Owl Farm

Providing knowledge

St Peter's School/Lincoln University
Demonstration Dairy Farm

St Peter's · Cambridge
New Zealand

Lincoln University
Te Whare Wānaka o Aoraki
AOTEAROA · NEW ZEALAND
New Zealand's specialist land-based university

Farm Focus Day

Wednesday, 19 September 2018

PROVIDING KNOWLEDGE

Owl Farm Season Update: Less Cows, no less milk.

Financial Review: How does the cashflow look so far?

Body Condition Score – Lessons from tracking the individual

Mating Focus 2018 – How could an all AB plan work?

OPUS LIC PGG Wrightson Seeds DairyNZ Ballance NEW ZEALAND FARM SOURCE

NOTES

Owl Farm
Providing knowledge
St Peter's School/Lincoln University
Demonstration Dairy Farm

HEALTH AND SAFETY

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

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 YOUR 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

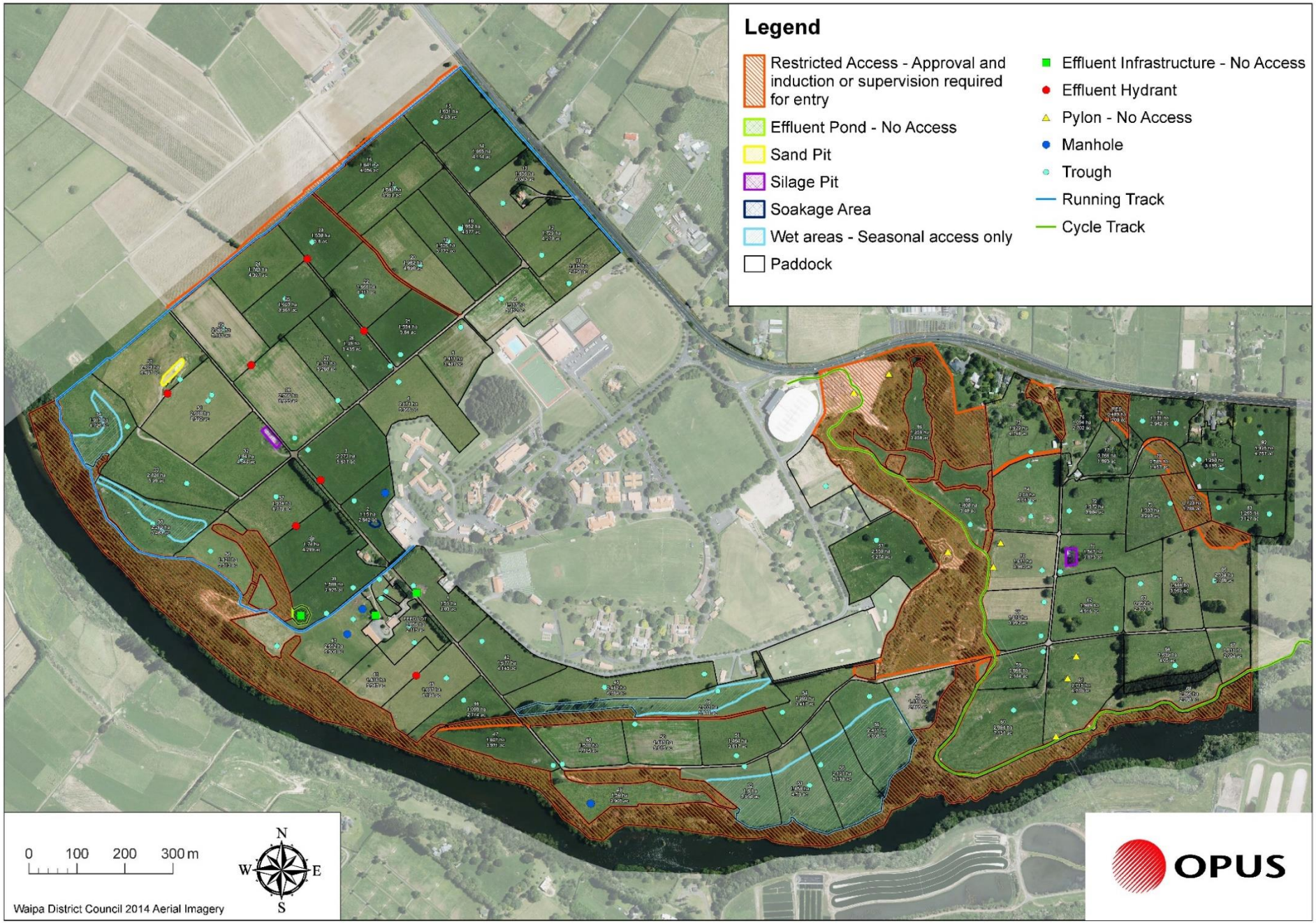
- Louise Cook – Demonstration Manager 027 808 5777
- Tom Buckley – Farm Manager 021 058 4916

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.

NOTES


Legend
Restricted Access - Approval and induction or supervision required for entry
Effluent Pond - No Access
Sand Pit
Silage Pit
Soakage Area
Wet areas - Seasonal access only
Paddock
Effluent Infrastructure - No Access
Effluent Hydrant
Pylon - No Access
Manhole
Trough
Running Track
Cycle Track
0 100 200 300 m
N
W
E
S
Waipa District Council 2014 Aerial Imagery
OPUS

Owl Farm

Owl Farm
Providing knowledge

St Peter's · Cambridge
New Zealand

Lincoln University
Te Whare Wānaka o Aoraki
Aotearoa · New Zealand
New Zealand's specialist land-based university

St Peter's School/Lincoln University
Demonstration Dairy Farm

OPUS LIC PGG WrightsonSeeds DairyNZ Ballance NEW ZEALAND FARM SOURCE

OWL FARM - ST PETER'S SCHOOL / LINCOLN UNIVERSITY DAIRY FARM STRATEGY

1. Vision

a. Dairy Farm

- To apply proven research, utilising good on farm practice and scientific monitoring for the farm to become 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.
- Optimise profit through identifying the appropriate dairy production system for Owl Farm.
- Achieving a farm 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)

Establish credibility by addressing current issues and performance, whilst setting up the farm for future development. During this stage, the farm will operate 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)

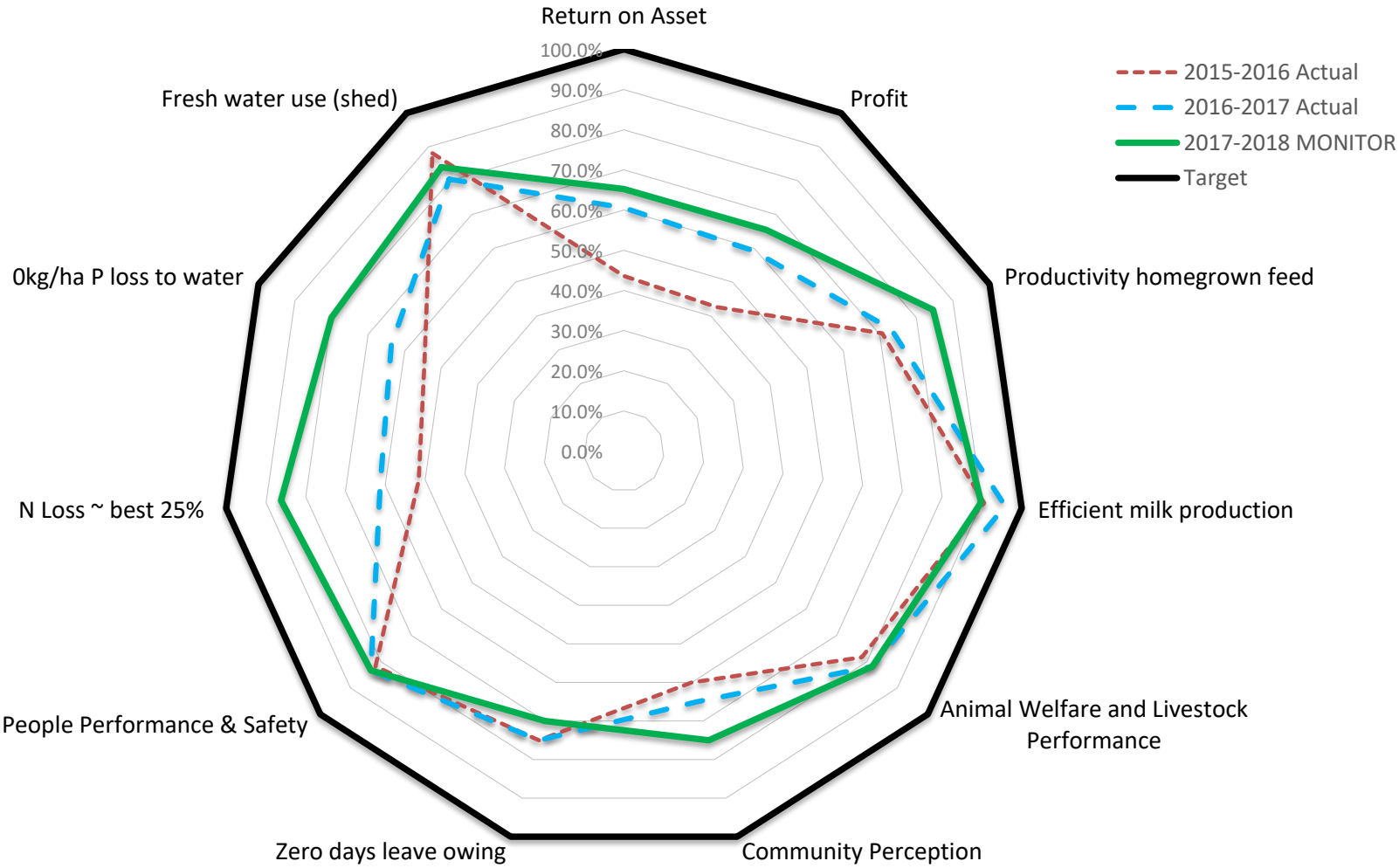
Testing and investigating in conjunction with partners, innovative strategies to lead sustainable profit. The farm system will be developed over years 1-3 and reflect demonstration requirements of industry that are relevant and appropriate at that time point.

NOTES

OWL FARM SEASON PERFORMANCE ON OUR SCORECARD

Our wagon wheel works best when we have a round wheel. This year we have taken out some of the angles and made real progress in some areas. But we know there is more to work on.

The green series is this year, blue dashed, last year and Orange dotted the prior year. The closer to the black line we get, the closer we are to our goals



Owl Farm
Providing knowledge
St Peter's School/Lincoln University
Demonstration Dairy Farm

CONTENTS

NOTES

OWL FARM MULTI-YEAR SNAPSHOT

	Year	2015-2016	2016-2017	2017-18	2018-19 F/cast
Physical Info	Total Farm Area	177	172	174	174
	Effective Area	160	146	148	148
	Effective area Leased	23	18	18	18
	Leased Run off	3	7	5	3
	Cows Wintered	470	453	441	419
	Peak Cows (1 Nov)	445	423	418	405
	Peak Stocking Rate Cows/ha	2.78	2.90	2.82	2.74
Production	Total kgMS	176,197	178,294	168,169	177,000
	MS/cow	396	421	402	437
	MS/ha	1,101	1,221	1,136	1,196
	MS/ha from homegrown feed	879	952	978	978
	MS AS % lwt	85.2%	90.6%	86.5%	94.0%
	Ave SCC	112,000	125,000	146,000	146,000
Feed and Inputs	Feed Grown TDM/ha	15.9	15.1	17.5	15.7
	Feed Harvested TDM/Ha (actual kgs)	11.9	12.5	13.1	13.3
	Feed harv TDM/ha (@11.0MJME/kgDM)	12.4	12.8	13.7	14.0
	Supplements Imported TDM/Ha	4.2	3.6	2.3	2.3
	Supplements Imported TDM	671	523	335	340
	% diet imported	21%	19%	11%	13%
	% of farm cropped & harvested (silages)	21%	35%	33%	33%
	Nitrogen Applied/effective ha	149kg	163kg	150kg	150kg
Financials	Gross Farm Rev/kgMS (inc stock/dividend)	$4.78	$7.00	$7.56	$7.39
	Farmgate milk price /kgMS	$3.90	$6.12	$6.66	$6.75
	Stock Sales /kgMS	$0.48	$0.43	$0.54	$0.39
	Dividend /kgMS	$0.41	$0.44	$0.36	$0.25
	FWE/kgMS	$4.97	$4.15	$4.28	$4.37
	OPEX/kgMS(inc depn & feed inv)	$4.91	$4.81	$4.53	$4.68
	EFS/ha actual payouts	-$144	$2,742	$3,446	$3,477
	EFS/ha @ $6.00 farmgate milk price	$1,426	$1,883	$2,291	$2,045
	Opening Debt/kgMS held	$20.00	$23.02	$21.23	$21.00
Enviro	est Nitrogen loss kg/ha	46	41	35	35
	est P loss kg/ha	1.2	1.1	0.8	0.8
	N conversion Efficiency	33%	39%	39%	39%
Statistics	Cowshed	36 Rot	36 Rot	36 Rot	36 Rot
	Feed infrastructure	NIL	NIL	NIL	NIL
	Herd Figures	BW 162/189 PW	BW 107/128 PW	BW 112/135 PW	BW 112/135 PW
	Industry BW/PW	BW 110/122 PW	BW 64/73 PW	BW 64/73 PW	BW 64/73 PW
	Effluent Storage	Clay pond 1M L	Clay pond 1M L	Clay pond 1M L	Lined pond 3M L
	% farm effluent applied to	44Ha 29%	51Ha 35 %	51Ha 34%	51Ha 34%
	Soils are a mix of Clays and Sands, on largely flat terraced contour				
	Operational regrassing via crop and regrassing ~ 15% per year				
	3 permanent staff members are employed - with no relief staff required to cover time off or calf rearing duties.				

NOTES

SEASON TO DATE

	Year to date 10/09/18	2015-2016	2016-2017	2017-2018	2018-2019	Notes
Stock	Milking Platform	160	146	148	148	
	Cows on farm	458	432	422	409	1
	Peak cows	445	423	418	405	
	Cows calved 10 Sep	431	420	421	401	
	Cows in vat today 10 Sep	412	410	389	398	2
	Herd BCS at PSC 3 July	4.7	4.8	5.0	5.3	
	Peak stocking rate	2.78	2.90	2.82	2.73	
Production	Total kgMS Season to date to factory	33,694	34,308	35,500	35,500	3
	MS/cow/day - last 10 days	2.00	1.95	2.00	2.12	4
	MS/ha/day - last 10 days	4.81	5.32	5.07	5.38	
	MS/cow Season to date	76	81	85	88	
	MS/ha Season to date	211	235	239	239	
	MS/ha from homegrown feed to date	143	163	186	199	5
Feed and Inputs	Average Pasture Cover 1 June	2,142	2,951	2,256	2,430	
	Pasture Cover at 4 September	1,900	1,986	2,371	2,223	
	Pasture grown TDM/ha growth rates	2.4	2.3	3.2	2.5	6
	Reduction in APC TDM/ha	0.2	1.0	0.0	0.2	
	Total pasture supply this year TDM/ha	2.6	3.3	3.2	2.7	
	Home silage on hand fed/ha	0.0	0.1	0.1	0.8	7
	Imported Supplements fed/ha	1.4	1.0	1.1	0.7	
	Total Feed supply TDM/ha	4.1	4.5	4.4	4.1	
	Grass eaten TDM/Ha (grown this year)	2.0	1.7	2.4	1.9	
	Grass eaten TDM/ha (winter cover eaten)	0.0	0.8	0.0	0.2	
	Homegrown feed Harvested TDM/ha	2.0	2.5	2.4	2.1	
	Home silage on hand eaten TDM/ha	0.0	0.1	0.1	0.6	
	Imported Supplements Eaten TDM/ha	1.0	0.7	0.8	0.5	
	Total Feed eaten/ha	3.0	3.3	3.3	3.1	8
	Feed conversion Eff (kgDM/kgMS eaten)	14.1	14.2	13.6	13.1	9
	Nitrogen Applied/effective ha	44	57	40	42	
Inventory feed T DM	Homegrown silage/hay	0	10	50	5	
	PKE in budget for rest of year	218	155	152	204	
	Bought silage hay	61	20	36	0	
	Maize silage	168	200	0	0	
	Total supplements on hand	447	385	238	209	10

* (does not include harvest this year)

NOTES

Owl Farm Numbers – Seasonal Update

"SPRING OR SPRINGBOARD?"

Stocking Rate

1. We currently have 409 cows on farm, of which 2 are MT and waiting to truck out, presently gaining free carcass weight. We are running a lower stocking rate than last year. A function of higher empty rate, insufficient replacements on hand to cover it and a choice to remain as a closed herd.
2. Cows in vat today is higher than a year ago, a pleasing upside of the reduced animal health events this spring. Particularly less cows with mastitis so far 19 vs 27, and fewer recurring or second-treatment-needed cases.

