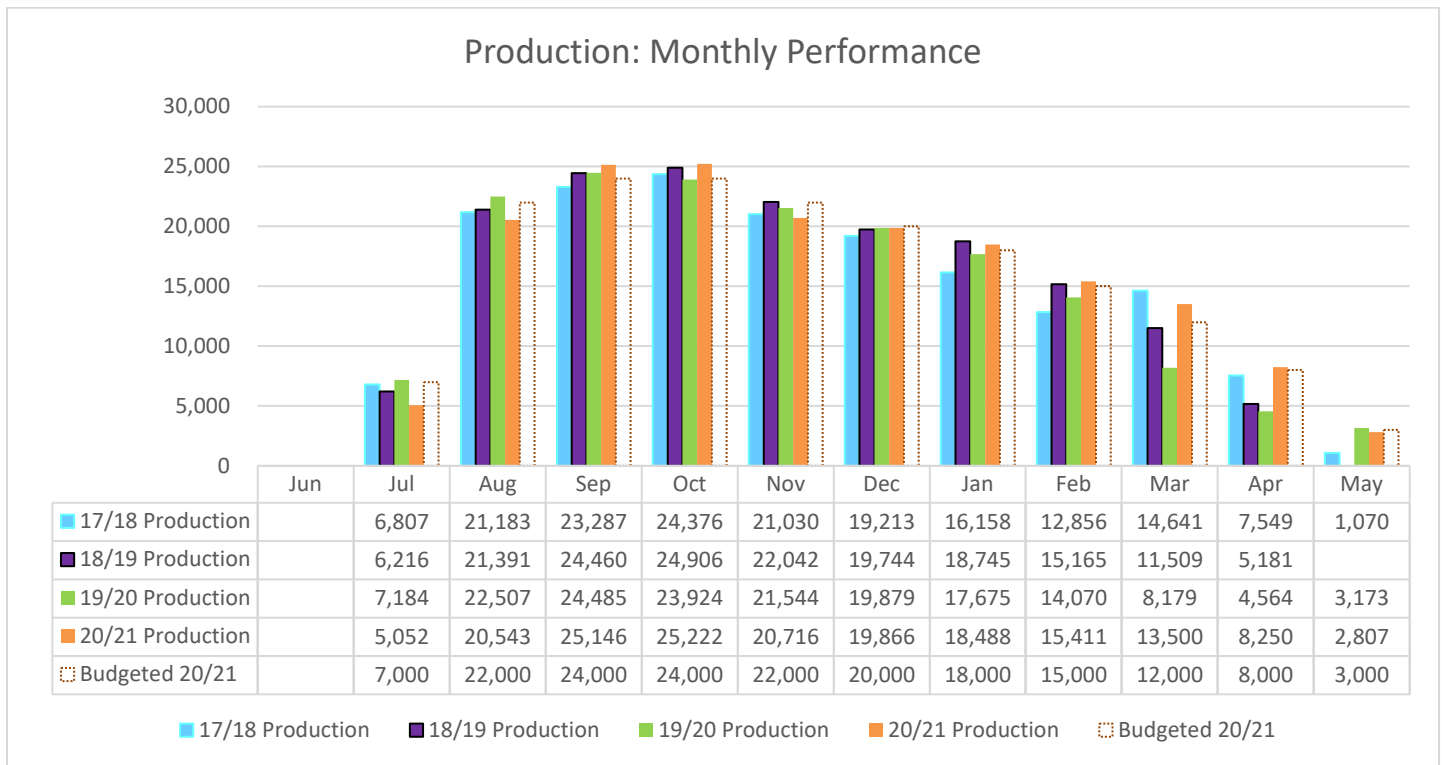
PASTURE COVER



MILK PRODUCTION

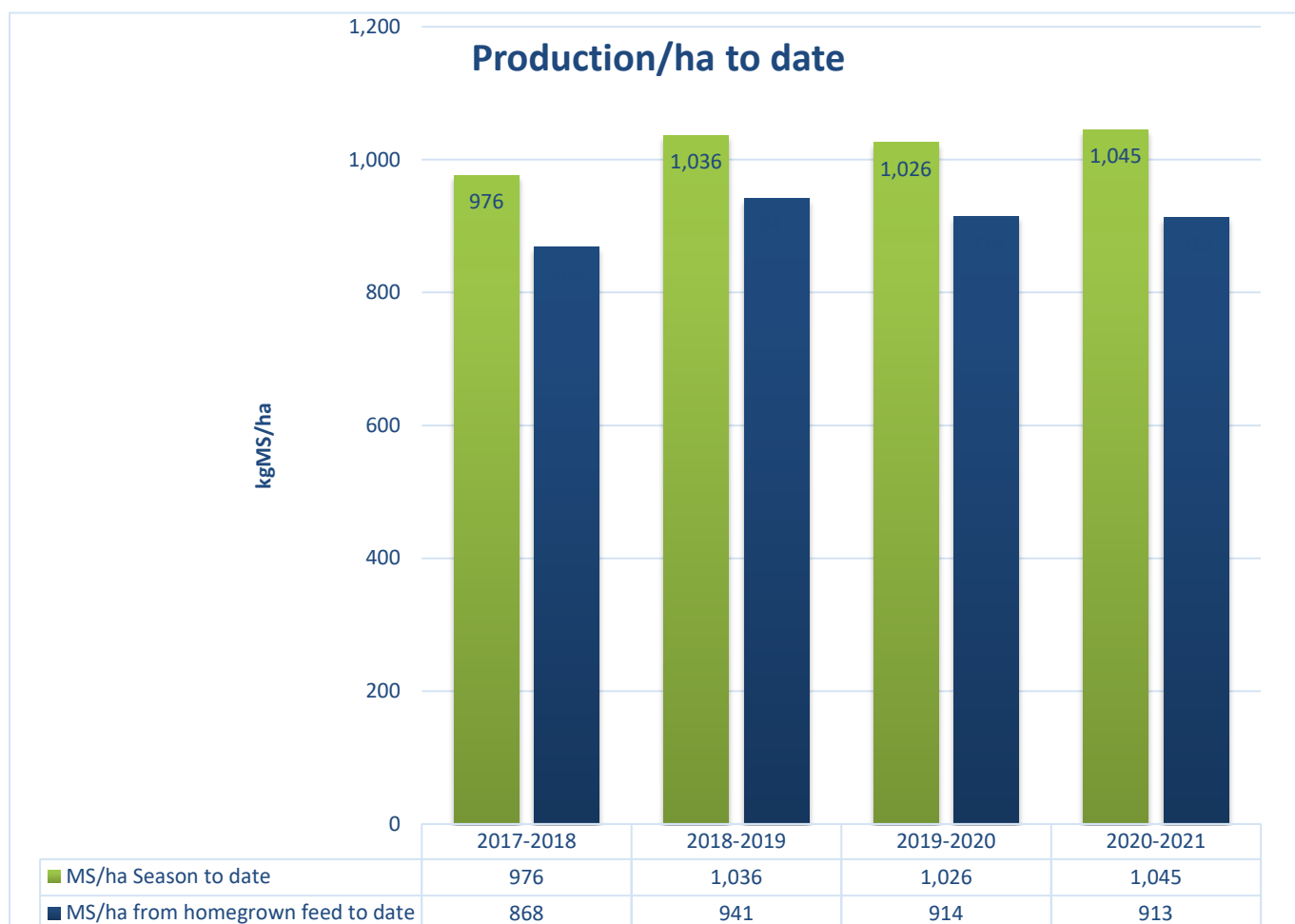
December production was back on track, January was 4.6% ahead, February 9.5% ahead and we are currently on par with last season's production. As at the 5th March we have produced 152,437 kg MS (1058 kg MS/ha and 376 kg MS/cow). Farmax modelling shows, with excellent crop yields, full silage bunkers and great cow condition, we are expecting to exceed monthly targets through to the end of the season. This will put us back on track to achieve 175,000 kg MS. The graph for 2020/21 shows revised targets for March-May production.

March, April and May show predictions to achieve our 175,000kgMS target.

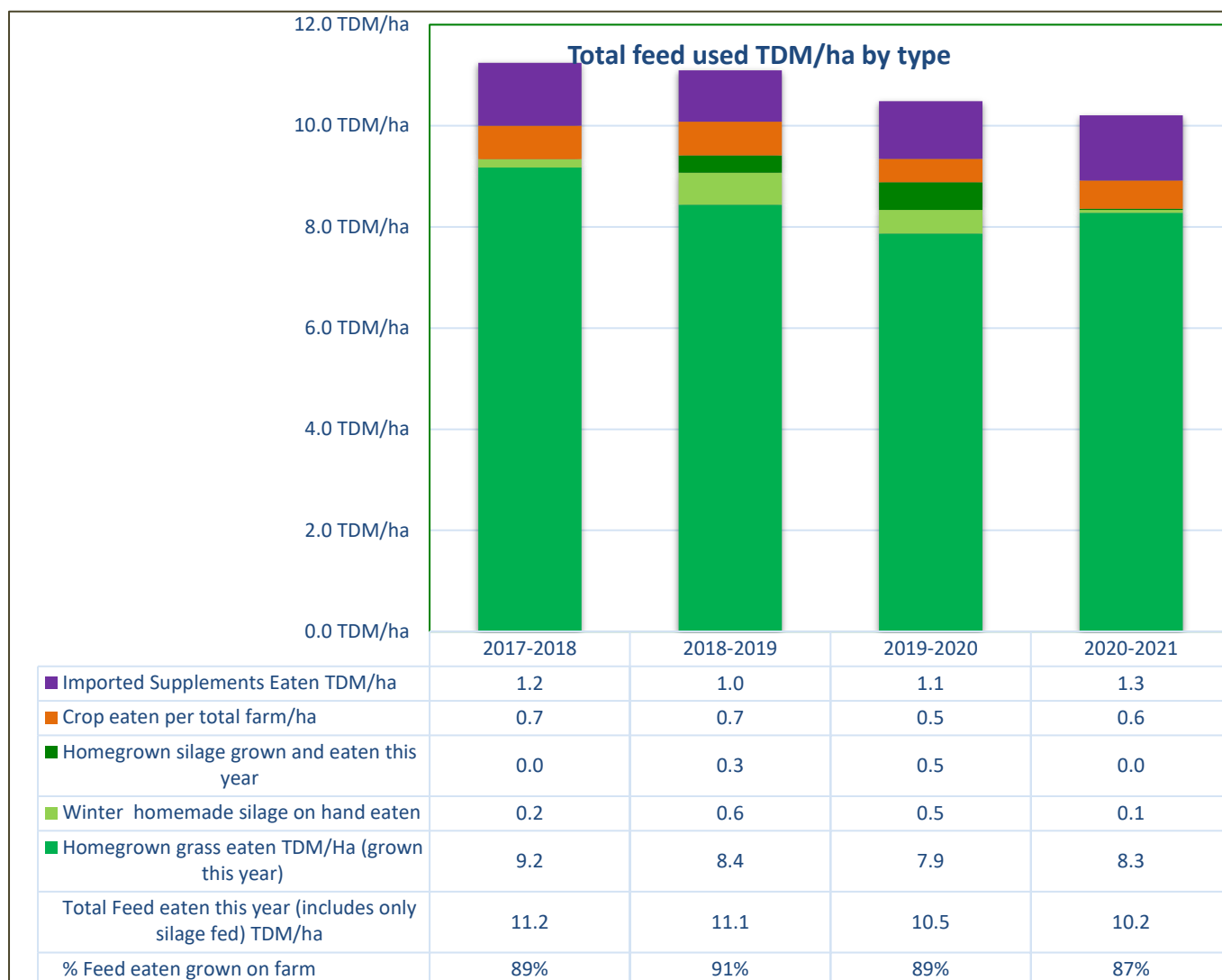


MS/HA FROM HOMEGROWN FEED

Even though total production to the end of February is similar to last season (we have less land this season) we have produced similar MS/ha from home-grown feed. The graph below shows the increased purchased silage with less silage being made this season. Nitrogen use is 76kg N/ha (plus crop N). Less total feed has been eaten, with feed conversion efficiency continuing to improve down to 9.8kg DM eaten/kg MS. This reflects the higher feed quality maintained through the spring.



