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, 21 November 2018

PROVIDING KNOWLEDGE

Owl Farm Season Update: Less Cows, no less milk. How does the cashflow look so far?

Summer prep – What KPIs should we focus on and what tactics and trigger point will help us achieve them?

Global Marketplace – Westpac Economist Anne Boniface updates on the Global Marketplace from a Farmer's perspective.

OPUS LIC PGG WrightsonSeeds DairyNZ Ballance NEW ZEALAND FARM SOURCE

NOTES

NOTES

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

CONTENTS

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

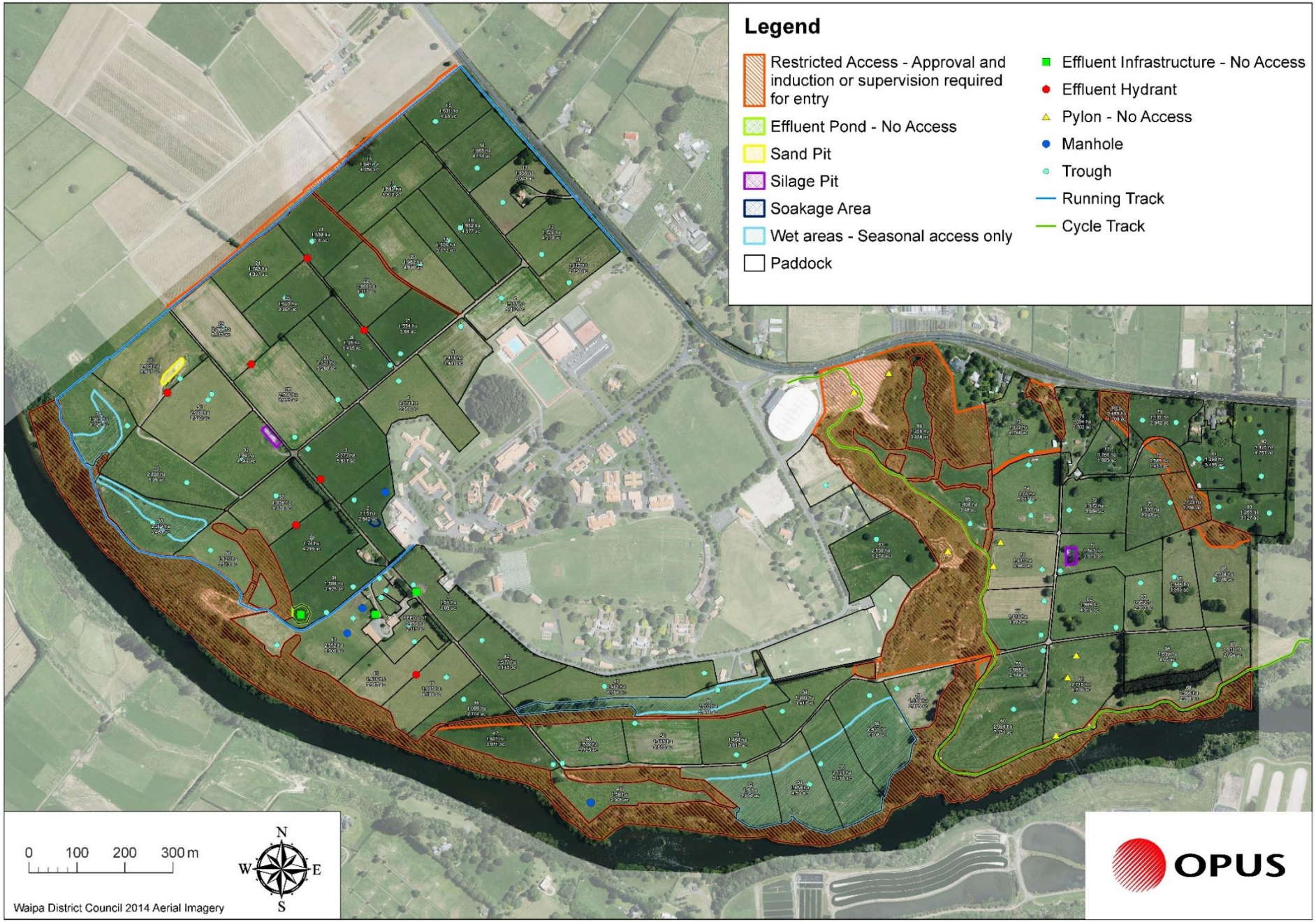
- Louise Cook – Demonstration Manager 027 808 5777
- Tom Buckley – Farm Manager 021 058 4916

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

OWL 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.