Milk Matters

3. We are milking less cows this year but are targeting more milk out the gate. Our lower 6-week incalf rate has lead to a slower calving spread and with fewer cows calving, early spring milk was always going to be hard to beat. However on 10th September we caught up to last year with very handily identical production out the gate to the same date.
4. With fewer cows the challenge is to feed every cow better to turn the same feed into milk. As we head into the surplus season, fewer mouths controlling quality escalates the challenge, but so far cows have been performing above last year ever day on a per-cow basis.
5. With good stores of homegrown feed and a drive at efficiency our production per hectare from homegrown feed continues to increase, despite a lower total feed supply this season (see notes below).

   We cannot underestimate the importance of feed planning with our feed budget to ensure we position ourselves where we need and want to be. It gives us a reference plan, that ensures we know when we are on or off our target and can adjust accordingly to hit our targets.

Summary of the pantry this spring

6. June growth rates dipped below expectations slightly. July and early August dipped below expectations a lot! To date there is 0.7T/ha less feed grown in paddocks (32% less than last year). With less new grass and annuals, we anticipated a somewhat lower yield, but the gap was much wider than expected.
7. Careful planning in the Autumn via our Feedbudget saw us make dry off decisions based on the feed required to safely manage through winter. Our Summer made silage was very poor quality, but great to keep cows full and warm.

   Our Winter spring feed budget was conservative and planned to leave over 16T of milking quality silage, and not use 40T of the PKE budgeted to purchase. Having these "reserves" in the system proved critical to manage the low growth in July and August. We were able to feed the milkers well, stay on our Spring Rotation Planner and get our cover back to target by acting early in July
8. Our Total Feed eaten/ha for the year is 4% lower than last year for the same amount of milk produced (Season To Date). Of the feed eaten, 83% this year has been grown on Owl Farm, versus 74% of last year's feed to date.
9. With more fat on the back of our cows to put in the vat, and a strong drive at efficiency the same milk from less feed creates a lower (better) feed conversion efficiency for the farm. This is critical to the success of our Farm System, taking more homegrown feed and converting it more efficiently into milk.

   The FCE shown is feed eaten kgDM/kgMS. It is a reasonably inefficent figure by industry comparisons, but that is because a lot of the feed eaten so far this year has been used to support non-lactating cows pre-calving. This will reduce throughout the year.
10. Total supplements available for the season vary for the first two years of Owl farm, to the most recent years with the system change to remove Maize silage form the diet. This year we have only PKE, what we grow on the farm and a small amount of forage from the run-off to get through.

NOTES

MATING PLAN – ALL AB, THAT'S NO BULL!

This year our mating period will be solely AB for the 11.5 week period. The first 6 weeks of AB will be as per normal - to maximise heifer replacement numbers, with a small amount of Beef semen used on poor merit cows. The remainder of AB will use Short Gestation Semen to improve calving spread of the back end of the herd.

WHY ARE WE CHANGING?

It's an important point to note that while the risks associated with *Mycoplasma Bovis* from importing stock are new to us, concerning, and the main reason we considered this strategy they aren't the only reason we chose it.

Bulls

We looked at the option with Bulls and made the following observations about how we could expose ourselves to the least risk if we brought them onto the farm. Without a robust testing regime yet, we can't give ourselves certainty on bulls that have been "traded" during their lives – particularly for 2yr old bulls to use over the herd.

Stud/pedigree bulls from closed herds are likely to have had less interaction with imported stock in their lives, therefore have less risk of encountering and subsequently carrying *M. Bovis*. With a cross-bred herd, simply tailing up with pedigree/stud beef isn't an option for us, and dairy bulls that meet that brief aren't in huge supply – though they can be found.

Our heifers at grazing are still a threat to our biosecurity, as the property has 7 farms worth of heifers. Our heifers still run with tail-up bulls, though non-traded yearling bulls may be easier to find and present a lower *M Bovis* exposure risk.

Benefits of extending AB window

We have a genetically closed herd at the farm, and have done for about 40 years. This means we don't expose ourselves to risks of imported cows, but it also means we don't choose to buy cows to top up our numbers when necessary. As a consequence of last year's mating results, this year our numbers on hand are lower than we'd like. We also don't have a big pipeline of surplus heifers to top up 10-15 animals for the next year or two at least. We did 4 weeks of AB to generate heifers last year – so this year we were extending that to 6 weeks anyway.

The other part of last year's mating was a slowing of the calving rate – Short gestation semen is a fantastic tool for pulling some of those cows forward next season, where mating with bulls would create a normal pregnancy length. Tom normally pulls the bulls out and does the last 10 days of mating as Short Gestation again anyway. This would mean this year there would be 6 weeks of AB, followed by training bulls and 4 weeks of bull mating, then bulls out and 10 days of AB Short gestation at the end.

Considering all the risks of bringing bulls onto the farm for only doing 1/3rd of the mating period, choosing to go all AB on this farm this year is a sound strategy.

CRITICAL RISK MANAGEMENT - HEAT DETECTION ACCURACY AND STAFF FATIGUE.

Heat detection accuracy: It's not just the Manager's job anymore.

1. Tom has been Training our 2IC La Arni since August so she can share the load (meaning Tom can have days off in the roster as usual).
2. We're using heat patches and tail paint all the way through so everyone is always looking at the same set of signals.
3. By the second half of AB we want our Assistant Malou able to share the load aswell.

Staff Fatigue: Tired people can make bad decisions that affect safety, farm performance and mating results. It's a busy time of year with Fert being spread by contractors, Nitrogen to go on, weeds, Pasture quality, Silage and Crops – then there is a big and important chore of AB too.

1. Tom is looking at the roster, sleep-ins, two people detect each day – one herd each to keep eyes fresh and the team rested.
2. We also have relief milking this year from the students in our budget to keep the roster active, but school holidays mean that they're not available the first two weeks of AB.

NOTES

ALL AB VS AB AND BULLS – WEIGHING THE OPTIONS

Below is the summary of pros and cons for Owl Farm. If you're thinking about it for your farm, see the industry advice on the next few pages.

All AB - Pros

- Cost for farm $19,000 slightly cheaper than with bulls
- 2nd 6 weeks - all Short Gestation, Days in milk upside in the following season
- May generate more income from replacement calves
- Removes some of the farm's biosecurity risk by not bringing foreign stock on to the farm

All AB - Cons

- Human Fatigue, making sure team stays fresh for heat detection accuracy
- Smaller SAGs in paddocks with fewer cows cycling each day. Visibility of heat may reduce
- Health and Safety risk of staff being mentally tired
- Risk of losing focus on Farm Management during critical time
- Risk of causing pregnancy loss if inseminating pregnant cows.

6wk AB + Bulls - Pros

- 2nd half heat detection is managed by 10 motivated detectors working 24 hours per day
- Removes risks of tired-human error affecting farm management or mating

6 wk AB + Bulls - cons

- Cost For Farm $21,000 slightly higher than all AB
- Time spent training bulls to manouver around mating times.
- Safety risk to humans from bull behaviour minimised
- Reproductive performance risk from lame or non-tested bulls
- Does not lessen the biosecurity risk of bringing foreign stock on to the farm

NOTES

INDUSTRY ADVICE – AB & BULLS M BOVIS PROTECTION

Extending the AB window – Checklist:

If you don't meet all of these criteria, it does not mean that you can't extend your AB period or adopt all AB. However, you will need to have a good solid plan in place for how you are going to mitigate those criteria you don't meet, so you set yourself and your herd up for a successful mating period.

- Repro performance is at national average or higher
  - A 6-week in-calf rate above 65%
  - A 3-week submission rate of 80% or higher
  - A conception rate of 50% or higher
  - Less than 20% short returns
  - Fewer than 15% cows treated for anoestrous
- Your herd is healthy and primed to have a successful mating
  - BVD free (BVD can have strong reproductive performance consequences)
  - No increase in cow health problems through calving (e.g. milk fever and mastitis)
  - First calvers have reached their target liveweight for calving
  - No increase in late calvers
- You have the skills and staff to carry out prolonged heat detection as extended AB or all AB makes accurate heat detection even more critical as these can increase heat detection to 10-12 weeks.
- Seek advice – Talk to your farm advisor, vet and a farmer that has already extended AB or gone all AB and work out if the cost-benefit fits your plan.

Information supplied by the National Reproductive Strategy Group, members represented from DairyNZ, Federated Farmers of New Zealand, LIC, CRV, Society of Dairy Cattle Veterinarians, New Zealand Veterinary Association, Fonterra, Synlait and Open Country Dairy.

https://www.dairynz.co.nz/animal/reproduction-and-mating/biosecurity-focus-at-mating/
https://www.lic.co.nz/tips-and-advice/thinking-going-no-bull/

Biosecurity NZ have put together a very helpful flier on Bull and Semen Management here:
https://www.biosecurity.govt.nz/dmsdocument/30732-mating-management-service-bulls-and-semen

Biosecurity New Zealand
Tiakitanga Pūtaiao Aotearoa

MYCOPLASMA BOVIS

Mating management – service bulls and semen

The greatest risks of *Mycoplasma bovis* transmission come from infected animals in close prolonged contact in herds, and feeding calves infected milk.

The risk of transmission via semen and embryos is considered low risk. As a precaution, there are questions you can ask your semen supplier.

NOTES

BODY CONDITION SCORING ALL COWS

Individually scoring all cows since March has had some really important outcomes that we think are worth sharing. In March at our Focus day when we discussed the Autumn plan we said "no cow left behind:" We meant it.

Summary: Individual BCS recording is something that we will now do every year. We think 3-4 critical times should be something all farms should do. As a Demonstration farm we will continue to do it monthly for another 18 months atleast.

THE PROCESS

Peter Briston from Cambridge Vets is accredited in Body Condition Scoring and came out roughly monthly and scored all cows in the shed. Dries were run through the shed as well as milkers if possible. The first dry-off group were too close to dry off to come through the shed for the April reading. We weren't able to use the shed in June so there is no June score for individuals.

An important point to note is that cows are recorded at the last definitive score they passed. E.g. while we might go to the paddock and assess a cow as "more than 3.5 and less than 4.0", and we might decide she is closer to a 4 than a 3.5 – we would round her score up and record her as a 4.0. The vet would say (and rightly so), she is not yet a 4, therefore she is recorded as a 3.5.

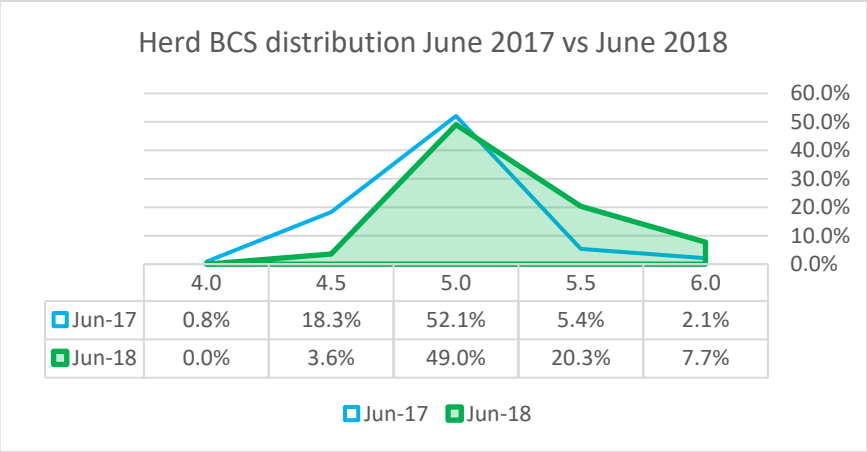
This was difficult for us as it dragged our average down, and possibly skews the true BCS of the herd but it is an accurate reflection of the cows and helps create a risk portfolio for the herd.

THE RESULTS – ABSOLUTELY WORTH IT

Compared to Last year, at the end of June – so basically PSC for us, we had only 4% below BCS 5.0 this year, where as last year it was 19%. It's worth pointing out last year and this year we still had cows gaining weight (cows due to calve after 25 July). So we aren't saying 19% of cows missed their calving target last year.

However given the hard wet and cold winter, having BCS checked off before calving was one less job to deal with. More, we saw the average herd BCS increase further ensuring most cows were safely above their BCS target,

BCS	*Jun-17*	*Jun-18*
6.0	2%	8%
5.5	5%	20%
5.0	52%	49%
4.5	18%	4%
4.0	1%	0%
Average BCS	4.94	5.20



Individual BCS – benefits

Most importantly it gave us the independent list of individual cows in the herd most at risk – which removes any farmer bias when having to chose WHICH are the cows whose BCS at calving is most under threat.

- Reducing BCS range and the number of at risk cows.
- Historic data for any performance issues a cow has in the season (repro or low prod – we have a BCS reference).
- Ensure all animals are on a trajectory for their BCS target in line with their calving date.
- Impartial decision making about at-risk cows

Individual BCS - the challenges

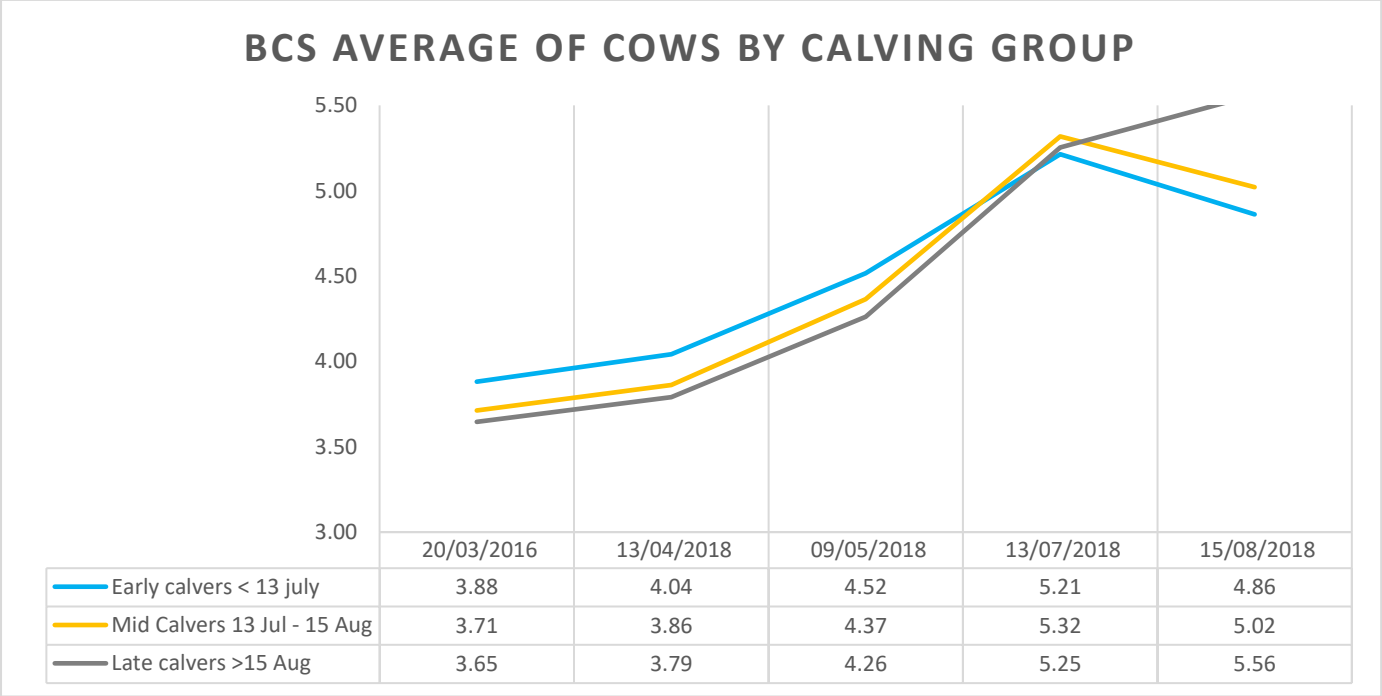
Like all new processes this one gave us a few head scratches and a few emotional challenges.

- Taking the emotion out of the response to the figures and using the information for gain.
- Having a feed budget to feed the cows enough to gain weight is critical.
- Managing at the level of the individual, and having preferential feeding for cows as needed.
- Systems to analyse and interpret the data for ease of use need further development by Industry.

NOTES

Based on the vet data we have also created the chart below that shows the BCS change of cows based on their calving date .

Note in the graph below the Blue line for early calvers averaged over 5 in July when all of this group were in milk.