FEED SUPPLY AND DEMAND GRAPH



SUMMER CROPS

Ha	Variety	Sow date
4.71 (runoff)	Puna II chicory	22 nd September
4.47	Firefly clean crop kale	5 th October
6.55	Toto clean crop turnip	20 th October

If you're growing summer crops on your farm, it's important to understand how your crop has performed and what the crop has cost you.

By knowing the costs involved to grow turnips, we can work out the value of turnips to Owl Farm.

Table 1.0. Cost analysis of turnips at Owl Farm 2020/2021 – Actual costs

				Cost/ha		
	Product	Rate	Per Hectare	Kale	Turnips	YOURS
SPRAYOUT						
	Crucial	2.5	L/ha	\$56	\$56	
	Pulse Penetrant	100	ml/100Lwater	\$2	\$2	
	Dew 600	400	ml/ha	\$8	\$8	
	Spray application			\$42	\$42	
FERTILISER						
	Lime	1.5	t/ha	\$75	\$75	
	Lime cartage and spreading			\$96	\$96	
	Crop Zeal Boron boost (drilled with seed)	230	kg/ha	\$200	\$200	
PLANTING						
	Clean crop kale seed	2	kg/ha	\$385		
	Clean crop turnip seed	2	kg/ha		\$225	
	Pre-emergence spray included in cost of seed					
	Slug bait	15	kg/ha	\$129	\$129	
	Direct drill includes base fertiliser and slot drilling			\$265	\$265	
POST-EMERGENCE						
	Spraying oil	500	ml/100L	\$6	\$6	
	Grass weed spray – Sequence	0.5	L/ha	\$46	\$46	
	Spray application			\$42	\$42	
	Insecticide x 2 sprays	0.5	L/ha	\$92	\$92	
	Spray application x 2 sprays			\$84	\$84	
FERTILISER						
	Spreading Costs (done by Tom)			\$60	\$60	
	SMART FERT N application	300	kg/ha	\$319	\$319	
	Sustain	100	kg/ha	\$72		
TOTAL COST				\$1979	\$1747	

- Costs represent the average over the last 3 years
- For an estimated average of 12,000kg DM/ha, we can turn this into cents per kg DM of turnips (Table 2).
- Divide costs per ha (\$1747/ha) by the average DM yield/ha (12,000kg DM/ha) = \$0.14 or around **14.5c/kg DM turnip grown**

TABLE 2.0. Sensitivity analysis (c/kg DM of crop grown) excluding value of area of summer pasture foregone

	c/kg DM
7,000	24.9
8,000	21.8
9,000	19.4
10,000	17.4
11,000	15.8
12,000	14.5
13,000	13.4
14,000	12.4
15,000	11.6
16,000	10.9

Kale was planted on the 1st October and both the Toto and Bulb turnips were planted on the 12th October. The summer has been kinder this year with early maturing Cleancrop Toto averaging 15.2 t DM and Cleancrop Bulb averaging 12 t DM/ha. Kale crops have averaged 12t DM (early grazed) and an estimated 15t DM (late grazed).

The turnips were grazed first week of January and the kale started 23rd February. Allocation has been approximately 4kg/cow/day.

Cleancrop Toto



Cows grazing Cleancrop Bulb



Limitations of valuing turnip crop based on variable costs required to grow the crop

- If Owl Farm had chosen to not grow a turnip crop, the underperforming paddocks will still have yielded some pasture between the months of October and April.
- When a paddock is put into crop, that pasture can no longer contribute to the feed supply for the farm as it has been replaced by crop. There is an opportunity cost of pasture foregone (that has not been grown).
- We need to value this pasture foregone, when calculating the value of turnips on a cents/kg DM basis.
- Table 3 shows the average monthly pasture production by all Owl Farm paddocks between October and April.
- The poorest performing turnip paddocks produce, on average, **26% less dry matter** when ranked in MINDA Land and Feed pasture. Owl Farm has placed a value on this pasture foregone and included it in the 'cost' or value of crop produced in those paddocks.

TABLE 3.0 Estimated amount and value of pasture grown mid-October to late March on average across *all* paddocks, Owl Farm – Based on ACTUAL pasture growth rates 2015-2018 for Owl Farm

	Average farm pasture growth rates (kg DM/ ha/day) ¹	Days out of pasture	Farm Pasture grown (kg DM/ha) ²	Economic Value (\$/kg DM) ³	Value of Pasture (\$/ha) ⁴
October	67	15	1,005	0.17	170.85
November	71	30	2,130	0.17	362.10
December	61	31	1,891	0.37	699.67
January	45	31	1,395	0.37	516.15
February	34	28	952	0.37	352.24
March	36	25	900	0.37	333.00
Total			8,273 kg DM/ha		\$2,434/ha

TABLE 4.0 Estimated amount and value of pasture grown for run-out *underperforming summer crop* paddocks from mid-October to late March – Based on average Owl Farm pasture growth rates for 2015-2018

	Owl Farm Average	Poor performing Paddocks (-26%) ⁵
Average Pasture Grown (kg DM/ha)	8,273	6,122
Value of pasture (\$/ha)	\$2,434	\$1,801

TABLE 5.0 Sensitivity Analysis (c/kg DM of crop grown) including value of area of poorer performing summer pasture foregone to grow crop (\$1,801/ha)

		c/kg DM	
		Excluding value of pasture foregone	Including value of pasture foregone
Crop Yield (kg DM/ha)	7,000	24.9	50.6
	8,000	21.8	44.3
	9,000	19.4	39.4
	10,000	17.4	35.4
	11,000	15.8	32.2
	12,000	14.5	29.5
	13,000	13.4	27.2
	14,000	12.4	25.3
	15,000	11.6	23.6
	16,000	10.9	22.1

Kale crops cost 28c/kg DM, based on establishment costs of \$1979, pasture foregone of \$1,801 and average yield of 13,600 kg DM/ha



ASSUMPTIONS:

¹ Actual Pasture Growth Rates for Owl Farm, as assessed on weekly basis by Owl Farm team.

² Estimated total amount of pasture grown during the time crop area is sprayed out for turnips then returned to pasture (15th October to 25th March)

³ DairyNZ Economic Values for perennial ryegrass seasonal dry matter production traits used in the 2015/16 Forage Value Index
<http://www.dairynz.co.nz/media/3361791/forage-value-index-handbook-2015-16.pdf>

[2019](#) Handbook updated figures are late spring \$0.16 and summer \$0.35

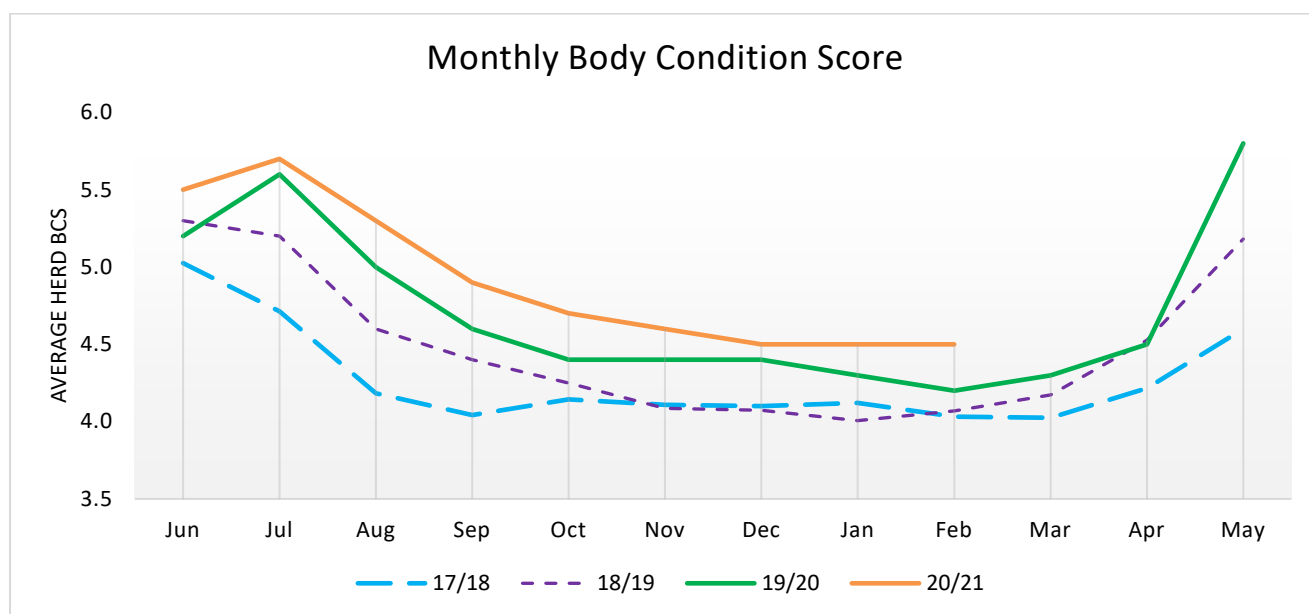
⁴ Value of feed (\$/ha) calculated by multiplying the EV x Pasture grown per hectare per month

⁵ According to the pasture assessment data from MINDA Land & Feed, the poorest performing paddocks at Owl Farm were 26% below average.

ANIMAL WELLBEING

BODY CONDITION SCORE

Dry-off decisions made through last summer have ensured that cows started the season exceeding BCS targets. Even though BCS has been higher than ever all winter/spring, they still dropped 0.8 BCS from Planned Start of Calving to Planned Start of Mating and 1.2 BCS in total before reaching nadir. The cows continued to lose BCS through November which was expected with the high volumes of milk that continued to be produced through September and October on predominantly all-pasture diet. High BCS has meant that we can milk cows through to the end of March before drying off the first 100 light cows.