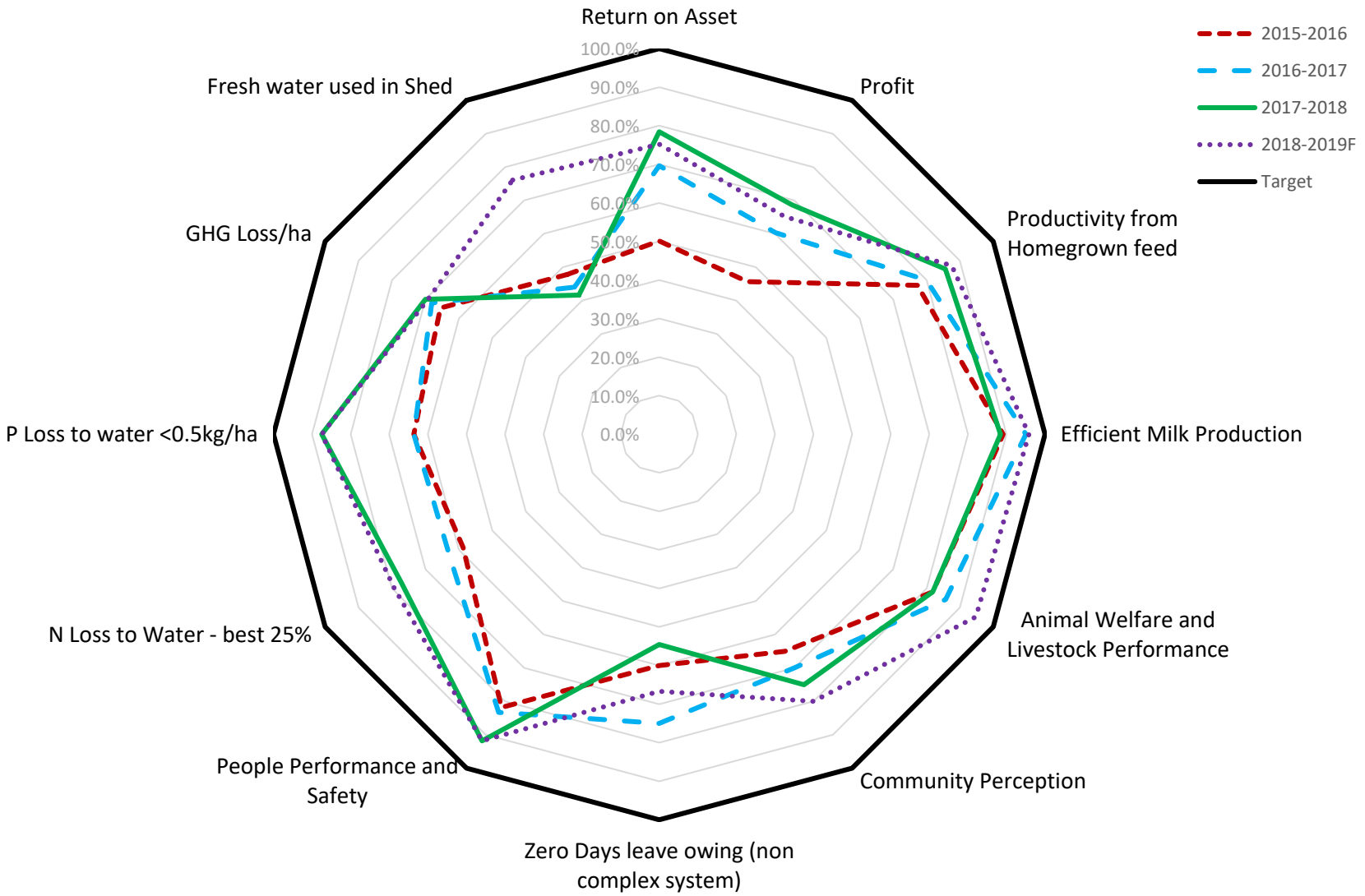
b. Stage 2 Objective (2018/19 – onwards)

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 closer to the black line we get, the closer we are to our goals. This tool allows us to evaluate performance in all the areas that are importance to us. With each item creating tension on the others on the wheel to keep our performance improvements balanced.