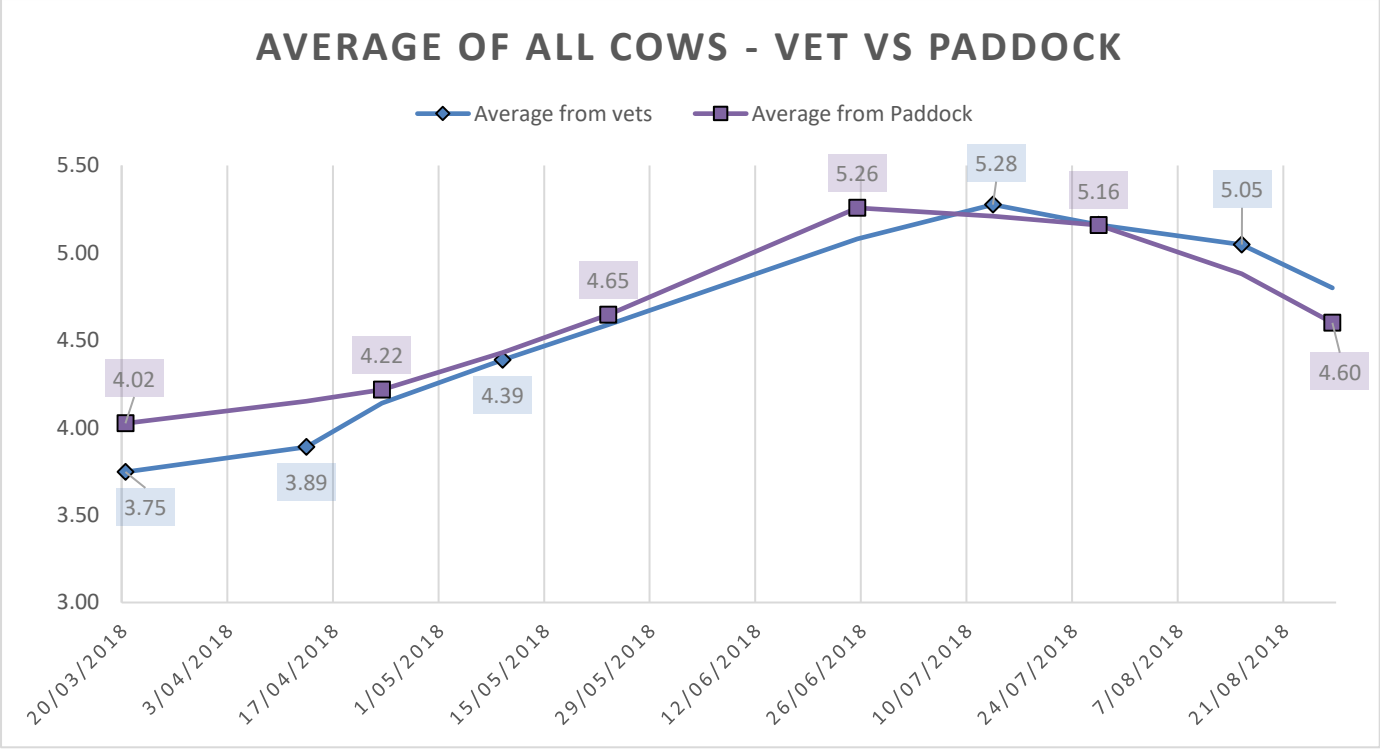


	20/03/2016	13/04/2018	09/05/2018	13/07/2018	15/08/2018
Early calvers < 13 july	3.88	4.04	4.52	5.21	4.86
Mid Calvers 13 Jul - 15 Aug	3.71	3.86	4.37	5.32	5.02
Late calvers >15 Aug	3.65	3.79	4.26	5.25	5.56

Vet vs paddock?

We have always had, and continued to have Wade Bell from DairyNZ score the herd monthly, by walking through the paddock and recording a sample of the herd. There was a difference between the two sets of Data, as Wade was rounding cows both up and down as required.

Interestingly now in Spring we see the paddock assessment coming down faster.

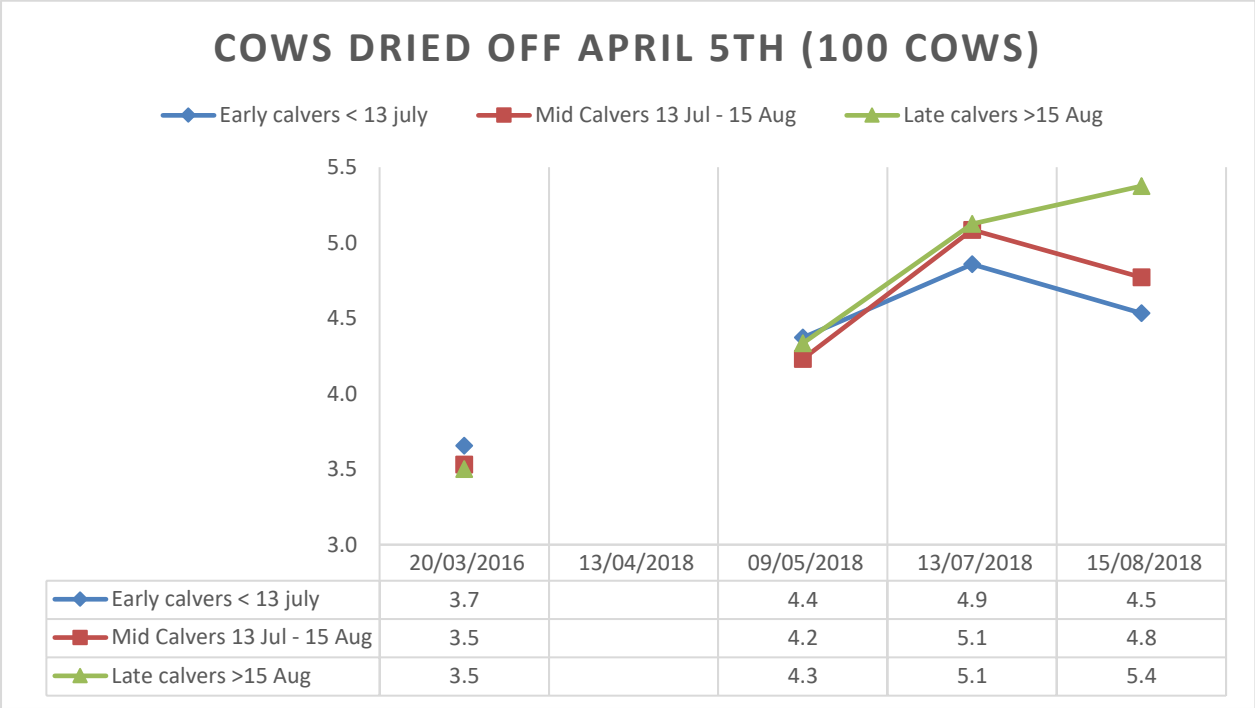


NOTES

BODY CONDTION SCORE REFERENCE

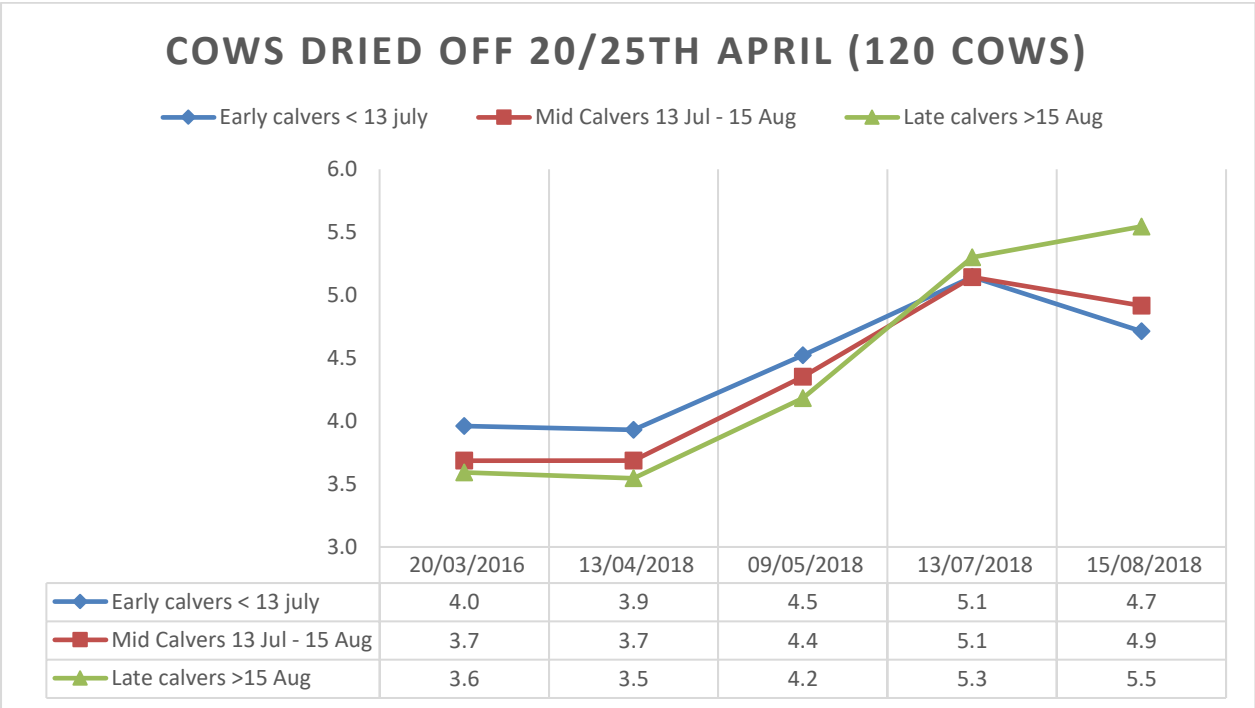
The graphs below shows the average of the cows averaged over their dry off dates. Note for all – the Blue line cows were calved an in milk by the 13th July so this is not a pre-calving figure for them. The average of these cows shows that as in-milk cows with weight gain occurring they were still in excellent condition and likely comfortably over their target when calving occurred.

Note the late calvers (Late August September) were dried off in this early group based on total BCS gain required. With gain starting around 10th April, these cows had likely put on 0.7BCS in one month as dry cows. They were offered 17kg of feed/day/head to do so.



	20/03/2016	13/04/2018	09/05/2018	13/07/2018	15/08/2018
Early calvers < 13 july	3.7		4.4	4.9	4.5
Mid Calvers 13 Jul - 15 Aug	3.5		4.2	5.1	4.8
Late calvers >15 Aug	3.5		4.3	5.1	5.4

With feed tightening up in April these cows largely made no gain in weight for the extra 3 weeks milking but still achieved target by calving.

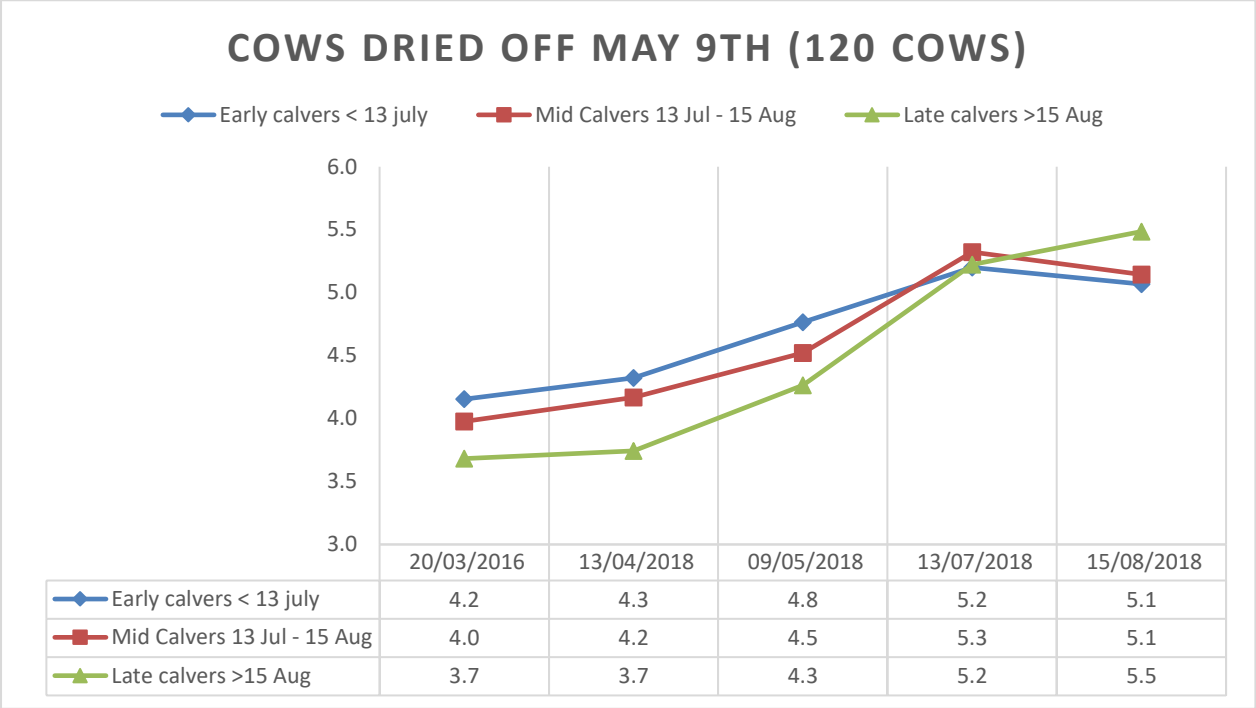


	20/03/2016	13/04/2018	09/05/2018	13/07/2018	15/08/2018
Early calvers < 13 july	4.0	3.9	4.5	5.1	4.7
Mid Calvers 13 Jul - 15 Aug	3.7	3.7	4.4	5.1	4.9
Late calvers >15 Aug	3.6	3.5	4.2	5.3	5.5

NOTES

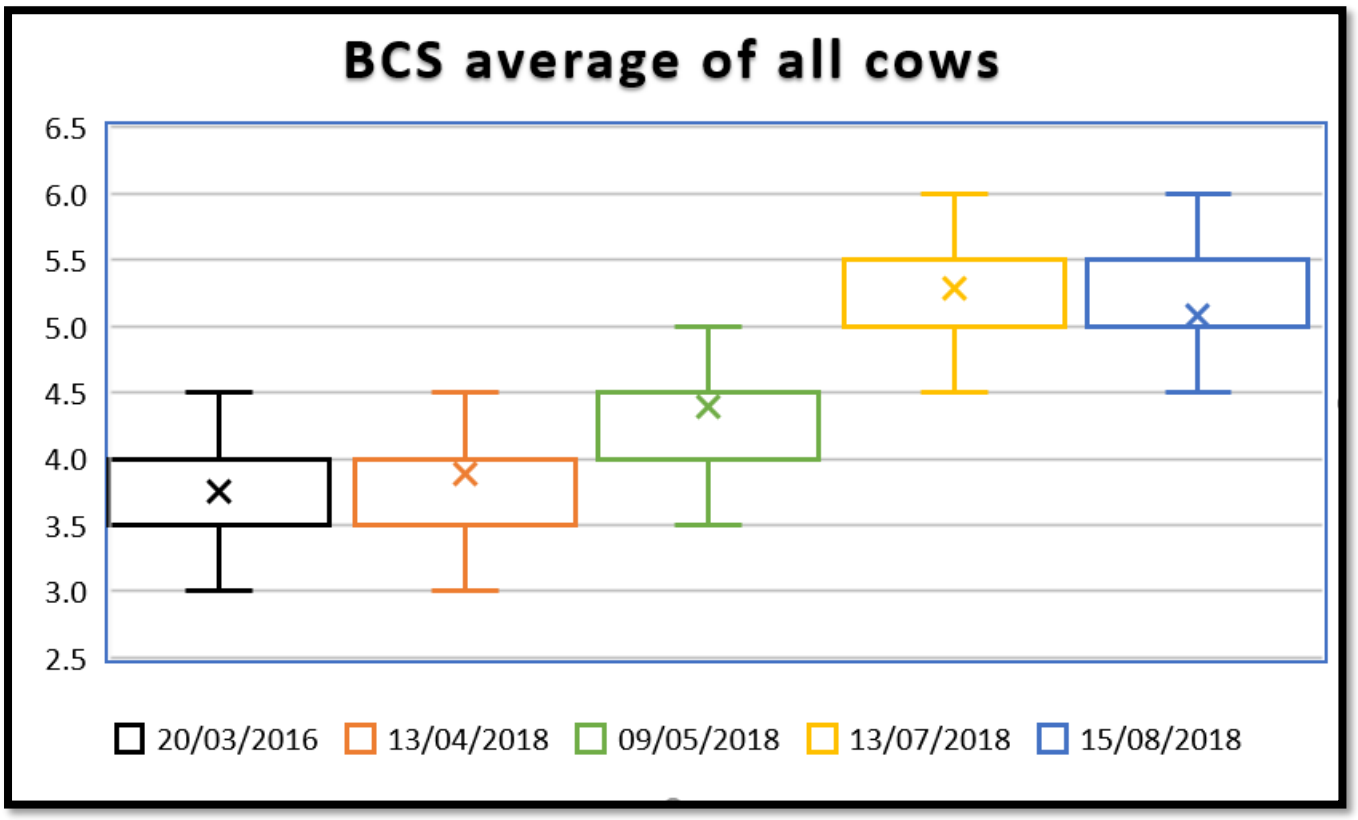
Owl Farm

Note the early calvers in the group who stayed in-milk until May based on high BCS in March still achieved target.