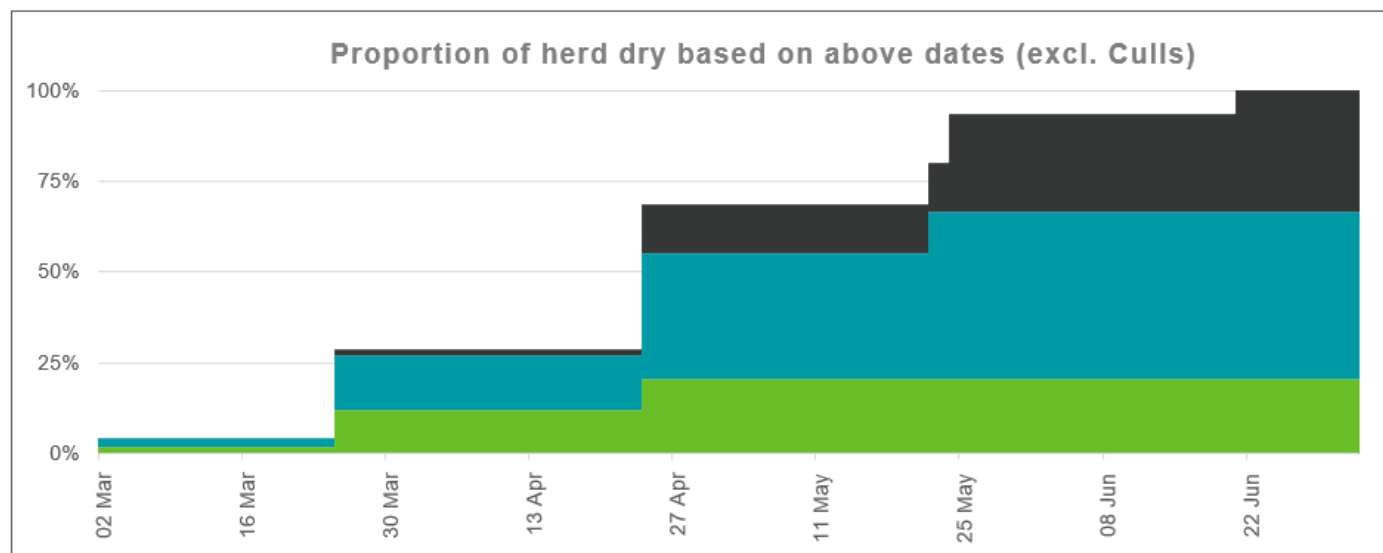
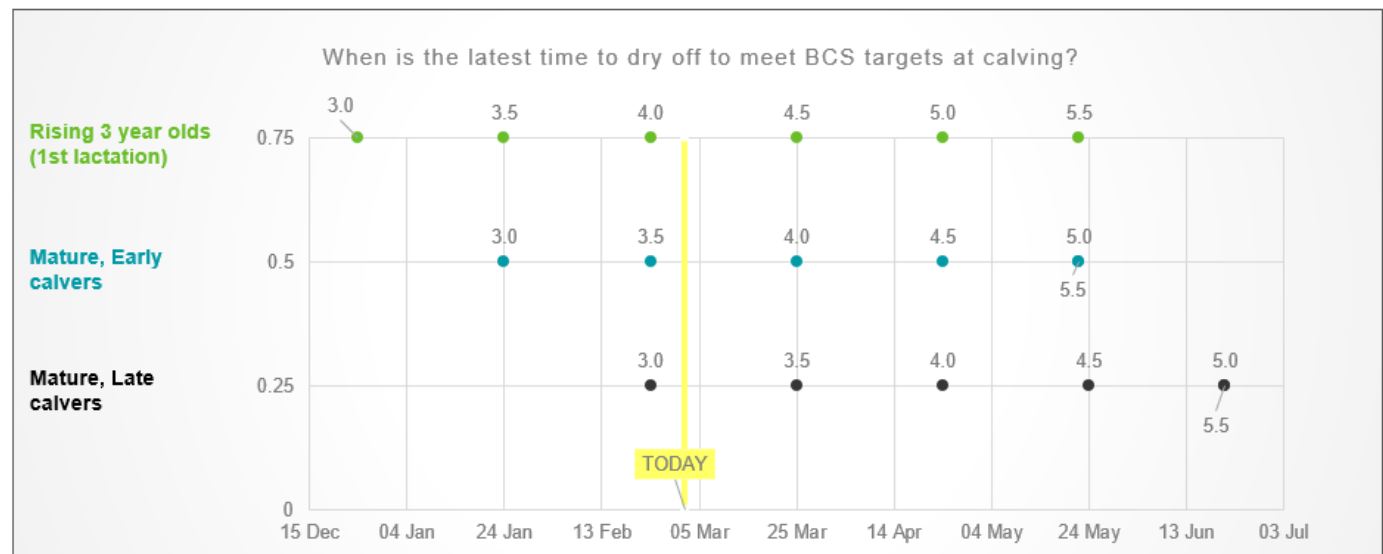
DRY-OFF TRIGGERS AND PROPORTION OF HERD

We use the BCS dry-off calculator to enter individual BCS data, based on age and calving date, to set our dry-off triggers. We have assumed a moderate weight gain of 0.5 BCS/month this year as we are not planning on feeding large amounts of PK to dry cows as we did last year.

We currently have 19 cows that meet dry-off criteria, based on the 11th February BCS. We have decided to keep these in the young herd and add 2 kg PK/cow/day to ensure that herd is maintenance plus, and we expect to have a group of 100 cows that are due to be dried off after the next BCS in late March/early April.

This will leave 250 cows that can stay in milk on OAD, in one milking herd. This ensures that milking, feeding out, feeding calves, shifting fences etc can be carried out by one person throughout April while farm staff take some much-needed annual leave.

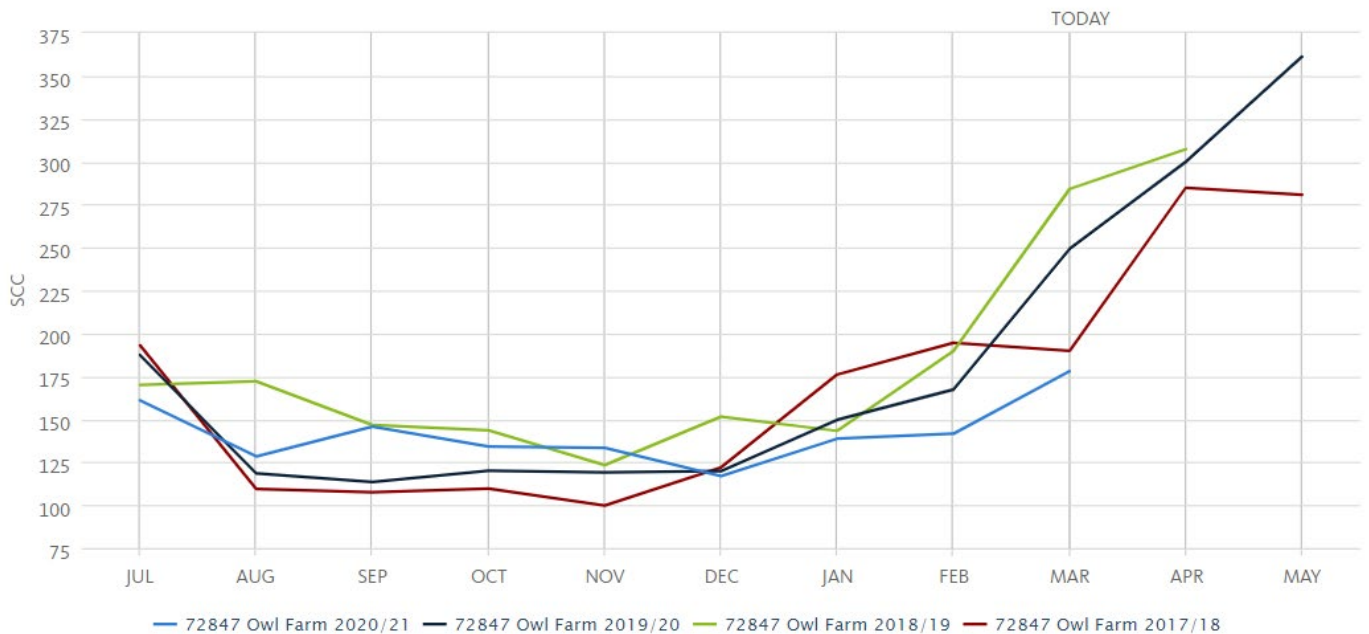
DairyNZ BCS Dry off calculator showing our threshold to continue milking and portion of the herd.



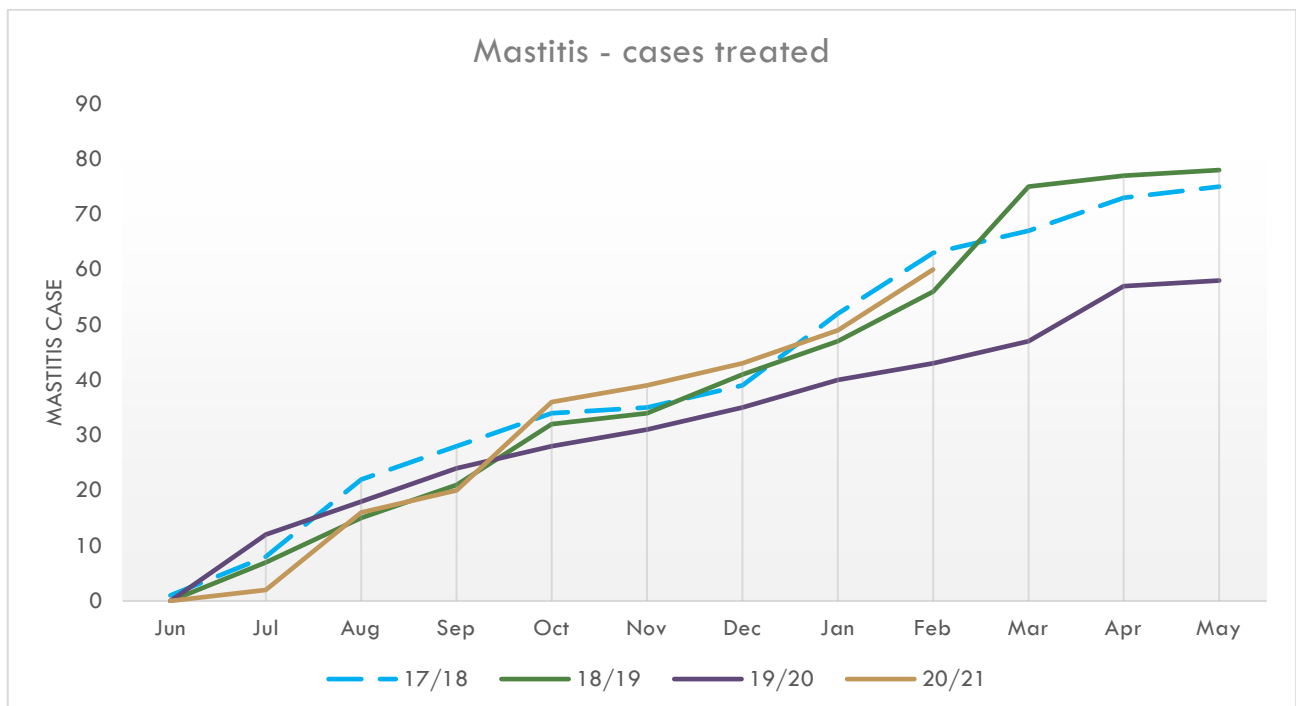
SCC (SOMATIC CELL COUNT)

SCC has been managed a bit more aggressively, with culling decisions made throughout the season to good effect. SCC lifted again after the rain due to cows spending more time lying down in crop.

SCC for 1 July – 31 May

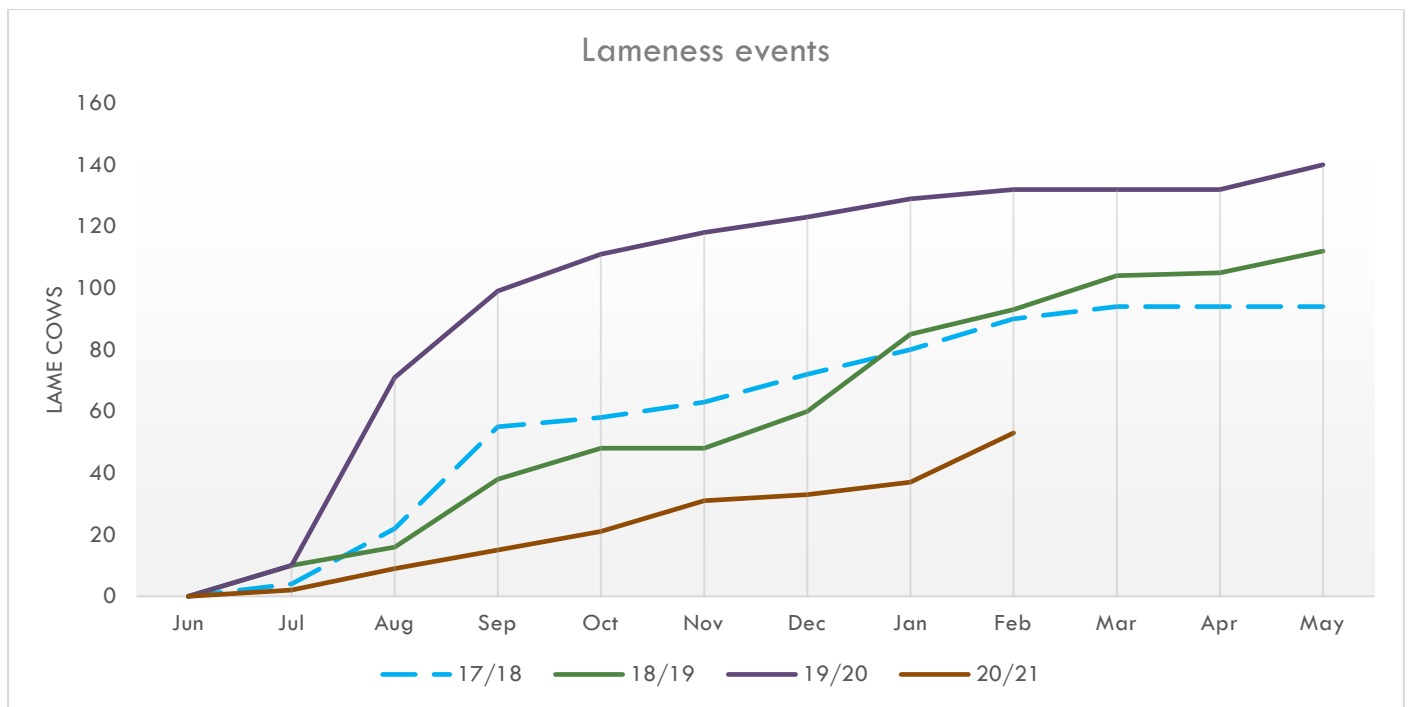


Mastitis - cases treated



LAMENESS

A lame case is recorded if a cow is drafted out of her herd regardless of the treatment. Lame cow numbers have continued to remain low for the season.



Key actions undertaken so far for the 2020-21 season include:

1. Install mirror for backing gate operator.
2. Only use the backing gate to take the space behind half the herd that is already facing the entry to the platform. This allows the remaining cows to turn around (in their own time after entry to the yard) before the backing gate takes the space behind them.
3. Update recording board at lameness treatment area to align with DairyNZ Healthy Hoof app, including which hoof and potential issues.
4. Trial Batt-latch time release gate openers to reduce pressure on movement to the shed.
5. Investment of over \$30,000 on race work last autumn to remedy some sharp stony race surfaces.

REPRODUCTIVE PERFORMANCE

This season we achieved a 6-week in-calf rate of 65% which is below industry target (78%) and 9% below the last two previous seasons. While heat detection appeared to be slightly lower than target, it was conception rate which has had the biggest impact on the final results.

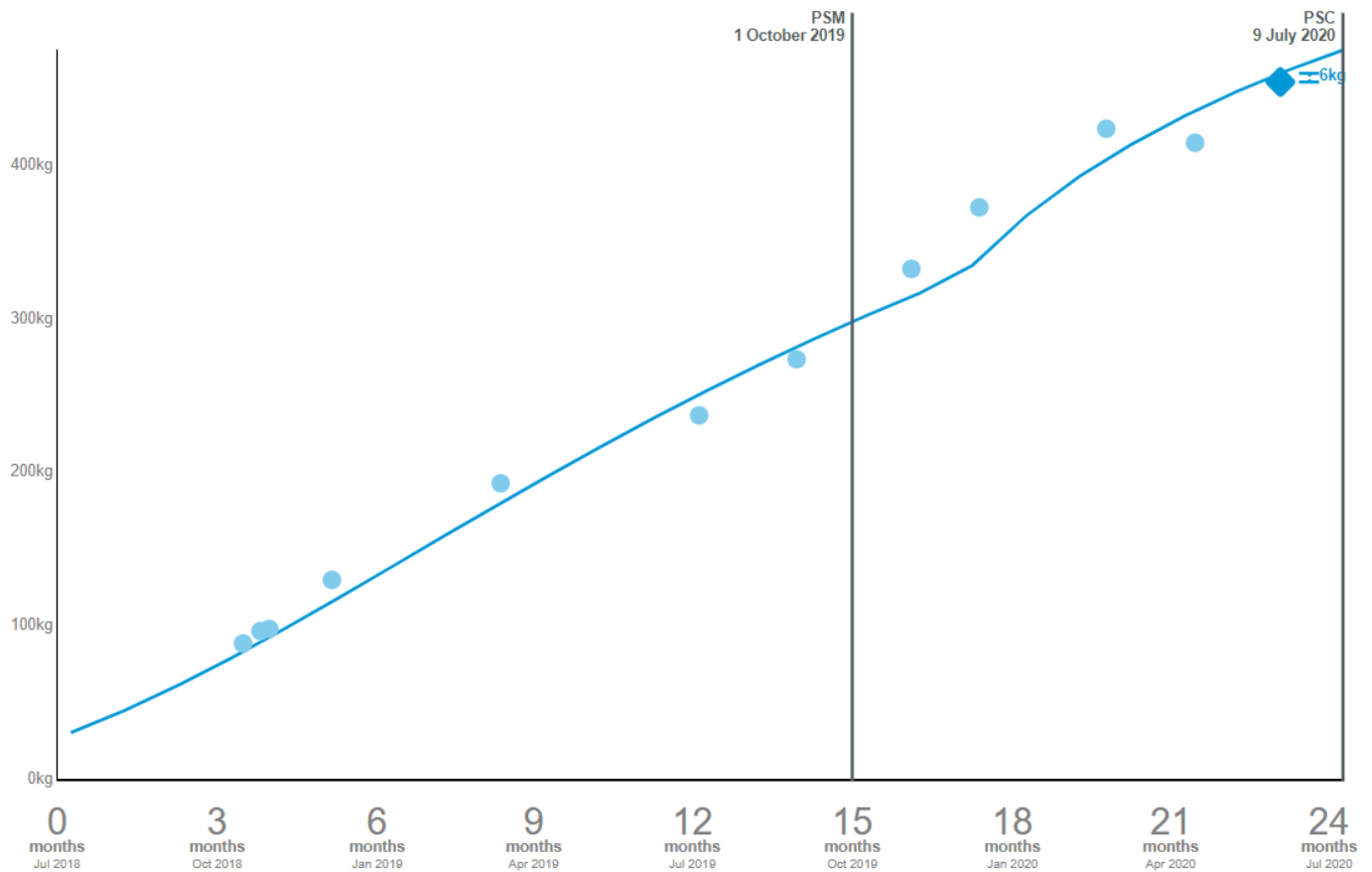
Analysis of the data with LIC and Cambridge Vets showed:

- We moved PSM forward 1 week to return to our normal PSC of 4th July.
- Reduced performance of 2-year-olds who achieved 67% 6-week in-calf rate vs 81% last season. This group returned to the farm in mid-April at 416 kg due to being under target weight (52% underweight); they gained 39 kg to reach 455 kg by 3rd June (29% underweight). These heifers calved at BCS 5.8 and were BCS 4.9 at PSM; they continued to drop to 4.7 by mid-November. We did not use OAD for these younger cows, as we have done in previous years, due to good BCS, high milk production and enough feed available.
- Evidence of early foetal loss as shown by the herd test PD at 3 weeks showing 50% of cows were in-calf
- Improved in-calf rate at the end of mating between weeks 9 and 11 (late November/early December).
- Cows' milk production peaked higher and longer than last season, with a significant drop in production during late October. We also experienced a significant change in feed quantity and quality in late October/early November. Average Pasture Cover went from 2033 kg DM/ha to 2495 kg DM/ha within two weeks and production dropped from 2.1 kg MS/cow to 1.7 kg MS/cow. Mixed age cows calved at BCS 5.6 were 4.9 at PSC and continued to drop to 4.5 by mid-November.

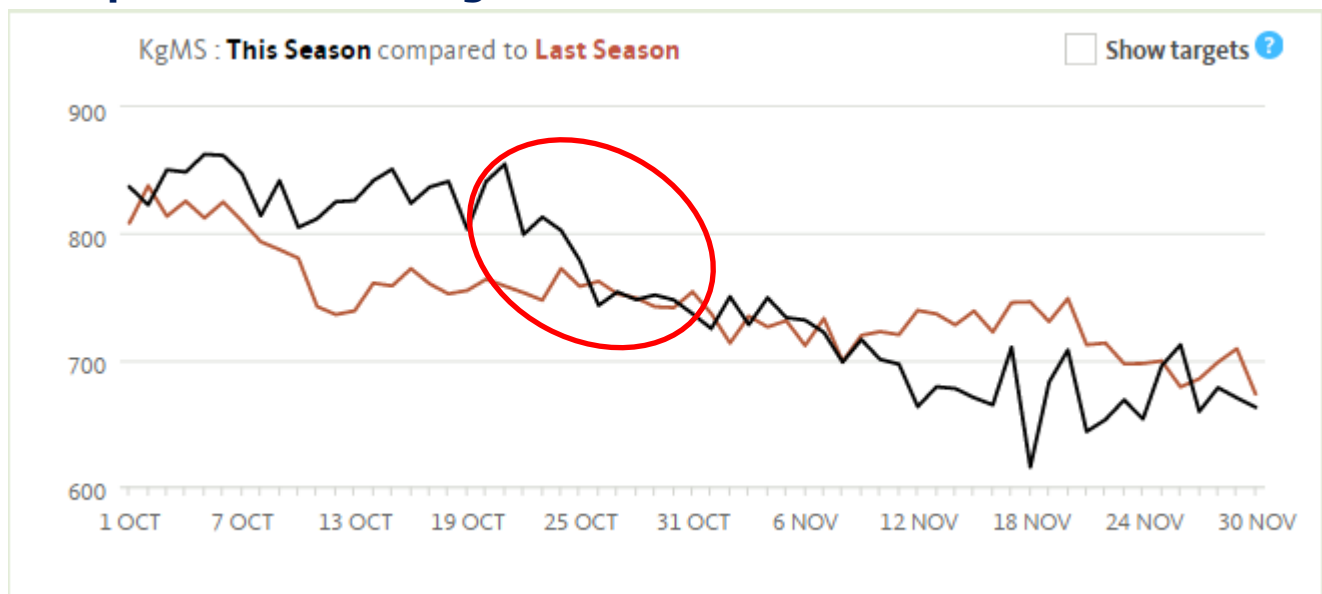
2018-born heifers liveweight graph

Young stock trend ?