	20/03/2016	13/04/2018	09/05/2018	13/07/2018	15/08/2018
Early calvers < 13 july	4.2	4.3	4.8	5.2	5.1
Mid Calvers 13 Jul - 15 Aug	4.0	4.2	4.5	5.3	5.1
Late calvers >15 Aug	3.7	3.7	4.3	5.2	5.5

The chart below shows the range of BCS at each of the points. The X shows the average of the herd. The Square box represents 50% of the herd and the lines above and below show the range of the group.



NOTES

FINANCIAL PERFORMANCE

CURRENT YEAR FINANCIALS – BUDGET CASHFLOW

Owl Farm - For Year Ended: May 2019

St Peter's School/Lincoln University
Demonstration Dairy Farm

INCOME	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Budget	2017-18 Full Year	Variance Full Year
Milk Solids KG	-	4,943	20,485	24,124	24,108	21,816	20,202	17,589	14,024	14,524	11,044	1,711	174,570	168,169	6,401
Milk cash payments	-	22,362	92,674	111,765	110,163	99,979	89,172	128,347	89,393	103,050	87,488	236,735	**1,171,127**	1,140,532	30,596
Dividends	-	-	-	9,300	-	-	-	-	-	-	37,200	-	**46,500**	54,932	(8,432)
Cattle	4,400	9,492	8,216	4,342	252	1,958	367	4,250	6,800	10,358	13,000	5,900	**69,335**	91,601	(22,266)
Other Income	-	-	-	-	-	-	-	-	-	-	-	-	**-**	5,070	(5,070)
Total Income	**4,400**	**31,854**	**100,890**	**125,407**	**110,415**	**101,937**	**89,539**	**132,597**	**96,193**	**113,408**	**137,688**	**242,635**	**1,286,962**	1,292,135	(5,172)

EXPENSES	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Total	Budget	Variance
Wages	12,584	12,769	13,655	12,892	21,133	12,360	3,368	9,586	11,910	13,251	13,321	22,173	**159,002**	148,858	10,144
Animal Health	7,198	8,440	2,643	1,065	1,248	3,637	1,793	1,561	10,255	6,459	8,400	2,500	**55,199**	51,453	3,746
Breeding	587	37	961	2,126	5,899	17,996	2,765	1,859	1,916	1,080	2,125	1,914	**39,265**	38,692	573
Dairy Shed and Electricity	2,064	3,459	1,566	1,795	2,287	1,878	2,709	2,629	1,706	1,459	2,940	315	**24,805**	21,314	3,491
Purchased Feed	14,840	8,410	11,890	14,050	1,723	2,970	4,400	10,635	17,282	7,503	7,420	7,420	**108,543**	89,836	18,707
Grazing - Replacement Heifers & Calves	4,232	4,018	4,018	4,018	4,018	4,018	7,081	7,039	7,039	7,039	7,039	4,232	**63,792**	62,768	1,024
Fertiliser	6,654	-	6,131	6,850	20,198	15,184	4,964	(293)	3,547	12,971	11,098	-	**87,304**	70,143	17,161
Gibberellic Acid	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-	-
Fertiliser Spreading	-	-	-	1,659	3,895	558	-	-	-	-	-	-	**6,112**	3,834	2,278
Freight	1,747	15	-	400	3,586	2,360	-	-	-	266	900	-	**9,274**	3,910	5,364
Cartage	-	-	120	-	-	1,060	450	-	446	104	894	1,350	**4,424**	7,848	(3,424)
Weeds and Pests	2,500	350	-	350	-	-	606	-	-	-	-	1,250	**5,056**	956	4,100
Consultancy	-	-	235	-	-	-	-	-	-	-	235	-	**470**	608	(138)
Silage	-	-	-	6,750	-	11,250	-	-	-	-	-	-	**18,000**	30,650	(12,650)
Cropping	-	-	-	944	14,688	785	820	574	410	11,484	-	-	**29,705**	17,137	12,568
Regrassing	-	-	4,500	-	-	-	-	-	2,318	15,081	-	-	**21,899**	31,541	(9,642)
R&M	7,118	3,933	4,139	2,853	3,973	4,762	2,790	4,117	5,394	4,455	2,836	1,278	**47,649**	47,210	439
Vehicle Expenses	3,987	2,727	3,861	4,330	2,547	2,619	2,414	2,390	2,188	2,858	2,862	2,485	**35,269**	29,504	5,765
General	180	691	767	2,487	158	160	368	154	162	151	205	164	**5,646**	3,093	2,554
Overheads	1,719	1,719	2,812	6,488	2,812	2,812	6,489	2,812	5,395	1,719	1,719	5,395	**41,890**	57,511	(15,621)
Total Farm Working Expenses	65,410	**46,567**	**57,298**	**69,057**	**88,165**	**84,409**	**41,017**	**43,064**	**69,967**	**85,881**	**61,993**	**50,476**	**763,304**	716,866	46,438
Net Surplus before Financial Charges	(61,010)	(14,713)	43,592	56,350	22,249	17,528	48,521	89,534	26,226	27,527	75,695	192,159	523,658	575,268	

Financial Charges	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Total	Budget	Variance
Interest Cost	15,393	15,719	15,719	15,719	15,719	15,719	15,617	15,515	15,413	15,311	15,209	15,107	**186,160**	183,378	2,782
Lease Land	2,927	2,927	2,927	2,927	2,927	2,927	2,927	2,927	2,927	2,927	2,927	2,927	**35,124**	34,964	160
Total Financial Charges	18,320	18,646	18,646	18,646	18,646	18,646	18,544	18,442	18,340	18,238	18,136	18,034	**221,284**	218,342	2,942
Surplus (Deficit) after Financial Charges	(79,330)	(33,359)	24,946	37,704	3,603	(1,118)	29,977	71,092	7,886	9,289	57,559	174,125	302,374	356,926	(2,942)

NOTES...

NOTES

NOTES

NOTES

2017-2018 SEASON REVIEW

Environment
- N Loss to water est 35kg/ha - Down 15%
- P Loss to water 0.8kg/ha - Down 31%

Profit
- Up 20% on last year + $78k
- Up 15% both $6/kgMS payout + $44K

People
- Hours/week average 49 - down 9%
- 4 safety meetings

Owl Farm

Providing knowledge
St Peter's School/Lincoln University
Demonstration Dairy Farm

Feed
- 16% more homegrown feed pre-Christmas
- 32% less bought in feed full year

Community
- 2,500 Digital reach followers
- 4,277 Visitors on farm

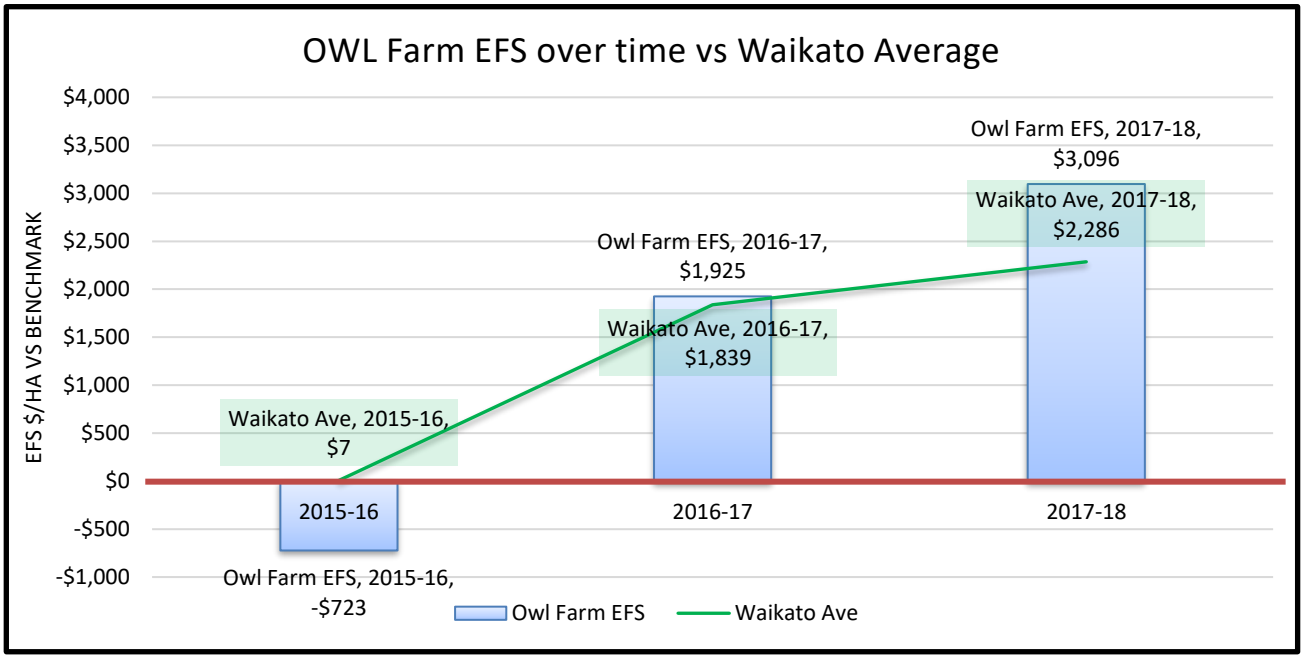
Production
- Down 5.7% on previous
- 402kgMS/cow
- 2% more milk made from homegrown feed

NOTES

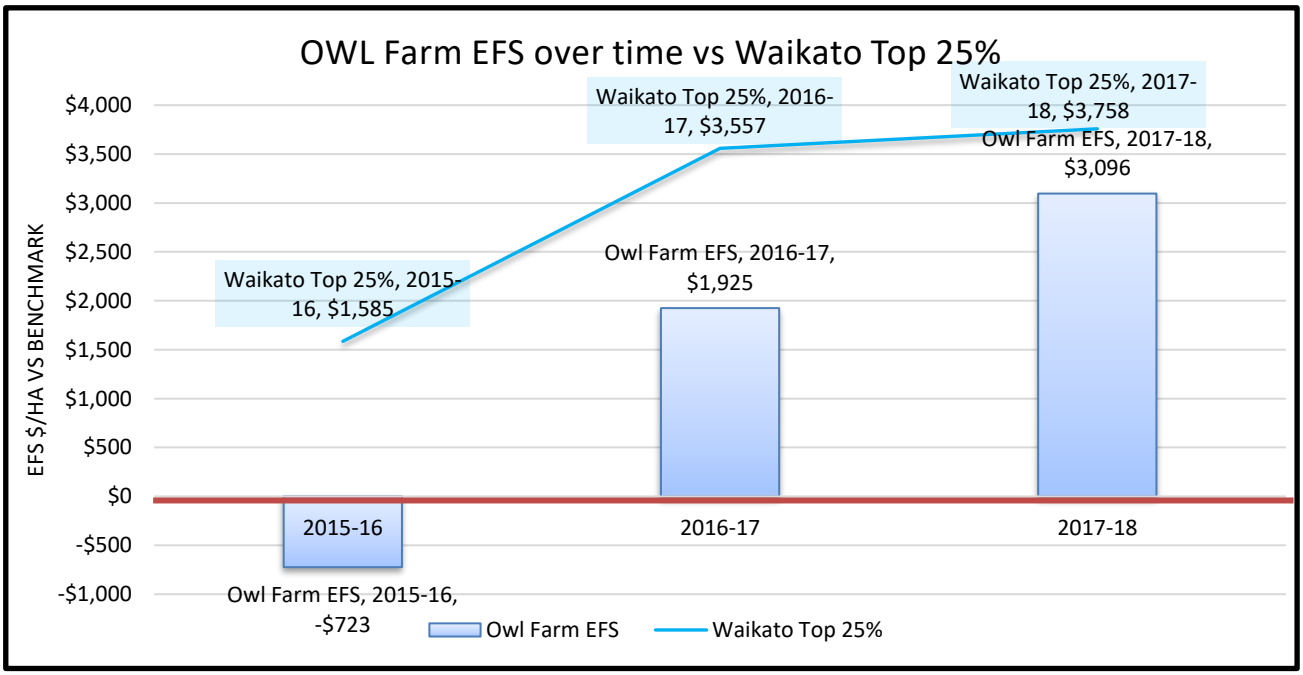
2017-18 BENCHMARKING

The 2017-18 financial result was a favourable one for the farm with significant progress made in stretching our operating profit and reducing our cost of production. The full DairyBase Multi-year reports can be found on the next pages.

Over the last 3 years, Owl Farm profit has made year on year progress of $750 improvement against the Waikato average benchmark. The gap has narrowed principally in reduced spend on purchased feed, but also improving net revenue and other small changes in costs.



The challenge to hunt down and get ourselves into the top 25% for profit is also well underway, with a similar rate of gain in Profit/ha each year. What began as a $2,308/ha gap is now down to $662/ha. Note: below the Waikato Top 25% figure for the 2017-18 year is an estimate at this stage, while we await a fresh DairyBase Benchmark.



NOTES

Compare your figures to ours in the table below. This shows our 2018 cost /ha /cow and /kgMS plus our two prior years /kgMS for reference.

Owl Farm - For Year Ended: May 2018

Owl Farm
Providing knowledge

St Peter's · Cambridge New Zealand

Lincoln University
Te Whare Wānaka o Aoraki
Aotearoa · New Zealand
New Zealand's specialist land-based university

St Peter's School/Lincoln University Demonstration Dairy Farm

FARM WORKING EXPENDITURE COMPARISON

Measure - TO 31/03/2018	Total	$/ha	$/cow	$/kgMS 2018	$/kgMS 2017	$/kgMS 2016	Your figures
Total volume	**Total**	**148**	**418**	**168,169**	**178,294**	**176,197**	**Column1**
Milksolids KG	168,169	1,136	402				
Total Labour Costs	148,858	1,006	356	0.89	0.94	1.15	
Animal Health	47,098	318	113	0.28	0.37	0.25	
Calf Rearing	2,506	17	6	0.01	0.00	0.02	
Breeding	38,692	261	93	0.23	0.25	0.16	
PKE	*58,686*	*397*	*140*	*0.35*	*0.25*	*0.61*	
Grass Silage Harvested	*30,650*	*207*	*73*	*0.18*	*0.16*	*0.08*	
Purchased silage	*24,103*	*163*	*58*	*0.14*	*0.15*	*0.79*	
Cropping	*17,137*	*116*	*41*	*0.10*	*0.15*	*0.06*	
Feed Sampling	*1,208*	*8*	*3*	*0.01*	*0.00*	*0.00*	
Calf Meal	*5,839*	*39*	*14*	*0.03*	*0.03*	*0.02*	
Feed Inventory Adjustment	*-12,800*	*-86*	*-31*	*-0.08*	*0.39*	*-0.40*	
Total Feed Costs	124,823	843	299	0.74	1.14	1.17	
Fertiliser Spreading	3,834	26	9	0.02	0.02	0.11	
Fertiliser - Maintenance	29,031	196	69	0.17	0.19	0.23	
Fertiliser - Nitrogen	41,112	278	98	0.24	0.26	0.21	
Freight	7,848	53	19	0.05	0.06	0.02	
Re-grassing	31,541	213	75	0.19	0.20	0.25	
Heifer grazing costs	66,678	451	160	0.40	0.40	0.46	
Shed Expenses	8,185	55	20	0.05	0.10	0.07	
Electricity	13,711	93	33	0.08	0.08	0.07	
Water Charge	15,471	105	37	0.09	0.08	0.08	
R & M - Land & Buildings	29,350	198	70	0.17	0.13	0.12	
R & M - Plant & Equipment	14,485	98	35	0.09	0.07	0.06	
Vehicle Maintenance	8,460	57	20	0.05	0.05	0.05	
Petrol/Diesel	7,620	51	18	0.05	0.05	0.05	
Weed & Pest Control	956	6	2	0.01	0.00	0.01	
Other Expenses	6,362	43	15	0.04	0.08	0.08	
Rates/ACC/Insurance	43,055	291	103	0.26	0.23	0.27	
Total Farm Working Expenses	**689,676**	**4,660**	**1,650**	**4.10**	**4.69**	**4.88**	

NOTES

Below is a useful benchmark from Westpac, which compares against other farms in the Waikato/Bay of Plenty for the season just gone. Last year our profit was around $350/ha below the benchmark average of this group.

WESTPAC AGRIBUSINESS BENCHMARKING RESULTS 2017/18

Sample Criteria				
Sample size	23	Production share	100%	
Location	All	Cow numbers	All	

			Top	OWL Farm	Average
Customer details	Owned land area	ha		130	269
	Lease area	ha		25	9
	Total land area	ha		155	278
	Effective milking platform	eff ha		148	200
	Number of Cows			418	624
Physical performance	Total Production	kgMS		168,169	229,045
	Share of Production	kgMS		168,169	229,045
		%	100%	100%	100%
	Physical Performance Ratios	kgMS/total ha	616	1,085	823
		kgMS/eff ha	1,225	1,136	1,143
		kgMS/cow	417	402	367
Financial performance	Gross Farm Income (GFI)			$1,232,041	$1,495,457
	Farm working expenses			$719,276	$872,944
	Lease costs			$34,964	$10,320
	Total farm costs (TFC)			$754,240	$883,264
	EBITDA (EFS)			$477,801	$612,193

		Top	OWL Farm	Average
Financial Performance Ratios	GFI/ha (eff ha) - milking platform	$9,603	$8,325	$7,463
	TFC/ha (eff ha) - milking platform	$3,957	$5,096	$4,408
	EFS/ha (eff ha) - milking platform	**$5,646**	$3,228	**$3,055**
	GFI/kgMS (prod. share)	$7.84	$7.33	$6.53
	TFC/kgMS (prod. share)	$3.23	$4.49	$3.86
	EFS/kgMS (prod. share)	**$4.61**	$2.84	**$2.67**

Notes:

- EFS = net income prior to drawings, tax, depreciation, debt servicing, and capex.
- Lease costs are included above the line.
- Owners wages not included in costs.

NOTES

DAIRYBASE DATA

DairyBase
Platform for growth

Multiyear Financial Detail (total $)

Owl Farm (Farm ID: 375316)
Dairy Season ended: 2018

Printed: 10 September 2018

	2017-18	2016-17	2015-16	2014-15
Business Type : Region	OO:Waikato	OO:Waikato	OO:Waikato	
Milking Area (ha)	148.0	146.0	151.0	
Peak Cows	418	423	465	
Milksolids Kg	168,169	178,294	176,197	

	2017-18		2016-17		2015-16		2014-15	
GROSS FARM REVENUE (GFR)	**Total $**	**% of GFR**	**Total $**	**% of GFR**	**Total $**	**% of GFR**	**Total $**	**% of GFR**
Net Milk Sales	1,135,370	94.3%	1,062,385	93.3%	681,516	88.7%		
Net Dairy Livestock Sales	91,601	7.6%	76,407	6.7%	108,235	14.1%		
Value of Change in Dairy Livestock	-22,364	-1.9%	-1,084	-0.1%	-22,538	-2.9%		
Other Dairy Revenue	0	0.0%	432	0.0%	1,326	0.2%		
DAIRY GROSS FARM REVENUE	1,204,607	100.0%	1,138,140	100.0%	768,539	100.0%		
Non-Dairy Cash Income					0	0.0%		
Value of Change in Non-dairy livestock					0	0.0%		
Total Gross Farm Revenue					768,539	100.0%		
OPERATING EXPENSES								
Labour Expenses								
Wages	148,858	12.4%	157,520	13.8%	195,723	25.5%		
Labour Adjustment - Non-paid	0	0.0%	0	0.0%	0	0.0%		
Labour Adjustment - Management	0	0.0%	0	0.0%	0	0.0%		
Total Labour Expenses	148,858	12.4%	157,520	13.8%	195,723	25.5%		
Stock Expenses								
Animal Health	47,098	3.9%	59,431	5.2%	42,506	5.5%		
Breeding & Herd Improvement	38,692	3.2%	37,701	3.3%	23,349	3.0%		
Farm Dairy	8,185	0.7%	16,088	1.4%	11,836	1.5%		
Electricity (Farm Dairy, Water Supply)	13,711	1.1%	13,462	1.2%	11,290	1.5%		
Total Stock Expenses	107,686	8.9%	126,682	11.1%	88,981	11.6%		
Feed Expenses								
Supplement Expenses								
Net Made,Purchased, Cropped	131,784	10.9%	123,331	10.8%	265,189	34.5%		
Less Feed Inventory Adjustment	12,800	1.1%	-68,100	-6.0%	63,800	8.3%		
Calf Feed	5,839	0.5%	8,765	0.8%	7,410	1.0%		
Total Supplement Expenses	124,823	10.4%	200,196	17.6%	208,799	27.2%		
Grazing & Support block Expenses								
Young & Dry Stock Grazing	66,678	5.5%	67,798	6.0%	62,200	8.1%		
Winter Cow Grazing	0	0.0%	0	0.0%	0	0.0%		
Support block Lease	9,625	0.8%	0	0.0%	0	0.0%		
Owned Support block Adjustment	0	0.0%	0	0.0%	0	0.0%		
Total Grazing & Support block expenses	76,303	6.3%	67,798	6.0%	62,200	8.1%		
Total Feed Expenses	201,126	16.7%	267,994	23.5%	270,999	35.3%		
Other Working Expenses								
Fertiliser	35,643	3.0%	33,334	2.9%	91,849	12.0%		
Nitrogen	41,112	3.4%	46,236	4.1%	0	0.0%		
Irrigation	0	0.0%	0	0.0%	0	0.0%		
Regrassing	31,541	2.6%	38,024	3.3%	22,052	2.9%		
Weed & Pest	956	0.1%	248	0.0%	1,204	0.2%		
Vehicles	5,084	0.4%	25,027	2.2%	8,052	1.0%		
Fuel	7,620	0.6%	8,053	0.7%	8,630	1.1%		
R & M - land & buildings	25,786	2.1%	20,784	1.8%	26,459	3.4%		
R & M - plant and equipment	20,367	1.7%	11,658	1.0%	15,499	2.0%		
Freight and General	3,275	0.3%	3,643	0.3%	15,153	2.0%		
Total Other Working Expenses	171,384	14.2%	187,007	16.4%	188,898	24.6%		
Overheads								
Administration	5,849	0.5%	13,967	1.2%	21,647	2.8%		
Insurance	21,790	1.8%	20,628	1.8%	21,000	2.7%		
ACC	6,561	0.5%	9,259	0.8%	8,728	1.1%		
Rates	30,175	2.5%	21,041	1.8%	28,719	3.7%		
Depreciation	52,979	4.4%	52,980	4.7%	52,980	6.9%		
Total Overheads	117,354	9.7%	117,875	10.4%	133,074	17.3%		
DAIRY OPERATING EXPENSES	746,408	62.0%	857,078	75.3%	877,675	114.2%		
Non-Dairy Operating Expenses					0	0.0%		
Total Operating Expenses					877,675	114.2%		
OPERATING PROFIT								
DAIRY OPERATING PROFIT	458,199	38.0%	281,062	24.7%	-109,136	-14.2%		
Non-Dairy Operating Profit					0	0.0%		
Total Operating Profit					-109,136	-14.2%		

NOTES

Multiyear Financial Detail (per Ha)

DairyBase® Platform for growth

Owl Farm (Farm ID: 375316)
Dairy Season ended: 2018

Printed: 10 September 2018

Benchmark Group Selected by:	Profitability analysis Region : Waikato	Farm business type : 1- Owner operator
Benchmark Group Ranked by:		

	2017-18		2016-17		2015-16	
Number in Benchmark Group:		1 (DairyNZ Estimate)		268		288
Kg Milksolids/ha	1,136	1,020	1,221	1,117	1,167	1,130
Kg Milksolids/cow	402	363	421	382	379	383
Cows/FTE	144	140	141	150	160	152

GROSS FARM REVENUE (GFR)	2017-18		2017-18		2016-17		2015-16	
	Total $	**% of GFR**	**Farm**	**BM**	**Farm**	**BM**	**Farm**	**BM**
Net Milk Sales	1,135,370	94.3%	7,671	6,734	7,277	6,590	4,513	4,423
Net Dairy Livestock Sales	91,601	7.6%	619	480	523	576	717	636
Value of Change in Dairy Livestock	-22,364	-1.9%	-151	24	-7	8	-149	-47
Other Dairy Revenue	0	0.0%	0	44	3	41	9	46
DAIRY GROSS FARM REVENUE	1,204,607	100.0%	8,139	7,283	7,795	7,214	5,090	5,059
Total GFR (incl non-dairy)							5,090	
OPERATING EXPENSES								
Labour Expenses								
Wages	148,858	12.4%	1,006	579	1,079	811	1,296	794
Labour Adjustment - Non-paid	0	0.0%	0	7	0	59	0	63
Labour Adjustment - Management	0	0.0%	0	469	0	259	0	266
Total Labour Expenses	148,858	12.4%	1,006	1,054	1,079	1,129	1,296	1,123
Stock Expenses								
Animal Health	47,098	3.9%	318	247	407	264	281	248
Breeding & Herd Improvement	38,692	3.2%	261	147	258	151	155	141
Farm Dairy	8,185	0.7%	55	69	110	68	78	56
Electricity (Farm Dairy, Water Supply)	13,711	1.1%	93	132	92	130	75	127
Total Stock Expenses	107,686	8.9%	728	595	868	613	589	571
Feed Expenses								
Supplement Expenses								
Net Made,Purchased, Cropped	131,784	10.9%	890	985	845	1,150	1,756	1,106
Less Feed Inventory Adjustment	12,800	1.1%	86	12	-466	45	423	21
Calf Feed	5,839	0.5%	39	0	60	54	49	37
Total Supplement Expenses	124,823	10.4%	843	973	1,371	1,159	1,383	1,122
Grazing & Support block Expenses								
Young & Dry Stock Grazing	66,678	5.5%	451	243	464	359	412	304
Winter Cow Grazing	0	0.0%	0	0	0	26	0	29
Support block Lease	9,625	0.8%	65	74	0	51	0	60
Owned Support block Adjustment	0	0.0%	0	49	0	64	0	69
Total Grazing & Support block expenses	76,303	6.3%	516	366	464	499	412	461
Total Feed Expenses	201,126	16.7%	1,359	1,339	1,836	1,658	1,795	1,583
Other Working Expenses								
Fertiliser	35,643	3.0%	241	491	228	436	608	352
Nitrogen	41,112	3.4%	278	0	317	68	0	68
Irrigation	0	0.0%	0	0	0	4	0	3
Regrassing	31,541	2.6%	213	67	260	79	146	66
Weed & Pest	956	0.1%	6	35	2	43	8	36
Vehicles	5,084	0.4%	34	225	171	150	53	138
Fuel	7,620	0.6%	51	0	55	36	57	36
R & M - land & buildings	25,786	2.1%	174	0	142	253	175	169
R & M - plant and equipment	20,367	1.7%	138	363	80	115	103	97
Freight and General	3,275	0.3%	22	52	25	53	100	47
Total Other Working Expenses	171,384	14.2%	1,158	1,233	1,281	1,235	1,251	1,010
Overheads								
Administration	5,849	0.5%	40	117	96	139	143	138
Insurance	21,790	1.8%	147	74	141	64	139	62
ACC	6,561	0.5%	44	27	63	25	58	24
Rates	30,175	2.5%	204	141	144	121	190	123
Depreciation	52,979	4.4%	358	417	363	391	351	417
Total Overheads	117,354	9.7%	793	775	807	740	881	764
DAIRY OPERATING EXPENSES	746,408	62.0%	5,043	4,996	5,870	5,375	5,812	5,051
Total Operating Exp. (incl non-dairy)							5,812	
OPERATING PROFIT								
DAIRY OPERATING PROFIT	458,199	38.0%	3,096	2,286	1,925	1,839	-723	7
Total Operating Profit (incl non-dairy)							-723	

NOTES

Owl Farm

CROP & NEW GRASS PLAN 2018-19

Crop and Regrass	Area (ha)	Notes	Cultivars
Spring Patch up undersowing	4.0	Broadcast to fill in gaps	Ecotain
Spring sown Summer Turnip	8.0	Split sow 10/10 & 25/10	CleanCrop Bulb Turnip
Spring sown Summer graze	2.0	Sow 10/10 multi graze	Raphno
Grass to grass run-out pasture	8.1	Weak river terrace needs new species	Diploid ryegrass, Cocksfoot, Ecotain & White Clover
Permanent pasture after crop	10.0		Ryegrass or Rye/Cocksfoot, Ecotain & White Clover
Plantain paddock top up	4.0	Plantain paddocks expected to thin	Diploid ryegrass, Cocksfoot, & White Clover
Autumn Sown Annuals	6.0	Drive winter yield ahead of crop	Winter Star II
Total Area regrassed	**26.1**	**18% of Farm**	

OWL FARM WEEKLY MONITOR WALK

We have a weekly monitor walk of the top block of the farm – approximately 80 ha that will be completed at 11am every Tuesday. These walks are open to the farming community, so individuals, groups, visitors and students can share the experience with us and enjoy some robust discussion as we work to ensure we get the best estimate of what the cows are being fed.

The other outcome of these walks is hopefully a further opportunity to engage with other farmers for advice and support in both directions! So feel free to drop by and bring your own platemeter, probe, or eye-ometer to the Demonstration office, leaving at 11am Tuesdays!

NOTES

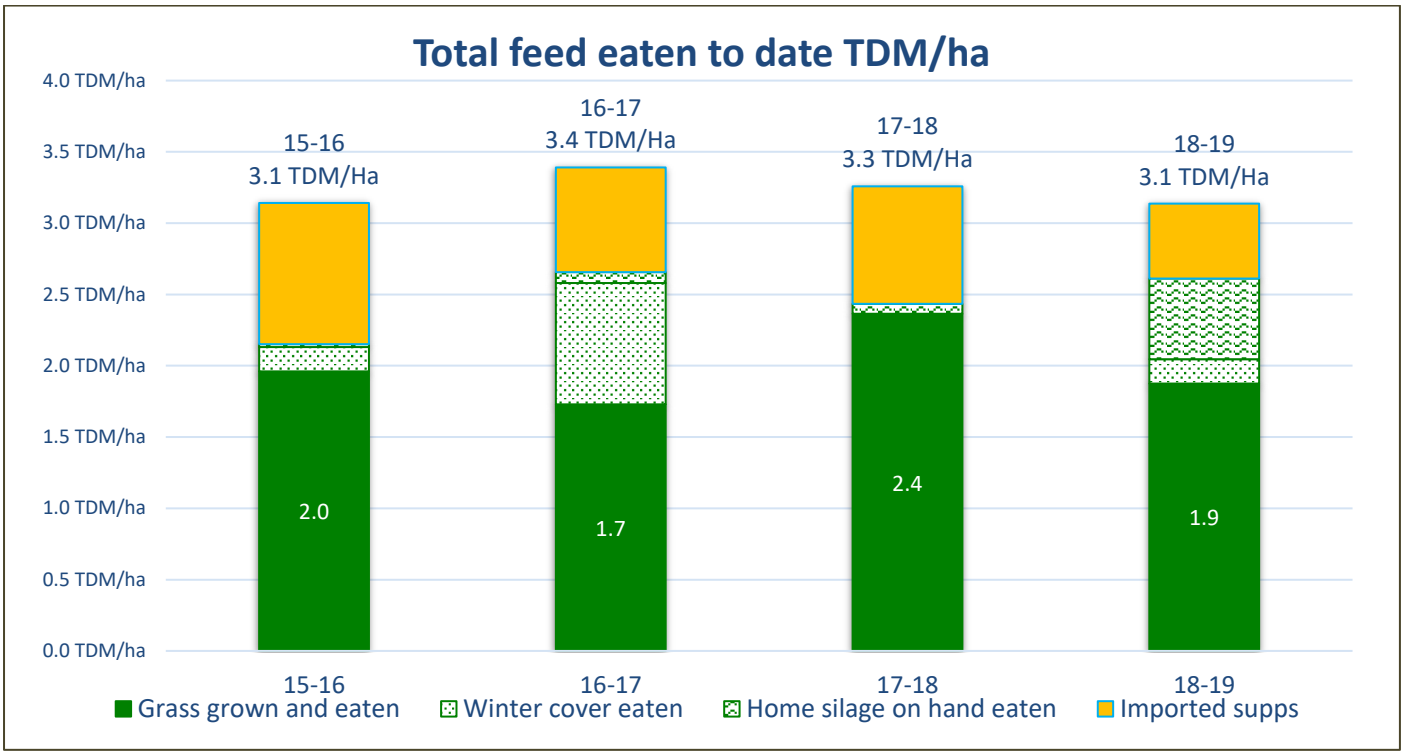
SUMMARY DATA

FEED INFORMATION

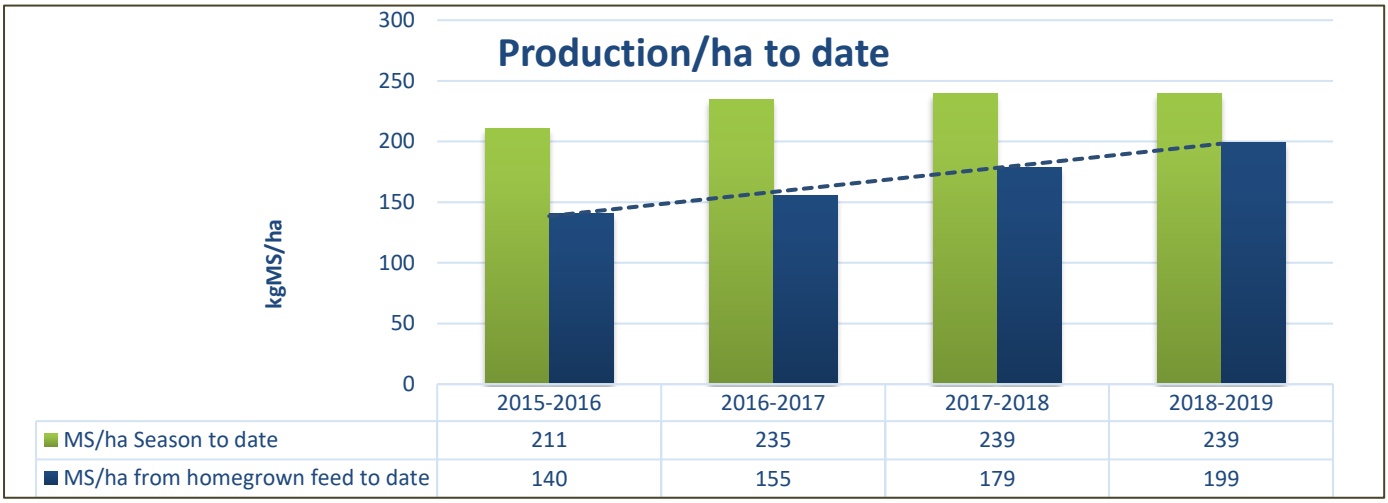
A cold and wetter winter has seen our growth compared to last year lag behind by about 0.8TDM/ha YTD (32% less grass grown). Primarily this deficit was in a poor growing July and August though there was small deficits in June and early September also.