All 76 animals in this weighing are displayed



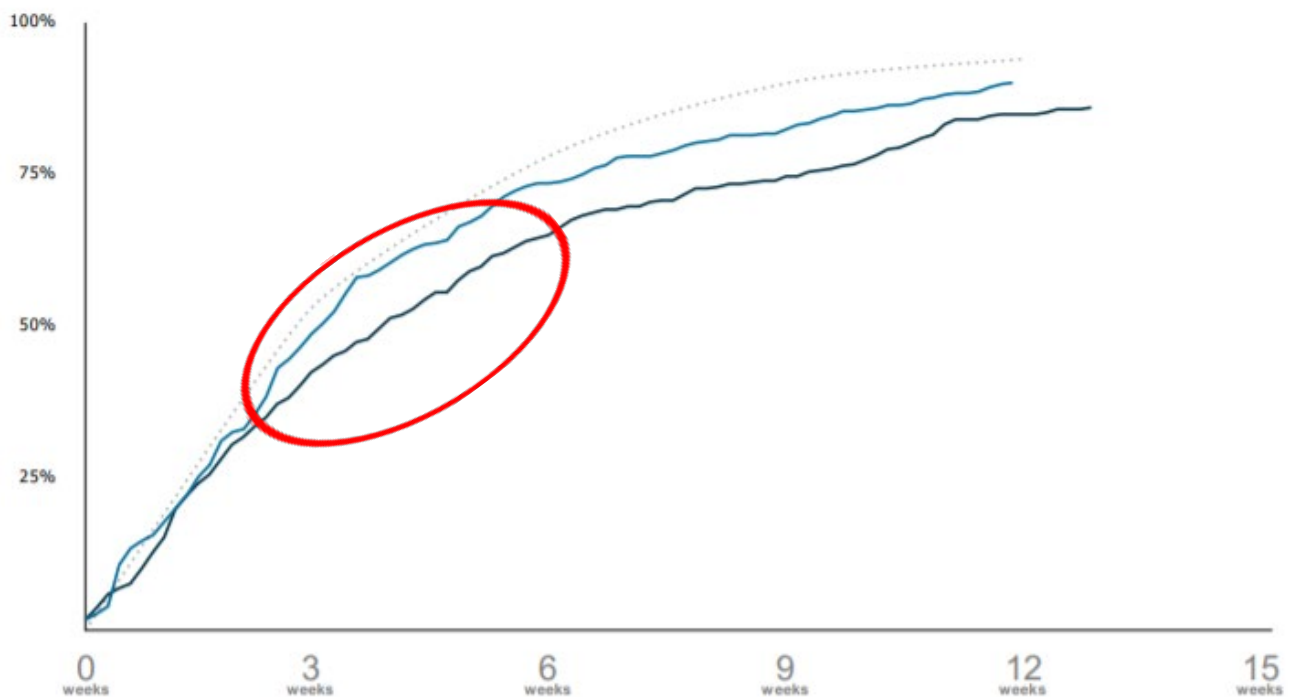
Milk production through October and November



Whole herd in-calf rate compared to previous years

In-Calf Rates for Whole Herd

This pregnancy rate graph is based on a combination of early, aged and non-aged pregnancy testing results, so data may be inaccurate.



In-calf rate

	3 Weeks	6 Weeks	9 Weeks	9+ Weeks	Not In-Calf Rate	
Spring 2020	42%	65%	75%	86%	14%	LHC
Spring 2019	49%	74%	82%	90%	10%	LHC
Spring 2018	53%	74%	83%	87%	13%	LHC
Spring 2017	43%	65%	77%	82%	18%	

Fertility Focus 2020: Seasonal

Owl Farm
Tom Buckley

Report date: 02/03/21

PTPT: HPTT

Herd Code: 2/1884

No of cows included: 406

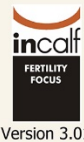
These cows calved between: 18/05/20 and 23/11/20

Mating start & end date:
(based on AB or pregnancy test data) 25/09/20 - 23/12/20

Next planned start of calving: 04/07/21

Duration of mating: 90 days

Duration of AB period: 90 days



1 Overall herd reproductive performance

6-week in-calf rate

Percentage of cows pregnant in the first 6 weeks of mating

Your herd 65% (65-67%)

Aim above 78%



Not-in-calf rate

Percentage of cows not pregnant after 90 days of mating

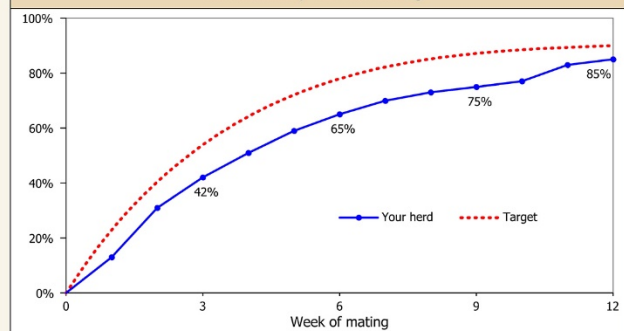
Your herd 14% (12-14%)

Aim for 9%



% 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 47%

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 80% 95%

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 55% 81% 96%

Aim above 67% 88% 98%



Pre-mating heats

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

Your herd 73%

Aim above 85%



3-week submission rate of first calvers

Well managed heifers cycle early

Your herd 95%

Aim above 90%



Heat detection

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

Your herd 91%

Aim above 95%



Non-cycling cows

Treated non-cyclers get in calf earlier.

Treated By MSD Wks 1-3 Wks 4-6

Your herd 6% 0% 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 14%

Expected 16%

OK

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Behind Your Detailed Fertility Focus Report

Report period: Cows calved between 18/05/20 and 23/11/20.

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: 02/03/21

PTPT: HPTT

Herd Code: 2/1884

Calvings up to this date requested for analysis: 01/03/21

No of cows included: 406

These cows calved between: 18/05/20 and 23/11/20

Mating start & end date: 25/09/20 - 23/12/20
(based on AB or pregnancy test data)



Version 3.01



Part A) Herd records cross check

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

2020/21	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
No. of calvings	1	5	274	106	21								407
No. of AB matings					97	435	149	70					751
No. of preg tests								394		103			497
No. of non-aged/late aged positive preg tests										1			1
No. of cows culled or died					1	2		9		10	3		25

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	345
Recorded empty	48
Doubtful/recheck*	0
Culled without pregnancy test	11
No record of cull or pregnancy test	2

Cows analysed 406

*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

404 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 711 AB inseminations on and between 25.09.20 and 23.12.20.

3 Key indicators to areas for improvement

Calving pattern of first calvers

76 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

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

Pre-mating heats

404 cows had calving dates in the required range and were not culled before day 21 of mating and 296 of these had a pre-mating heat recorded.

3-week submission rate of first calvers

76 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

160 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 91% of these were submitted during the first 21 days of mating.

Non-cycling cows

404 cows had calving dates in the required range and were not culled before day 21 of mating and 26 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.

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Users should obtain professional advice for their specific circumstances.

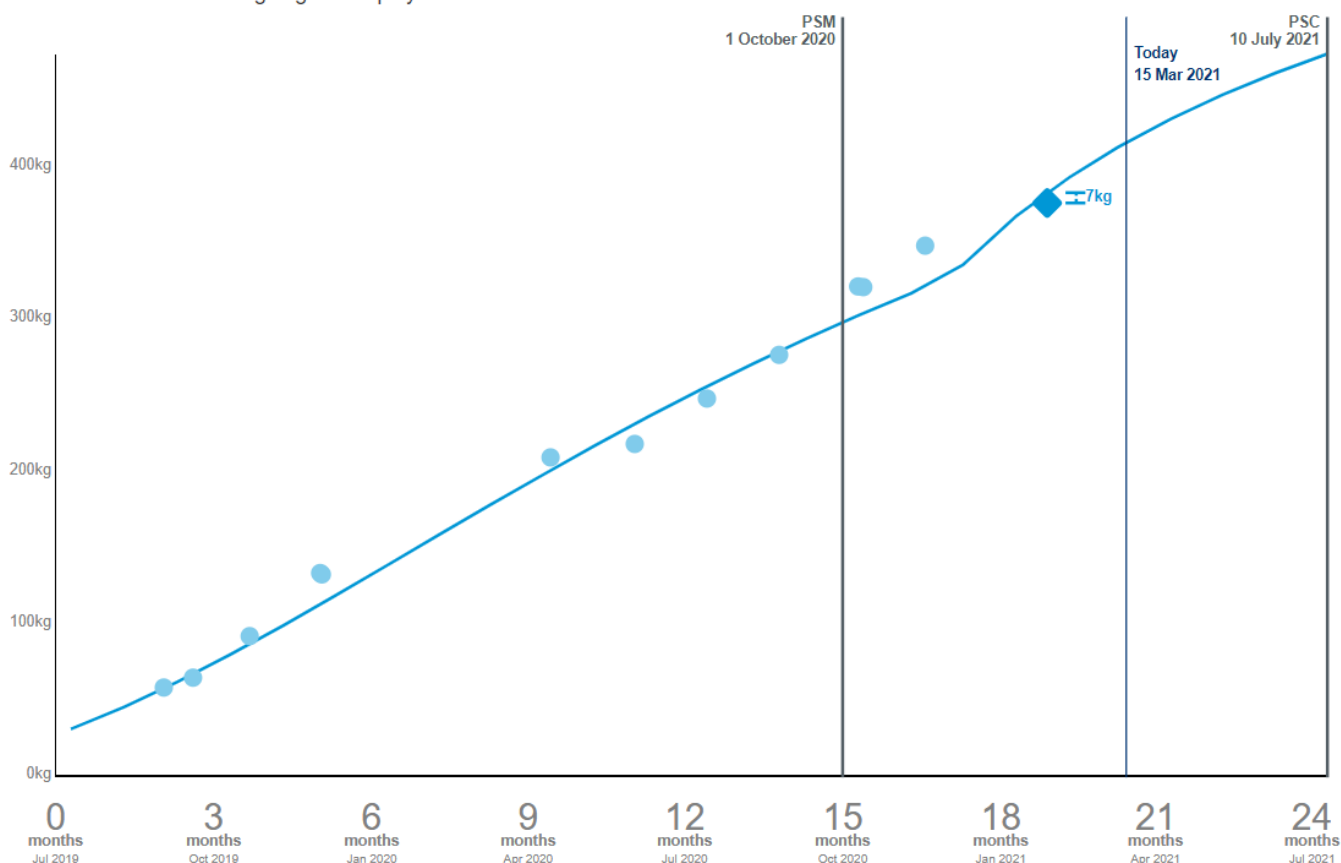
LIVESTOCK GROWTH

A team effort between having the 2019 born heifers return home early and investing in extra supplements with the grazier at the start of the season got the R2s back on track. In-calf heifers at their last weighing were an average of 336 kg on the 28th January (7 kg below target), with 30 heifers underweight. Heifers requiring more than 0.6 kg lwt gain/day (in the Take Action segment) have remained at home with supplements being fed; the remaining heifers have been moved to another property with more grass.