With a strong emphasis on homegrown feed for 4 years, this season we rolled into 1 June with significant amounts of homegrown forage on hand meaning we are depending less on imported feeds to fill early season feed deficits. Our total feed supply used to date is down on last season by 4%, in large part due to lower growth and lower cover on hand at present. Our homegrown feed harvested this year is only down 13%.

To date 83% of the feed used this season was produced on Owl Farm including silages harvested in prior years, compared to 67%, 78%, and 74% over the last 3 years.



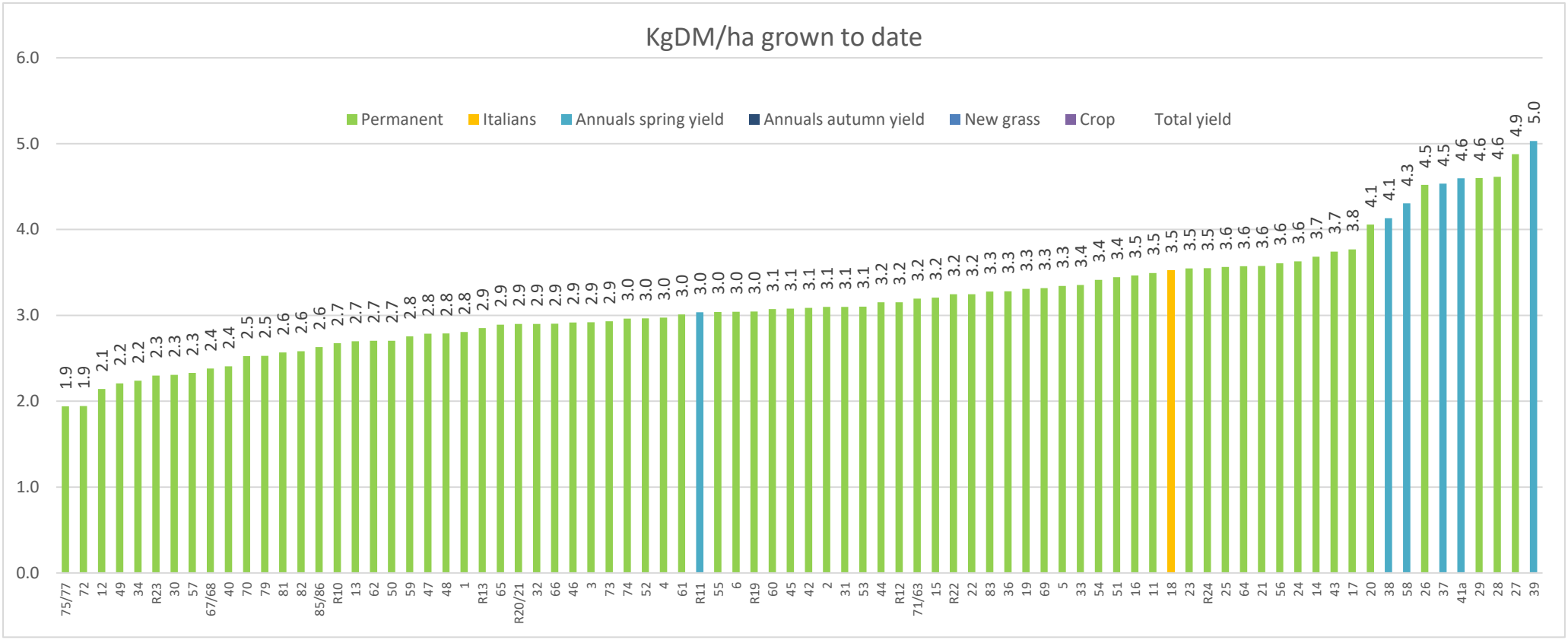
Despite lower feed used we have produced identical amounts of milk 35,300kgMS to the 10th of September. The "same milk from less feed" scenario relates to both a more aggressive strategy on feed this year, but better cow condition at start of calving making its way into the vat.



NOTES

On a paddock by paddock basis we see a strong variation in yield to date – with the best paddocks outgrowing the worst by over 200%. The worst paddocks in order, receive no fert or Nitrogen (75/77), was the main springer paddock (72), is run out and going to Turnips this spring (12), is a poor river terrace that cannot improve (49,34), is run out and going to Annuals in the Autumn for cropping next year (30), unusually ow performance, slow recovery post drying off in May in here – expect recovery (57).

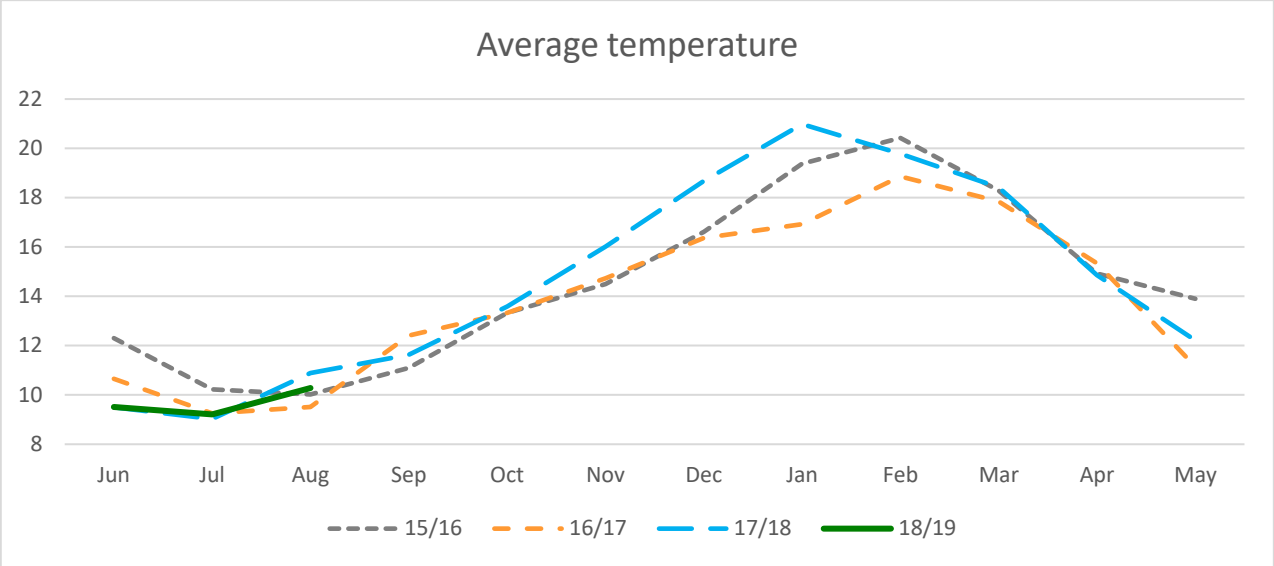
The blue paddocks of spring annuals are to be expected, and the top performing permanent grass paddocks are out Autumn sown new grass. Getting it in early in Autumn meant these paddocks had 2 grazings before June 1st. Please note the mid-wedge blue paddock is only 40% in annuals (extra .8ha of land we leased this year is in annuals, the balance is in an old pasture and the paddock will be cropped this spring.

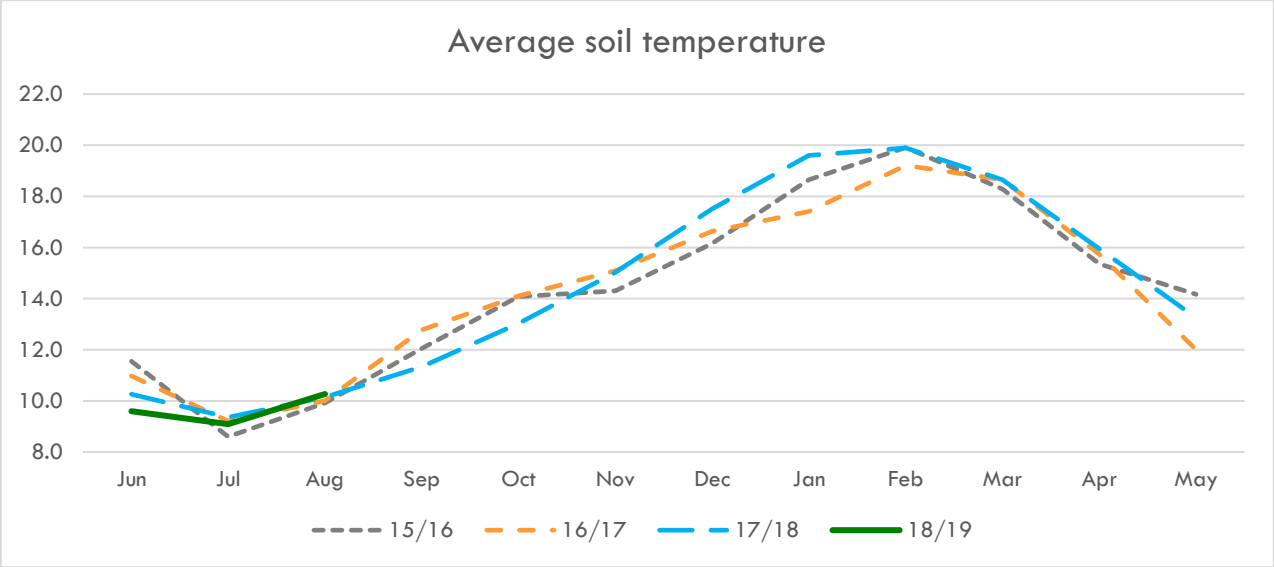


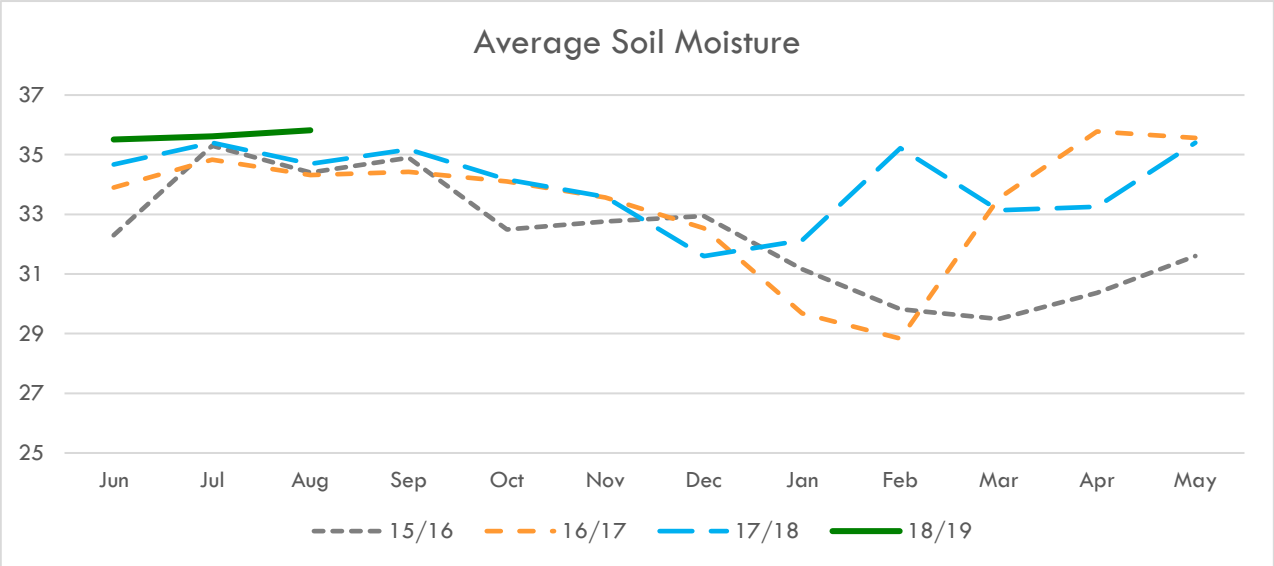
NOTES

Owl Farm

CLIMATE

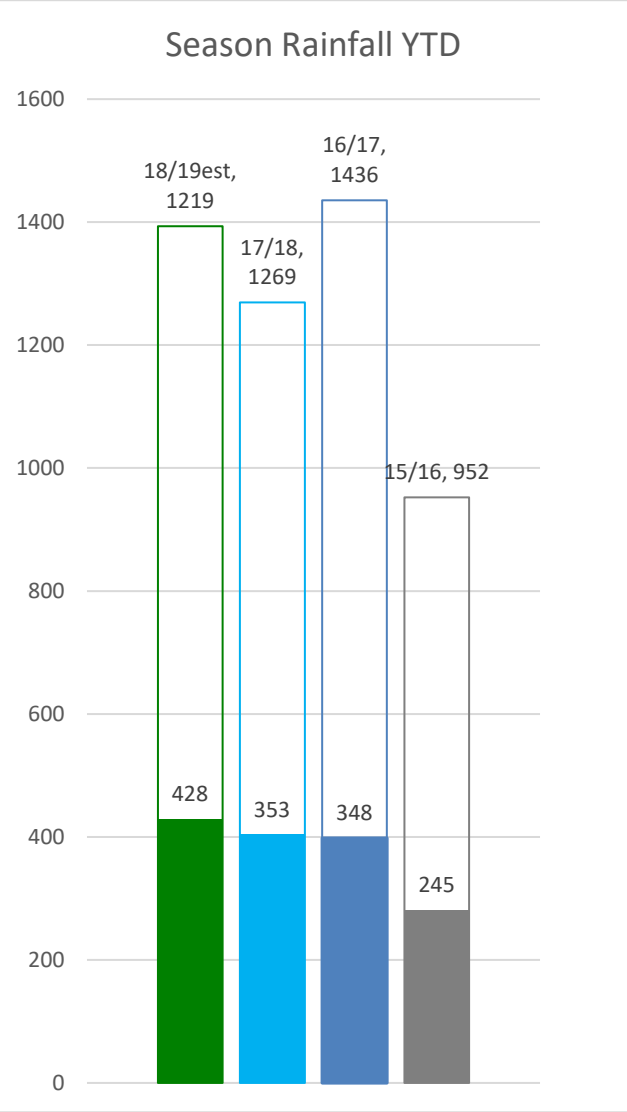


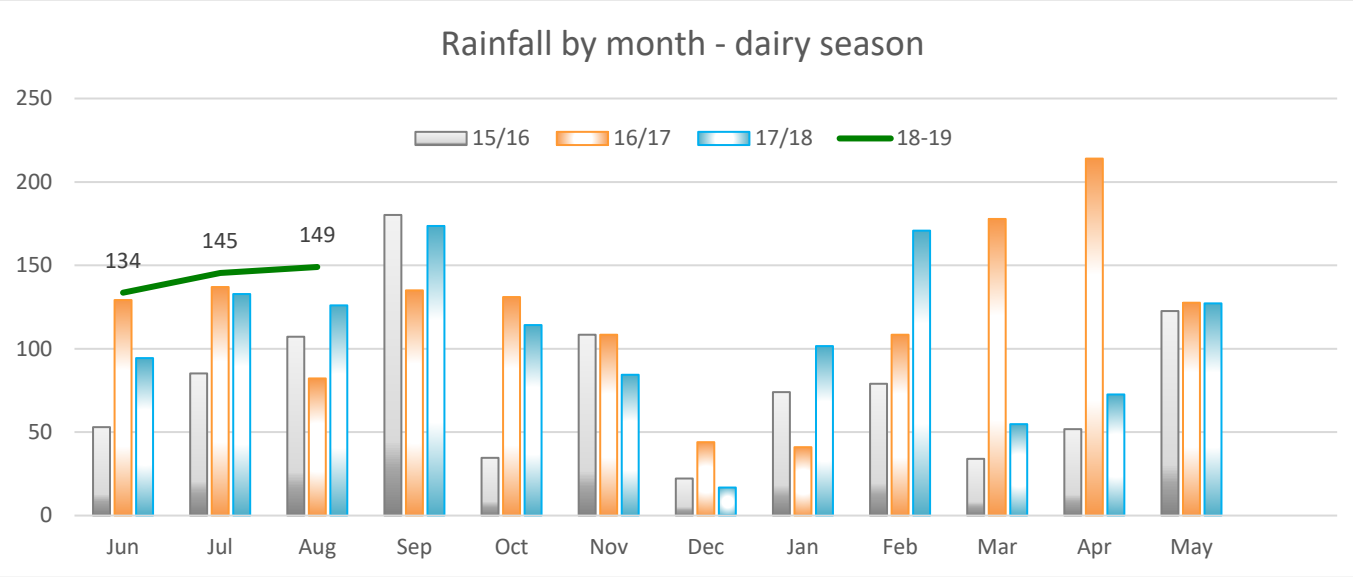


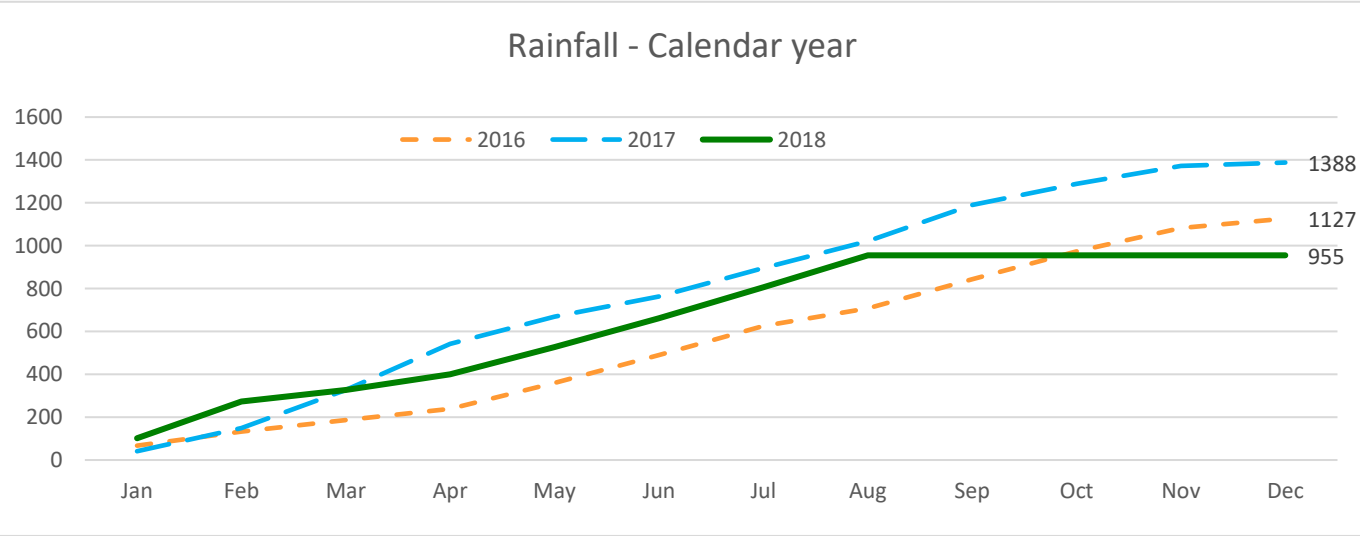


NOTES

RAINFALL

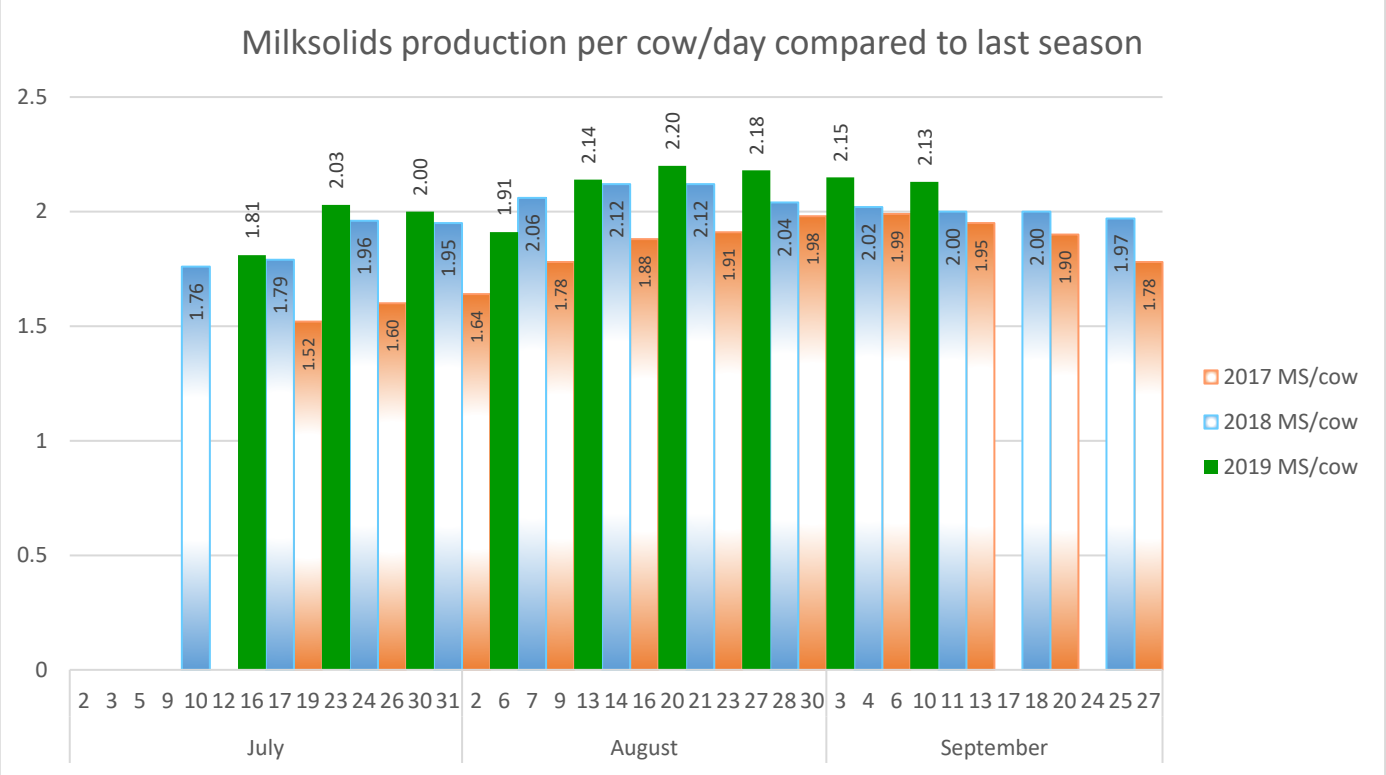


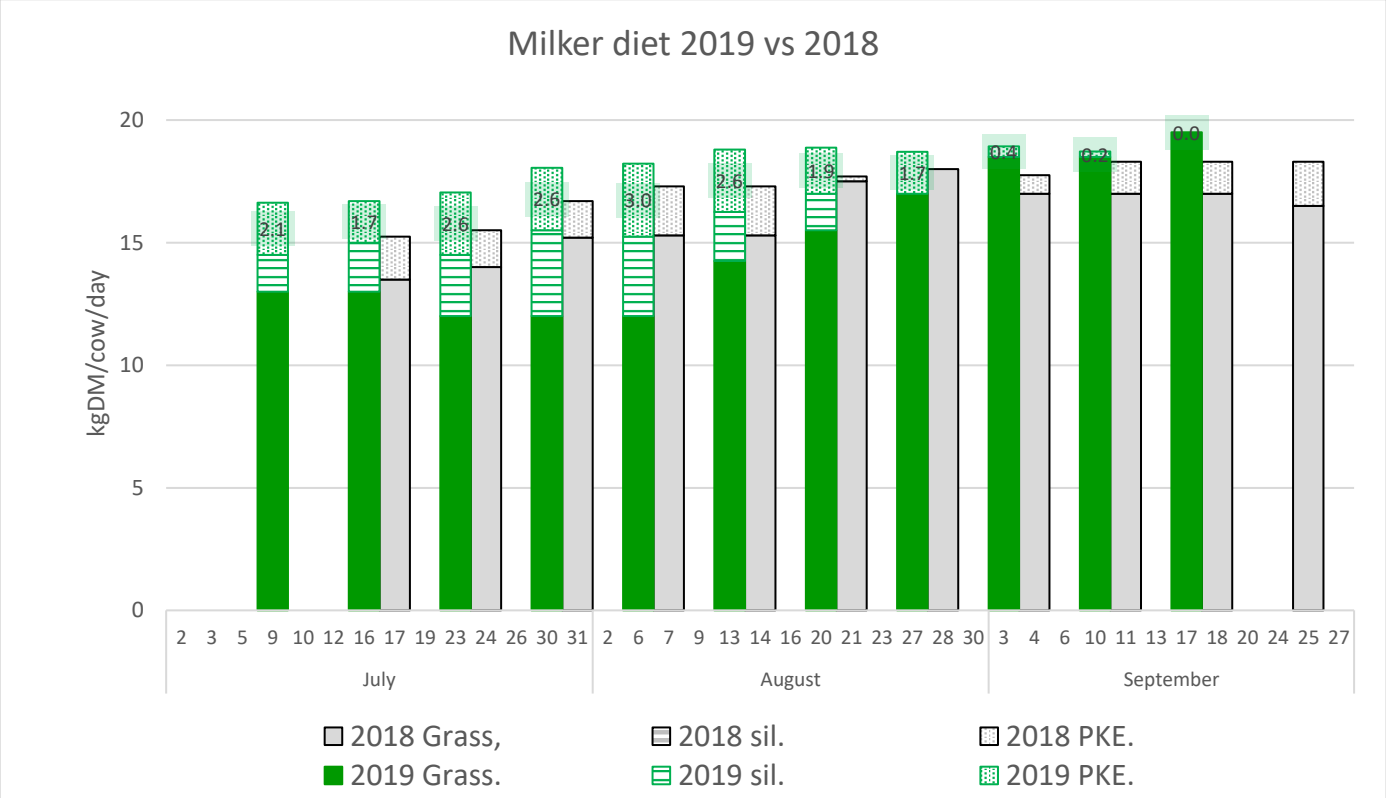




NOTES

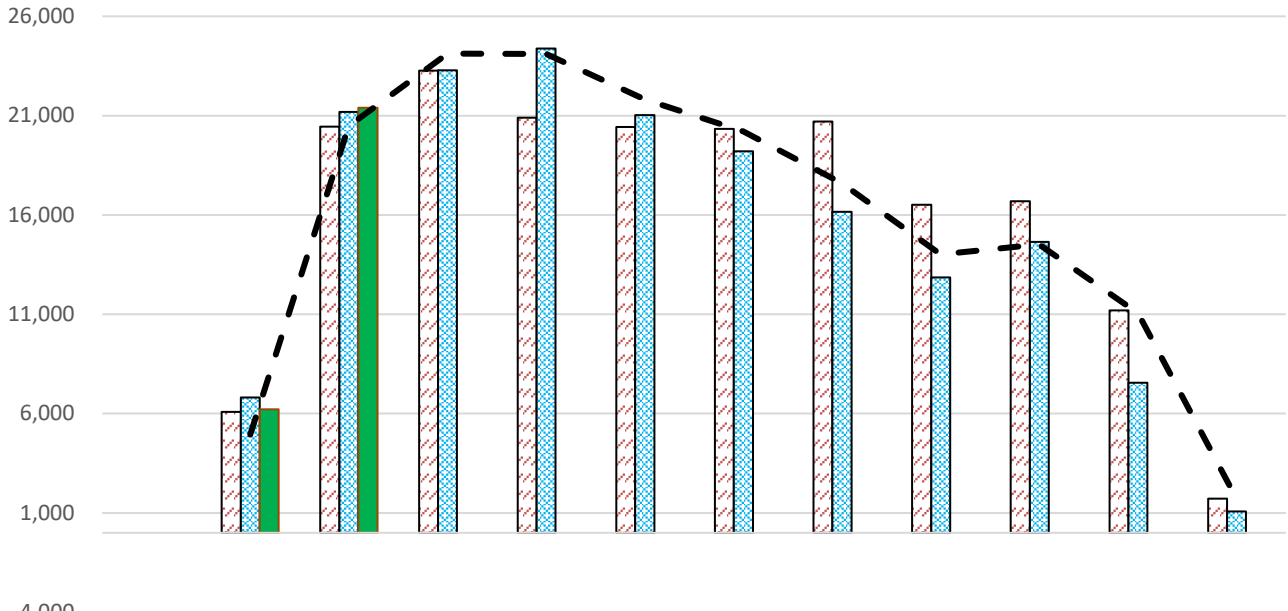
PRODUCTION





NOTES

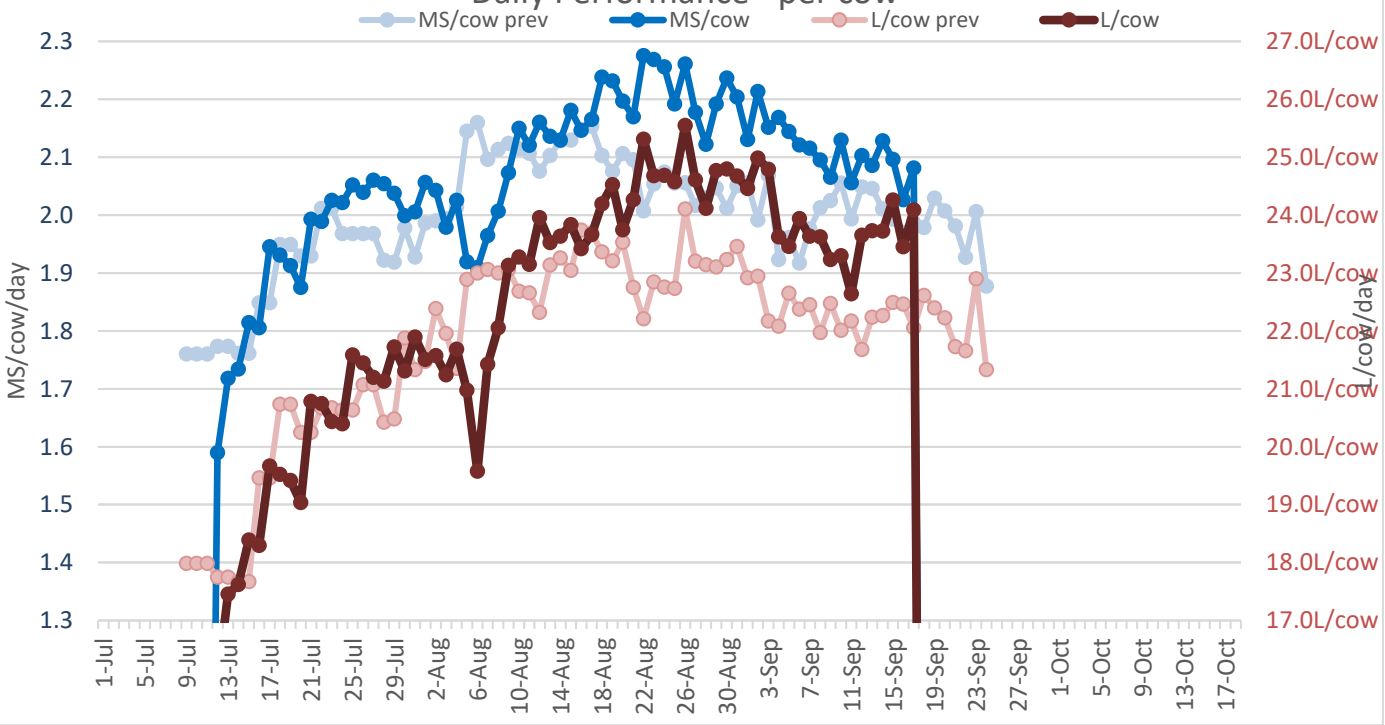
Production: Monthly Performance



	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
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									
Budgeted 18/19		4943	20485	24124	24108	21816	20202	17589	14024	14524	11044	1711