2019 REPLACEMENT HEIFERS

Young stock trend

All 101 animals in this weighing are displayed

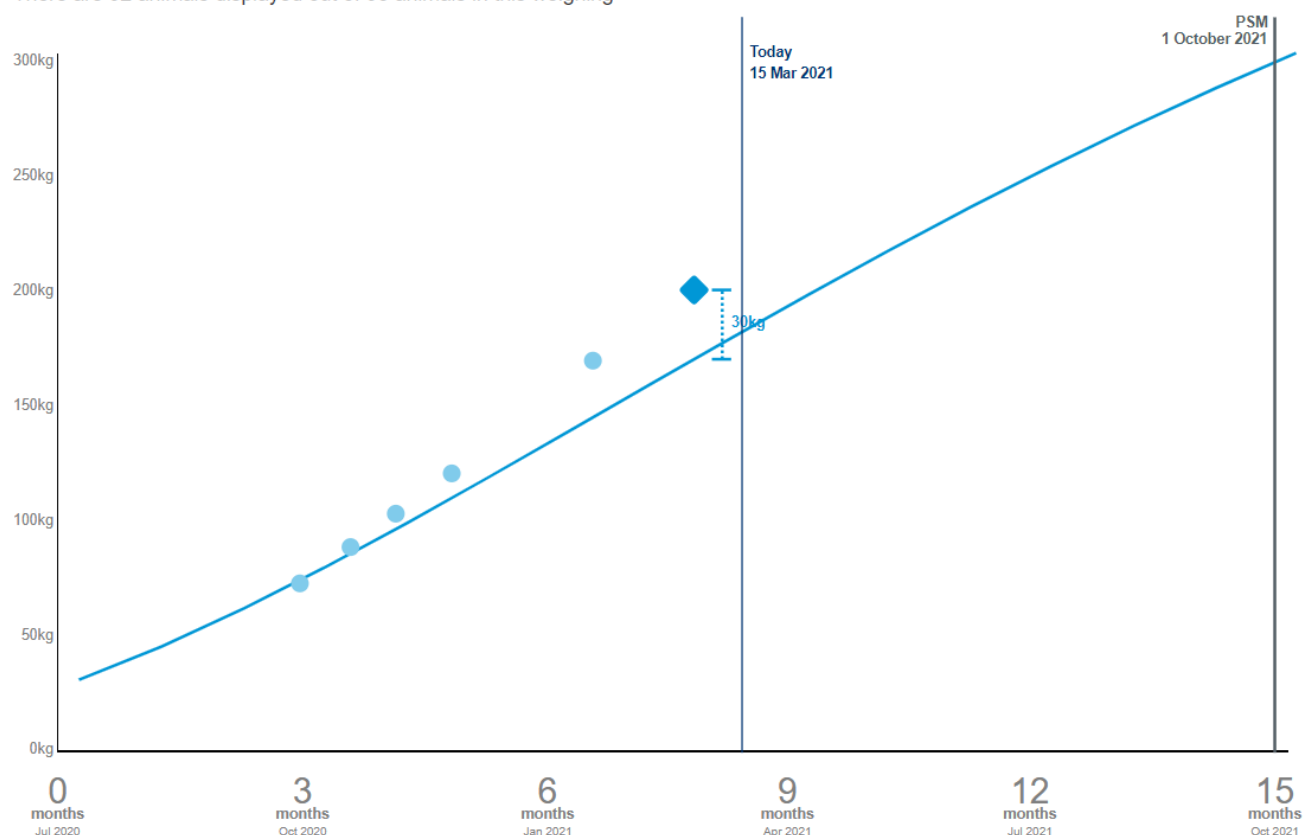


2020 REPLACEMENT HEIFERS

Calves averaged 201 kg on the 25th February. This is 30 kg above target with all animals at target weight.

Young stock trend ?

There are 92 animals displayed out of 93 animals in this weighing



ANALYSIS OF COSTS TO GROW HEIFERS AT HOME

Original costs were compared to expected grazing costs \$25,740 (\$11/head/week grazing costs)

Growing chicory	\$1200/ha x 4.7	\$5,640
PK	15 t DM @ \$340/t DM	\$5,100
Silage	14.2 t DM @ \$380/t DM	\$5,396
Time to shift every second day and weigh calves 3 times	Est 100 hours @ \$25/hr	\$2,500
TOTAL		\$18,636 (\$7.70/head/week)

FARMAX YOUR ADVANTAGE Dairy 8.0.1.24		Feeding for 1-Year Heifers Owl Farm - Weaner Grazing : Dairy, Jun 20 - May 21																													
Select a Feed		Jun 20	Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20				Jan 21				Feb 21				Mar 21				Apr 21				May 21			
Body Weight Gain (kg/d)								0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5						
End Live Weight (kg)								120	126	133	139	145	151	157	163	168	174	180	187	193	199	205									
kgDM/hd/d	Pasture																														
	Chicory							4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.2	6.0								
	Palm Kernel							1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0								
	Pasture Silage Bought - Home Platform							1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0								
	Total (Utilised)								3.2	3.2	3.2	3.5	3.5	3.5	3.7	3.7	3.7	4.0	4.0	4.0	4.2	4.2	4.2	4.1							

Review to date:

We applied effluent to chicory in early February to encourage growth. We also started our 5th grazing round of chicory on the 1st March after 12 days on pasture to allow the chicory to recover.

The calves have preferred the silage so we have a revised total of 16.8 t DM silage and 13.1 t DM PK to the 20th April. We have decided to drill pasture into the chicory as it returns to the dairy platform so the calves will stay on the chicory until mid-April before moving to the dairy platform to graze new grass and leaving the farm in June (as requested by our grazier).

Updated cost as at 15th March:

Growing chicory	\$1200/ha x 4.7	\$5,640
Effluent applied to chicory	Approx \$2,000	\$2,000
PK	13.1 t DM @ \$340/t DM	\$4,454
Silage	16.8 t DM @ \$380/t DM	\$6,384
Pasture eaten	3 t DM @ 37c kg DM	\$1,136
Time to shift every second day and weigh calves 3 times	Est 100 hours @ \$25/hr	\$2,500
TOTAL		\$22,114 (\$9.21/head/week)

FARMAX YOUR ADVANTAGE Dairy 8.0.2.11		Feeding for 1-Year Heifers Owl Farm - Weaner Grazing : Dairy, Jun 20 - May 21																													
Select a Feed		Jun 20	Jul 20	Aug 20	Sep 20	Oct 20	Nov 20				Dec 20				Jan 21				Feb 21				Mar 21				Apr 21				May 21
Body Weight Gain (kg/d)										0.8	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8			0.6	0.6	0.6	0.6	0.6						
End Live Weight (kg)										131	140	149	159	165	174	183	191			210	216	223	229								
kgDM/hd/d	Pasture									0.5	0.7	0.5	0.2	0.2																	
	Chicory									4.0	3.6	3.6	3.6	3.6	3.6	3.6	3.9	3.9		4.0	4.0	4.0	4.0	4.0							
	Palm Kernel									0.5	0.5	0.5	0.5	0.8	0.8	0.8	1.5	1.5		1.5	1.5	1.5	1.0	1.0							
	Pasture Silage Bought - Home Platform													1.0	1.2	1.5	1.5	2.0		2.0	2.0	2.0	2.0	2.0							
	Calf Meal									0.3	0.3	0.3	0.3																		
	Baleage Bought												0.5																		
	Total (Utilised)										3.7	4.2	4.2	4.2	4.5	4.5	4.5	4.6	4.6		4.5	4.5	4.5	4.7	4.7						

Advantages:

- Liveweight gain has been spectacular and will hopefully set the calves up for early puberty.
- Lovely mob to take visitors to – nice experience for people to interact with them.
- Providing information to share with the farming community (including Instagram photos)
- Likely to have a couple of calves available for the Public Open Day.
- although it has been an extra 1 hour's work per day, on average, the team can see the benefit of having them home and seeing them grow and being able to maintain that growth by manipulating the feed offered within the feed budget.
- Only need to drench once after leaving the dairy platform.
- Reduced transport costs and movement of stock to reduce biosecurity risks.

Disadvantages:

- Chicory has not kept up with demand over February. We have had to increase silage to 2-3 kg and graze them in paddock R23 and R11w to help the chicory recover; we have also spent \$2000 on carting effluent from the pond to apply nutrients and moisture to the chicory during February using a contractor and tanker.
- Required the use of the PKE trailer with the calves which would normally be needed for cows if it was a very dry summer.
- Once we include the lease of the land to grow chicory, the cost is similar to grazing calves with grazier; but more control over the result which becomes more important as we reduce the number of replacements being reared.

Plan for 2021 season:

The Farm Management Committee have agreed that the calves are to be reared at home again next season. Approximately 5ha of chicory will be grown across the dairy platform, that are closer for public access and that complement the re-grassing strategy for the milking platform. We will budget for similar PK and silage use (total 30 t DM).

BUSINESS HEALTH

To the end of January, our total milksolids was still behind budget but income was ahead. This can be explained by:

- (a) final payments from 2019-20 season
- (b) dividend payment from Fonterra and LIC
- (c) we are ahead in stock income due to 4 culls removed in October and excellent calf survival and income received.

Expenses are tracking on a par with budget but with some category variations:

- wages are tracking below budget due to a vacancy during the spring for our part-time Farm Assistant. We expect to use this allocation to cover regular time off and extended annual leave in the autumn.
- this underspend in animal health reflects lower cost of lameness, and zinc boluses unlikely to be used this season.
- purchased in 138 t DM of standing grass silage to cover the feed budget deficit we were predicting, due to less grass grown and less silage made. This also includes silage for the calves and a replacement for some PK in the system to better manage FEI. We expect that, with all our feed secured for the season including 100 t PK at \$306/t landed, we will underspend on the combined total of purchased feed and silage made.
- extra feed purchased to get R2s up to weight for mating and yarding costs for synchrony programme were both unbudgeted costs. R1 heifers will be grazed at home so this category will be a significant underspend by the end of the year. Grazing calves will show as cropping cost along with an estimated 30 t DM of purchased feed (PK and silage).
- significantly less spring surplus produced this season compared to budget.
- budgeted lower interest rates that haven't been realised yet.

Owl Farm - For Year Ended: May 2021

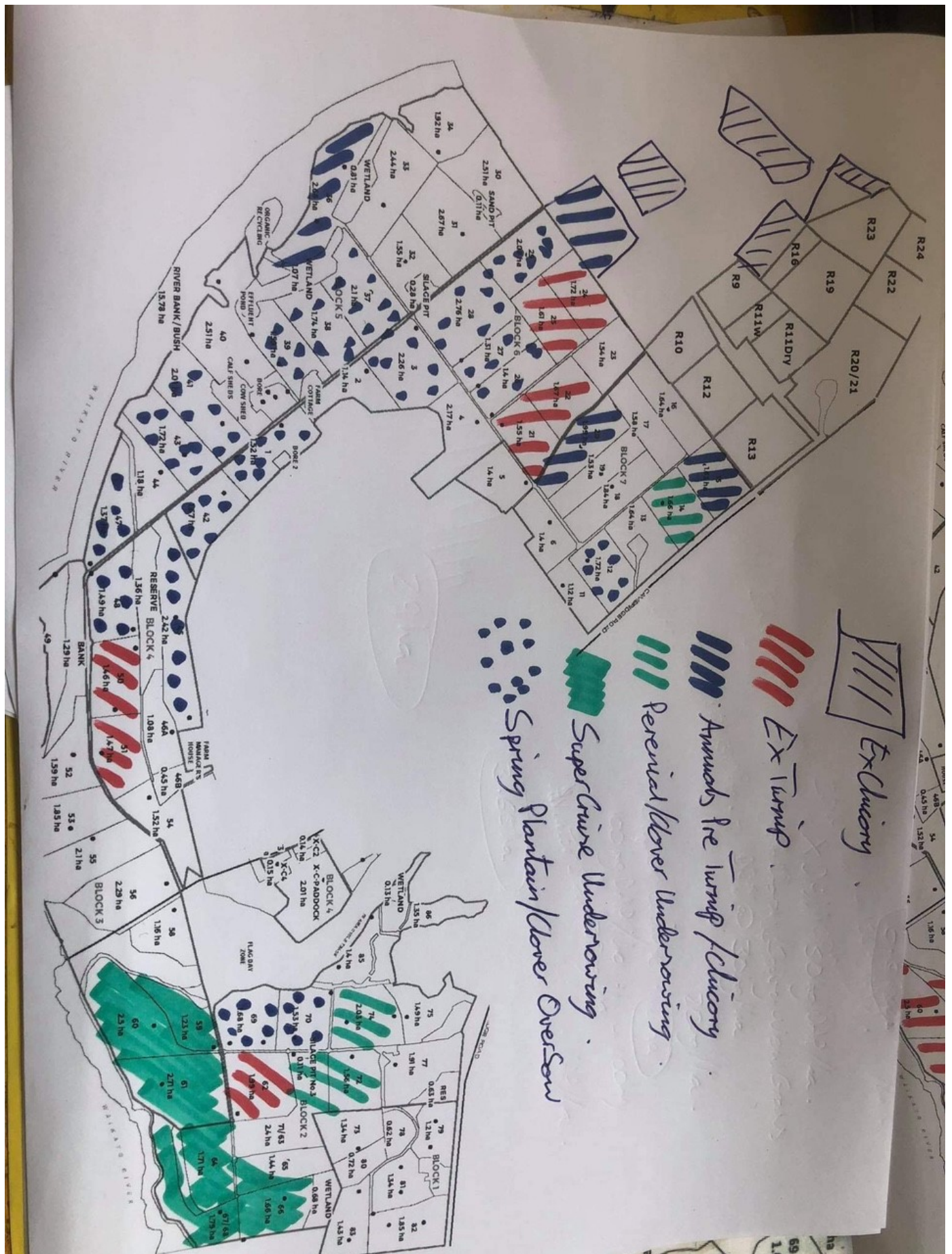


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DEMONSTRATION DAIRY FARM



INCOME	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Total	Budget YTD	Variance YTD	Budget Full Year	
Milk Solids KG	-	5,052	20,543	25,146	25,222	20,715	19,866	18,487	135,031	137,000	(1,969)	175,000	
Milk	67,990	71,112	142,595	163,790	124,793	106,270	87,109	147,391	911,051	878,642	32,409	1,210,382	a. budget at \$6.40 impact of increased advance rates coming through
Dividends	-	-	-	7,781	9,308	-	-	-	17,090	-	17,090	-	b. from Fonterra and LIC
Cattle	-	1,187	12,942	6,717	13,094	5,534	6,121	-	45,595	34,050	11,545	70,770	c. under budgeted calf income, 4 early culls
Other Income	2,557	6,486	2,755	3,433	6,867	-	6,867	3,433	32,398	31,440	958	47,160	
Total Income	70,547	78,786	158,292	181,722	154,062	111,804	100,096	150,824	1,006,133	944,132	62,001	1,328,312	
EXPENSES	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Total	Budget YTD	Variance YTD	Budget Full Year	
Wages	10,940	10,163	18,406	14,253	12,146	11,456	16,243	21,801	115,410	121,172	(5,762)	182,508	d. vacant FA role for a long time during spring
Animal Health	7,933	9,770	2,524	4,809	680	4,372	174	630	30,892	37,000	(6,108)	57,000	e. includes zinc bolus unlikely to be used
Breeding	315	225	535	280	16,410	15,953	2,584	1,851	38,152	35,897	2,255	39,851	
Dairy Shed and Electricity	219	1,537	1,959	1,976	1,672	1,803	2,350	1,417	12,932	14,660	(1,728)	24,040	
Purchased Feed	4,446	9,227	8,022	40,514	23,586	9,595	1,126	18,225	114,740	57,783	56,956	85,075	f. extra silage from off-farm expect reduced PK purchase includes 30TDM for calves
Grazing - Replacement Heifers & Calves	-	5,226	5,226	12,758	5,226	6,154	5,226	5,226	45,041	41,400	3,641	70,600	g. extra feed purchased for underweight R2 and yard costs for heifer synchrony
Fertiliser	(981)	-	7,338	16,002	13,095	-	2,793	-	38,247	46,001	(7,754)	65,053	
Gibberellic Acid	-	-	-	-	-	-	-	-	-	-	-	-	
Fertiliser Spreading	-	-	828	3,196	1,853	-	-	-	5,877	5,984	(107)	5,984	
Freight	-	606	119	-	-	-	-	-	725	825	(100)	3,619	
Cartage	48	-	993	1,444	1,725	-	-	-	4,210	7,689	(3,479)	8,855	
Weeds and Pests	-	335	-	-	-	-	-	-	335	1,650	(1,316)	2,500	
Consultancy	-	-	-	-	-	-	-	-	-	2,000	(2,000)	4,000	
Silage	-	-	-	2,060	6,022	10,864	-	-	18,947	47,450	(28,503)	47,450	h. less spring surplus hence the increased purchased silage
Cropping	-	-	-	7,853	5,283	2,318	-	-	15,454	7,500	7,954	10,750	
Regrassing	2,700	-	-	217	-	-	-	-	2,917	4,800	(1,883)	22,800	
R&M	3,448	6,008	1,868	14,910	1,760	4,355	4,404	98	36,850	37,250	(400)	103,850	
Vehicle Expenses	2,226	1,239	2,396	1,912	1,039	3,110	1,574	1,400	14,897	19,672	(4,775)	12,708	i. less use during spring will be spent in summer due to breakdowns
General	743	2,607	3,212	2,883	2,939	3,856	5,256	3,552	25,049	33,759	(8,711)	50,359	j. timing of expenditure, expect this to catchup
Overheads	1,719	1,719	1,719	5,395	1,719	7,409	16,177	(1,622)	34,235	33,330	905	47,557	
Total Farm Working Expenses	33,756	48,662	55,147	130,460	95,155	81,245	57,908	52,577	554,910	555,823	(913)	844,559	
Net Surplus before Financial Charges	36,791	30,124	103,145	51,262	58,907	30,558	42,189	98,247	451,223	388,309	62,914	483,753	
Financial Charges	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Total	Budget YTD	Variance YTD	Budget Full Year	
Interest Cost	14,106	14,106	14,106	14,106	14,106	14,106	14,106	14,106	112,848	90,664	22,184	135,996	k. Lower interest rates budgeted
Lease Land	4,068	4,068	4,068	4,068	4,068	4,068	5,319	4,068	33,793	32,544	1,249	48,816	
Depreciation	7,645	7,645	7,645	7,645	7,645	7,645	7,645	7,645	61,160	64,000	(2,840)	96,000	
Total Financial Charges	25,819	25,819	25,819	25,819	25,819	25,819	27,070	25,819	207,801	187,208	20,593	280,812	
Surplus (Deficit) after Financial Charges	10,972	4,305	77,326	25,443	33,089	4,739	15,119	72,428	243,422	201,101	42,321	202,941	

37



PLANNING FOR PLANTAIN AND CLOVER SUCCESS

We have a goal of harvesting 15 t DM/ha of pasture and crop at Owl Farm. In the 2018/19 season we achieved 14.1 t DM/ha which dropped down to 12.2 t DM/ha last season during the drought. We want to achieve this goal while reducing our modelled N loss from 33kg N/ha last year. By adding more plantain and clover to the swards we aim to reduce total N fertiliser use and mitigate some of the N loss from the system.

Owl Farm's journey

1. Annual re-grass strategy to improve feed quantity and quality including clover and broadcast plantain in spring (approx. 10-15% of farm /year) for the last four years.
2. Clean crop brassica system to reduce weed burden on new pastures (last four seasons).
3. Understand current soil fertility levels including Total N (7 block samples plus crop areas taken in Spring 2020).
4. Pasture condition scoring now carried out for each paddock to assess current sward health and proportion of plantain and clover. Recorded against paddock sowing history. Used with pasture yield data to plan re-grass strategy and understand what is thriving out of the seed mixes sown in each paddock.
5. Determine strategy for increasing plantain and clover content during Autumn re-grass plan with agronomist.
6. Collect clover-only herbage samples (November 2020).
7. Correct any nutrient deficiencies.
8. Modify Farmax feed budget to reflect change in fertiliser use and system evolution to determine risks and strategies to mitigate them.
9. Alter financial budget in March to reflect changes (decreased N fertiliser, more Mo fertiliser if needed, higher seed and re-grassing costs, gibberellic acid)

Next steps:

10. Carry out pasture renovation as advised by agronomist
11. Look after pastures in the early years

We continue to see advantageous use of cocksfoot in many of our worst-performing paddocks where soil compaction, free draining soil type, or historical cultivation has led to poorer soil structure and environment for ryegrass alone to persist. Where these issues are not present we continue to use permanent ryegrass cultivars.

As part of our strategy to invest in EcotaiN plantain and increase the clover content of our pastures we have used the paddock condition scoring to identify which paddocks require seed this autumn and spring. These paddocks will require low weed content or a winter weed spray this year prior to spring sowing.

Autumn re-grassing	Area (ha)	Notes	Cultivars Rate/ha
Perennial pasture after crop	7	Establish permanent ryegrass/cockfoot mixed sward	Legion + Savvy + Quartz + Legacy + Amigain + Ecotain <i>14kg/ha 4kg/ha 3kg/ha 2kg/ha 3kg/ha 4kg/ha</i>
Perennial pasture after crop	6	Establish permanent ryegrass/cockfoot mixed sward	Platform + Savvy + Quartz + Legacy + Amigain + Ecotain <i>14kg/ha 4kg/ha 3kg/ha 2kg/ha 3kg/ha 4kg/ha</i>
Perennial pasture after crop	3	Establish permanent ryegrass dominant pasture	Platform + Quartz + Legacy + Amigain + Ecotain <i>18kg/ha 2kg/ha 2kg/ha 3kg/ha 4kg/ha</i>
Undersow permanent ryegrass	5	Stitch permanent pastures that don't need crop	Platform Permanent Ryegrass <i>14kg/ha</i>
Total area re-grassed	21	14.5% of farm	
Italian	12	Improve short term yield on dry soils with uncertain tenure	Supercruise <i>20kg/ha</i>
Autumn sown annuals	8	Drive winter yield ahead of crop in annual ryegrass	Winter Star II <i>20kg/ha</i>
Total area drilled In Autumn	41	28% of farm (including annuals ahead of crop)	

Total re-grassing budget for the year was \$22,800. Spend to date is \$,2917 on winter oats to provide extra feed on leased land as part of our drought recovery plan.

Total new ryegrass establishment cost approximately \$820/ha

- Ryegrass or cocksfoot mix - \$460
- Cross Drill - \$190
- DAP - \$100
- Spray-out - \$70

Cost for the seed mixes excluding drilling and fertiliser:

Perennial Undersowing Platform Ryegrass @14kg/ha	\$209/ha
Annual Winter Star II @ 20kg/ha	\$130/ha
Italian Supercruise @ 20kg/ha	\$185/ha



My Pasture Planner

My Pasture Planner (MPP) is a software program that is designed to improve the efficiency of nitrogen (N) use on New Zealand's pastoral farms (dairy, deer, sheep and beef).

MPP was developed through Ballance's Primary Growth Partnership (PGP) research funding, in association with AgResearch.

By using MPP, farmers will be able to better manage the amount of N fertiliser applied to pastures, while still meeting their production goals. This can be achieved by one of the following strategies:

- using less nitrogen fertiliser to achieve existing production goals, by using it strategically on areas that have a higher potential for response
- using existing levels of nitrogen fertiliser to achieve higher production goals, by using it more strategically across the farm unit

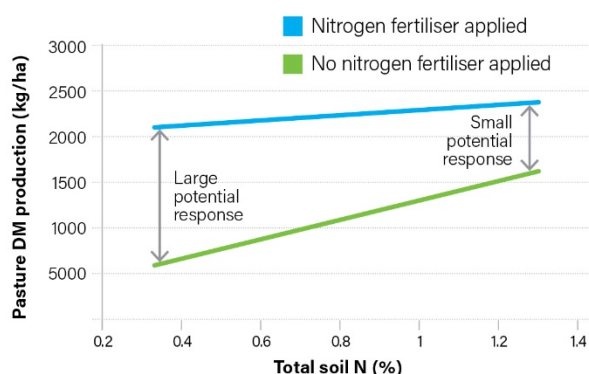


Figure 1: When soil N levels are low, there is greater potential response to N fertiliser, compared to when soil N levels are high.