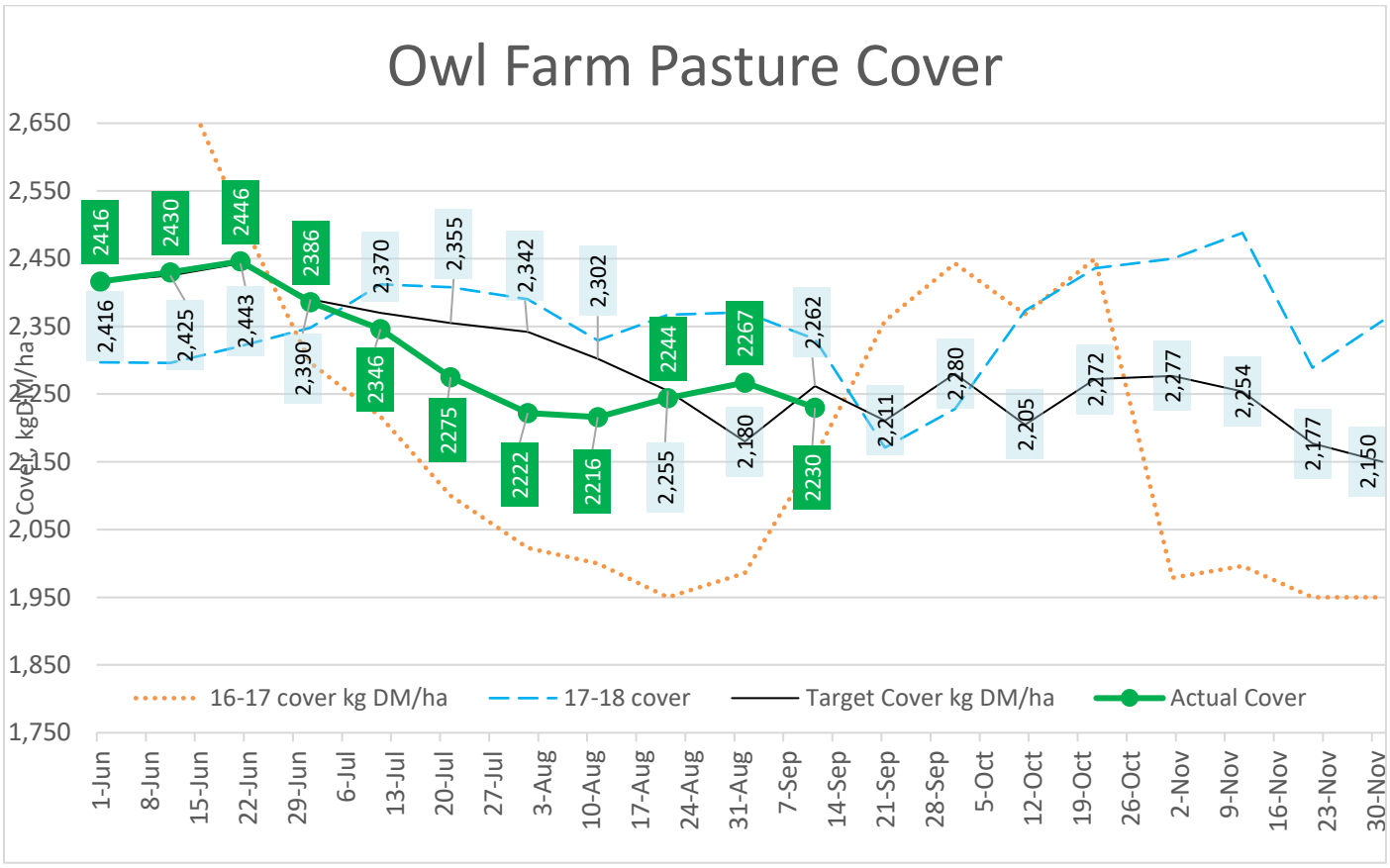
16/17 production 17/18 production 18/19 Production Budgeted 18/19

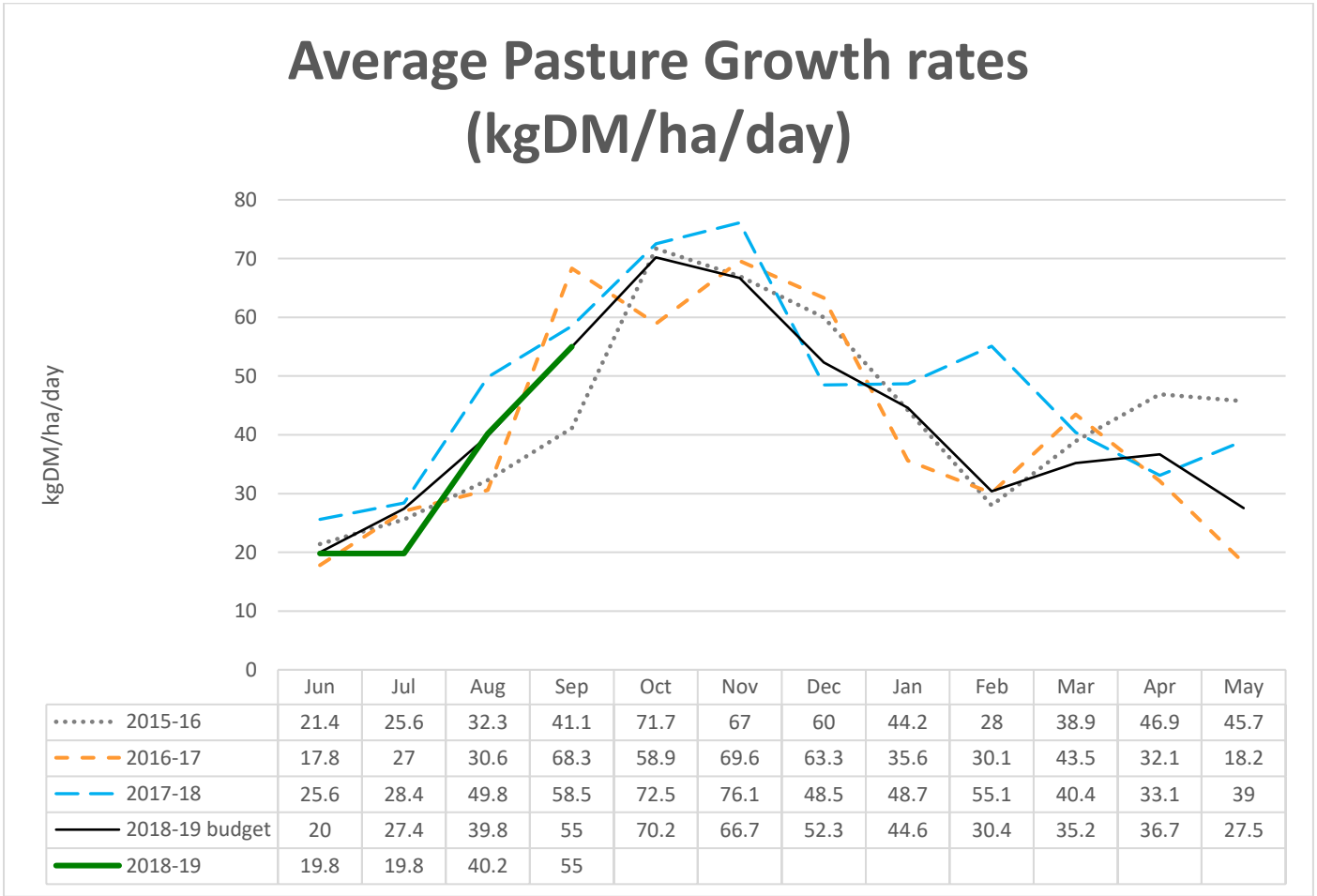
Daily Performance - per cow



NOTES

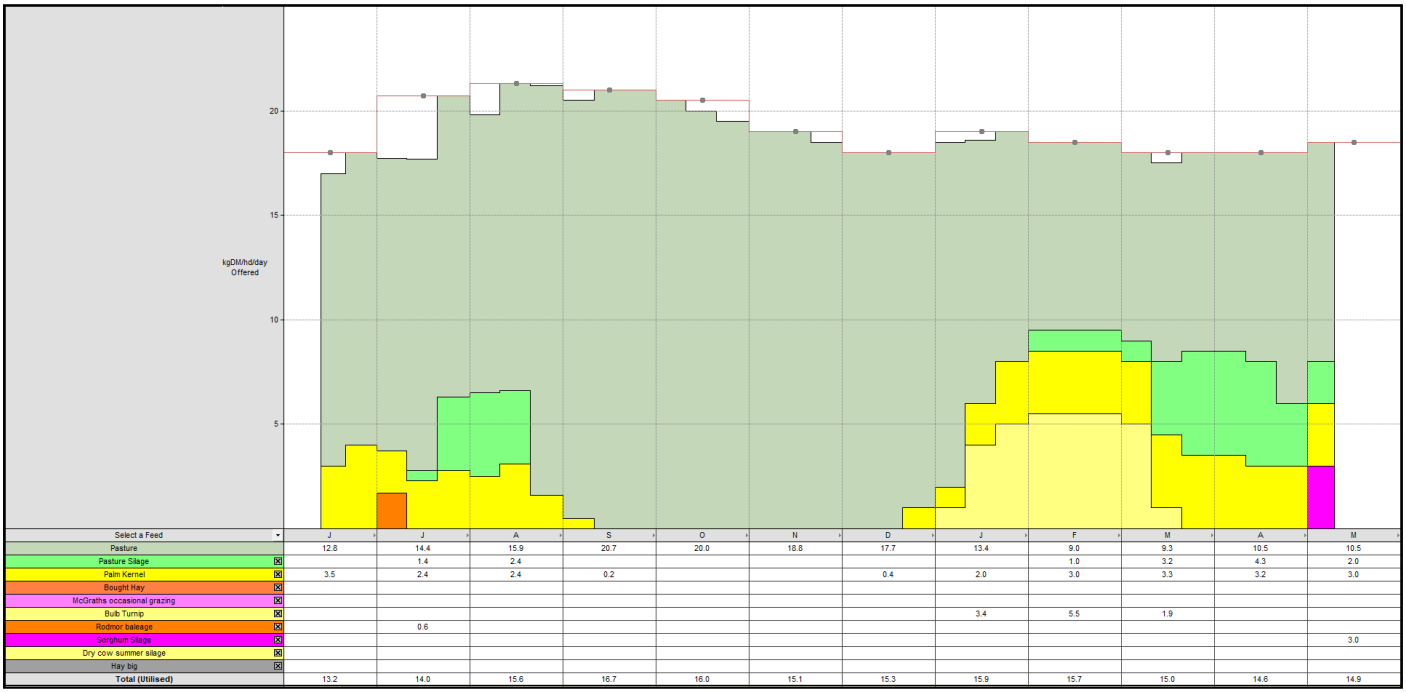
Owl Farm





	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2015-16	21.4	25.6	32.3	41.1	71.7	67	60	44.2	28	38.9	46.9	45.7
2016-17	17.8	27	30.6	68.3	58.9	69.6	63.3	35.6	30.1	43.5	32.1	18.2
2017-18	25.6	28.4	49.8	58.5	72.5	76.1	48.5	48.7	55.1	40.4	33.1	39
2018-19 budget	20	27.4	39.8	55	70.2	66.7	52.3	44.6	30.4	35.2	36.7	27.5
2018-19	19.8	19.8	40.2	55								

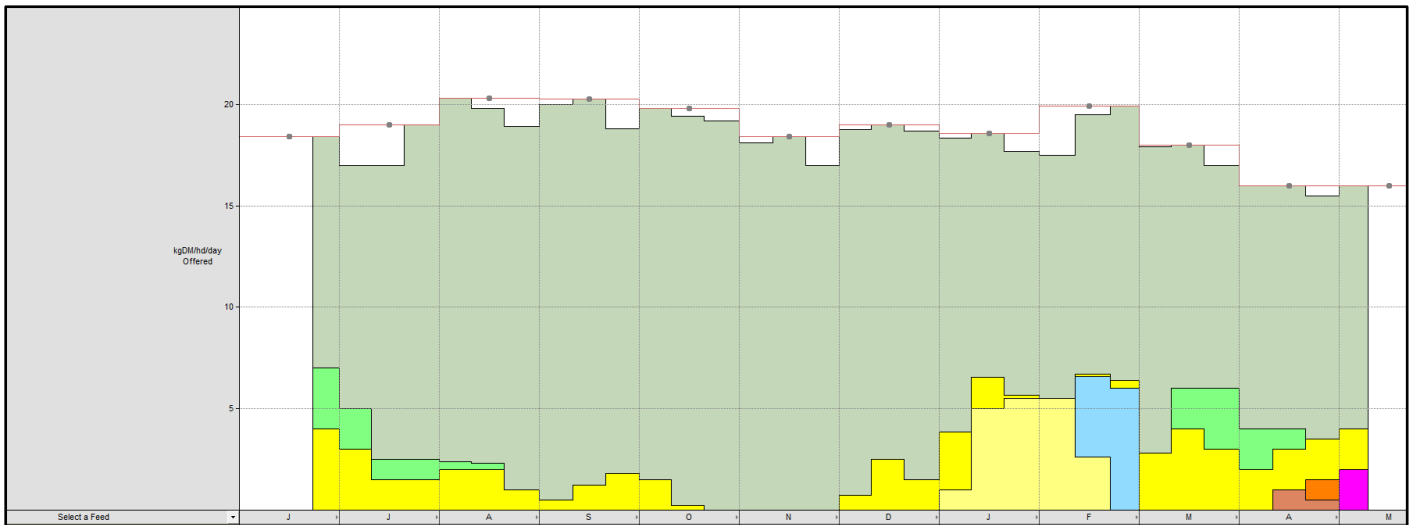
SEASONAL FEED BUDGET



Select a Feed	J	J	A	S	O	N	D	J	F	M	A	M
Pasture	12.8	14.4	15.9	20.7	20.0	18.8	17.7	13.4	9.0	9.3	10.5	10.5
Pasture Silage		1.4	2.4						1.0	3.2	4.3	2.0
Palm Kernel	3.5	2.4	2.4	0.2			0.4	2.0	3.0	3.3	3.2	3.0
Bought Hay												
McGraths occasional grazing												
Bulb Turnip								3.4	5.5	1.9		
Rodmor baleage		0.6										
Sorghum Silage												3.0
Dry cow summer silage												
Hay big												
Total (Utilised)	13.2	14.0	15.6	16.7	16.0	15.1	15.3	15.9	15.7	15.0	14.6	14.9

Supplementary feed use throughout the 2018-2019 season

Supplementary feed use to date and forecast throughout the 2017-2018 season



Select a Feed	J	J	A	S	O	N	D	J	F	M	A	M
Pasture	11.0	14.3	17.8	18.5	18.9	17.8	17.2	12.8	12.8	12.7	12.0	12.0
Pasture Silage	3.0	1.3	0.2							1.7	1.0	
Palm Kernel	4.0	2.0	1.6	1.2	0.6		1.6	1.5	0.1	3.3	2.0	2.0
Bought maize silage												
Super dry baleage												
Bought Hay												
McGraths occasional grazing												
Forage Rape									3.1			
Bulb Turnip								3.9	2.9			
Sorghum Silage												2.0
Dry cow summer silage												
Hay big												
Rodmor baleage											0.3	
Baleage											0.5	
Total (Utilised)	13.9	15.0	15.4	14.9	15.6	14.3	16.0	15.1	15.6	14.9	13.3	13.1

Owl Farm

Providing knowledge

St Peter's School/Lincoln University
Demonstration Dairy Farm

St Peter's · Cambridge
New Zealand

Lincoln University
Te Whare Wānaka o Aoraki
AOTEAROA · NEW ZEALAND
New Zealand's specialist land-based university

Next Farm Focus Day

Wednesday 21 November, 2018

Weekly Monitor Walk

Tuesdays, 11am

Like us on Facebook
facebook.com/OwlFarmNZ

Follow us on Twitter
twitter.com/OwlFarmNZ