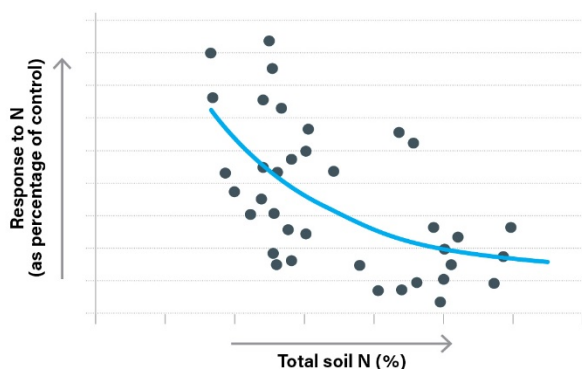


Figure 2: The relationship between soil N levels and pasture response to N fertiliser, combined from a range of research locations across New Zealand.

Scientific basis

Sound science and extensive research underpins the programming that drives MPP. The work is based on the relationship between total nitrogen content in the soil (TN) and pasture production, and how this influences the efficacy of N fertiliser use (Figure 1).

Studies were carried out at locations representative of New Zealand farming conditions, with the majority of the work being conducted in Northland, Waikato and Southland. Research was conducted over a period of 4-5 years. The TN content of the soils was determined, and the pasture response to N fertiliser (50 kg N/ha) measured. The results were used to develop rules that can predict the benefit of N fertiliser under different conditions. An example of these results is shown in Figure 2.

Using MPP

My Pasture Planner is designed to help pastoral farmers develop annual nitrogen plans. The optimisation of nitrogen use is based on the four "R"s; Right Rate, Right Time, Right Place, Right Product. To run MPP, farms will require a MyBallance account, a TN soil test, a farm map in MyBallance, and a recent Overseer nutrient budget.

The average TN measured by soil testing indicates the likelihood of pasture growth increasing in response to an application of N fertiliser and can be assessed during the regular soil testing program (soil testing for TN only needs to be done every four- five years). The TN test along with feed demand and average pasture growth rates is used to determine the required rate of N fertiliser needed to grow more grass to fill an anticipated feed deficit.



MPP can be used to develop a differential N fertiliser strategy for the farm:

- On farms where TN testing shows high variability between blocks, MPP will show where and when to apply the N fertiliser, and how much to apply.
- On farms where initial testing shows no or low variability in soil TN levels, MPP can be used to develop a differential N fertiliser strategy for the farm showing when to apply the N fertiliser, and at what rate.

MPP will create an annual plan that is specifically optimised to each different property.

Key points

- To run MPP you need:
 - A MyBallance account
 - A soil TN assessment
 - An Overseer nutrient budget
 - A farm map in My Ballance
- The average Total N determined by soil tests indicates the likelihood of a yield response to N fertiliser
- MPP can be used to develop optimal N fertiliser strategies for different areas of the farm

MPP in action

The following example shows how MPP could be applied in a pastoral setting, delivering production and economic benefits to the farmer.

Soil testing of a 100ha dairy farm reveals the following:

- 50 ha has TN of 0.7% (high N area)
- 50 ha has TN of 0.3% (low N area)

A difference of this magnitude is considered significant enough to warrant the use of MPP for differential application of N fertiliser application.

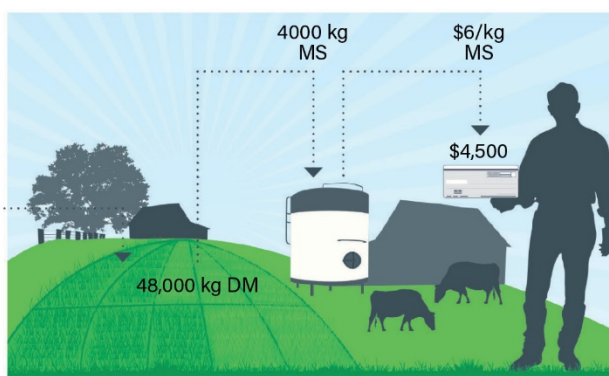
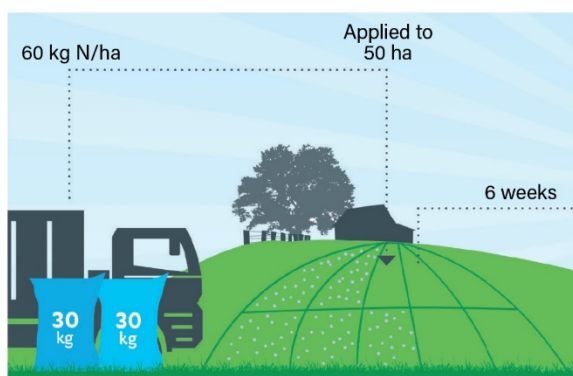
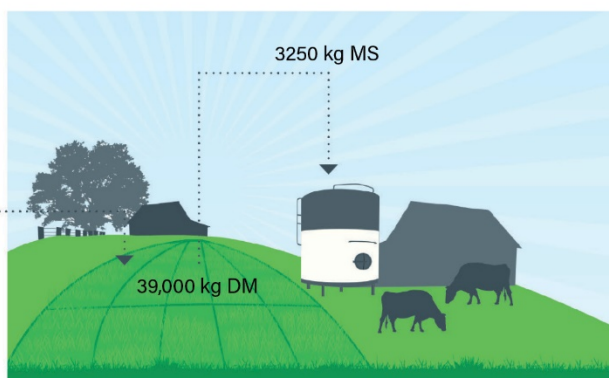
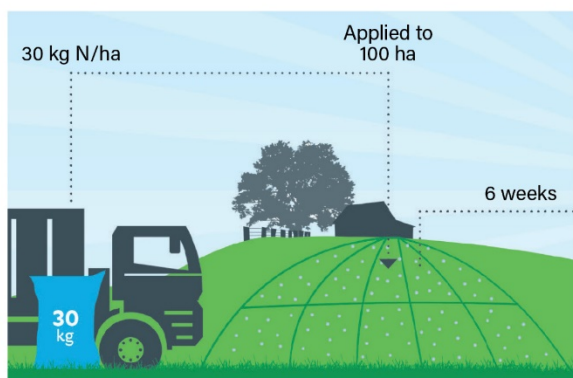
According to MPP, fertiliser N will result in the following production responses:

- 10 kg DM/kg N applied, in the high N area
- 16 kg DM/kg N applied, in the low N area

Without MPP, the farmer would typically apply 30 kg N/ha uniformly over the farm. This could be expected to produce a 13:1 response, resulting in a total of 39,000 kg DM.

With MPP, the farmer would apply 60 kg N/ha to the low N area, and none to the high N area. This would produce a 16:1 response, resulting in a total of 48,000 kg DM.

If the extra 9000 kg DM grown is converted to production at 12 kg DM/kg MS, the result is an additional 750 kg MS. At a pay-out of \$6/kg MS, this is an economic gain of \$4,500 for the farmer.



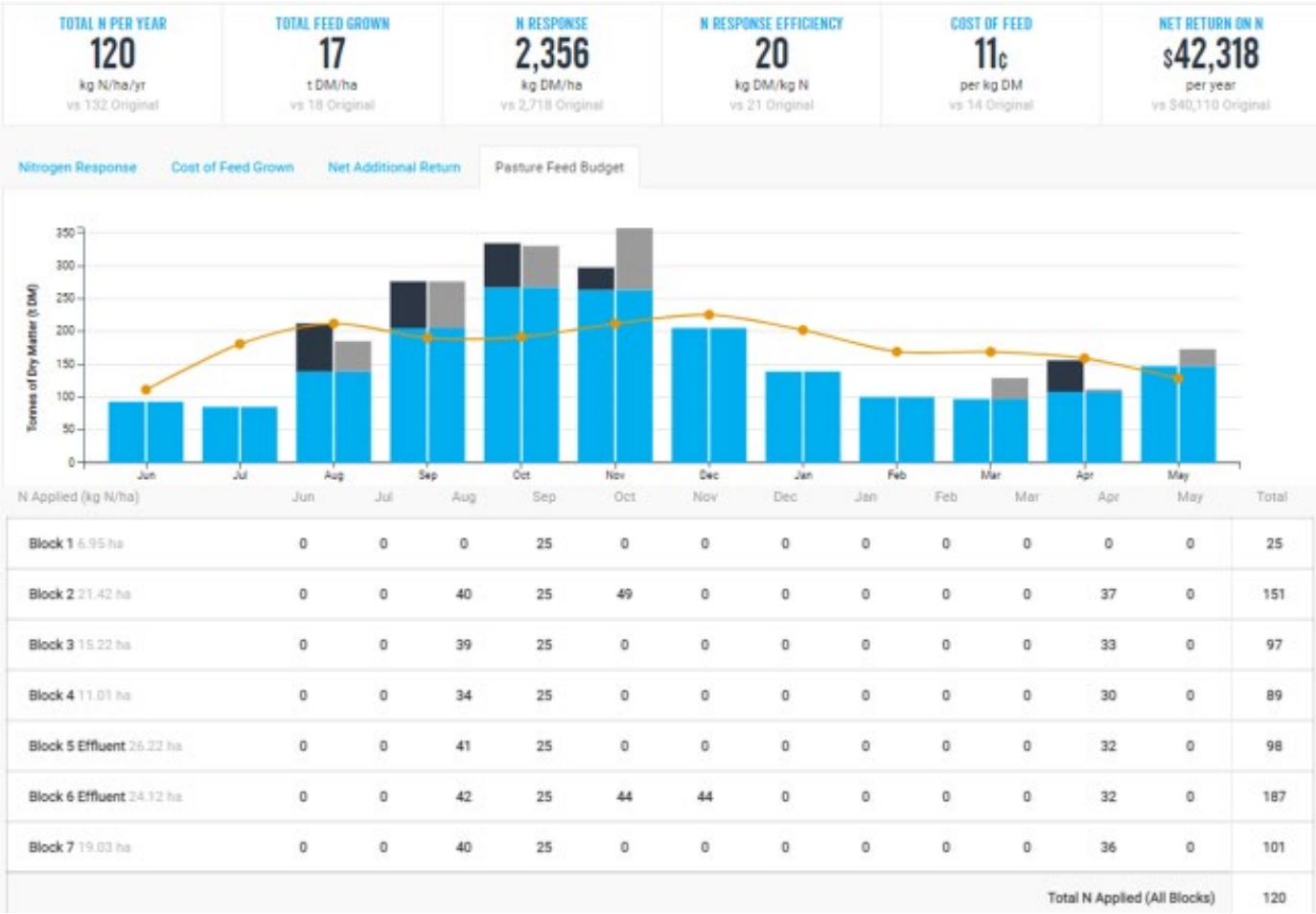
Fit to Feed Demand



Optimise to N Budget



BEST FIT FOR OWL FARM





Next Farm Focus Day

Wednesday 9 June, 2021

Public Open Day

Saturday 17 April, 2021

Weekly Farm Walk

Tuesdays, 10am



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