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 (ha)	160	146	148	147
	Effective area Leased (ha)	23	18	18	18
	Leased Run off (ha)	3	7	5	3 full year + 14 Nov-May
	Cows Wintered	470	453	441	419
	Peak Cows (1 Nov)	445	423	418	406
	Peak Stocking Rate Cows/ha	2.78	2.90	2.82	2.76
Production	Total kgMS	176,197	178,294	168,169	177,000
	MS/cow	396	421	402	436
	MS/ha	1,101	1,221	1,136	1,202
	MS/ha from homegrown feed	879	952	978	1024
	MS AS % lwt	85.2%	90.6%	86.5%	93.8%
	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	$6.85
	Cash Farmgate milk price /kgMS (dairybase)	$3.46	$5.52	$6.39	$6.16
	Accrued Farmgate milk price /kgMS	$3.90	$6.12	$6.66	$6.21
	Stock Sales /kgMS	$0.48	$0.43	$0.54	$0.38
	Dividend /kgMS	$0.41	$0.44	$0.36	$0.26
	FWE/kgMS	$4.97	$4.15	$4.28	$4.28
	OPEX/kgMS(inc depn & feed inv)	$4.91	$4.81	$4.53	$4.57
	EFS/ha actual payouts (cash milk rev) Dairybase	-$723	$1,925	$3,096	$2,739
	EFS/ha actual payouts (accrued milk rev)	-$144	$2,742	$3,446	$2,783
	EFS/ha @ $6.00 farmgate milk price	$1,426	$1,883	$2,291	$2,208
	Opening Debt/kgMS held	$20.00	$23.02	$21.23	$21.00
Enviro	est Nitrogen loss kg/ha	46	41	35	33
	est P loss kg/ha	1.2	1.1	0.8	0.8
	GHG Loss ton CO_2/ha	12.7	13.3	13.0	13.1
	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

DAIRYBASE BENCHMARKING MULTIYEAR

DairyBase
Platform for growth.

Multiyear Financial Detail (per Ha)

Owl Farm (Farm ID: 375316)
Dairy Season ended: 2018
Printed: 1 October 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:		29		268		288
Kg Milksolids/ha	1,136	1,160	1,221	1,117	1,167	1,130
Kg Milksolids/cow	402	402	421	382	379	383
Cows/FTE	144	156	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	7,884	7,277	6,590	4,513	4,423
Net Dairy Livestock Sales	91,601	7.6%	619	772	523	576	717	636
Value of Change in Dairy Livestock	-22,364	-1.9%	-151	-22	-7	8	-149	-47
Other Dairy Revenue	0	0.0%	0	67	3	41	9	46
DAIRY GROSS FARM REVENUE	1,204,607	100.0%	8,139	8,700	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	916	1,079	811	1,296	794
Labour Adjustment - Non-paid	0	0.0%	0	26	0	59	0	63
Labour Adjustment - Management	0	0.0%	0	282	0	259	0	266
Total Labour Expenses	148,858	12.4%	1,006	1,224	1,079	1,129	1,296	1,123
Stock Expenses								
Animal Health	47,098	3.9%	318	298	407	264	281	248
Breeding & Herd Improvement	38,692	3.2%	261	175	258	151	155	141
Farm Dairy	8,185	0.7%	55	70	110	68	78	56
Electricity (Farm Dairy, Water Supply)	13,711	1.1%	93	131	92	130	75	127
Total Stock Expenses	107,686	8.9%	728	675	868	613	589	571
Feed Expenses								
Supplement Expenses								
Net Made,Purchased, Cropped	131,784	10.9%	890	1,660	845	1,150	1,756	1,106
Less Feed Inventory Adjustment	12,800	1.1%	86	110	-466	45	423	21
Calf Feed	5,839	0.5%	39	125	60	54	49	37
Total Supplement Expenses	124,823	10.4%	843	1,675	1,371	1,159	1,383	1,122
Grazing & Support block Expenses								
Young & Dry Stock Grazing	66,678	5.5%	451	524	464	359	412	304
Winter Cow Grazing	0	0.0%	0	38	0	26	0	29
Support block Lease	9,625	0.8%	65	30	0	51	0	60
Owned Support block Adjustment	0	0.0%	0	83	0	64	0	69
Total Grazing & Support block expenses	76,303	6.3%	516	676	464	499	412	461
Total Feed Expenses	201,126	16.7%	1,359	2,351	1,836	1,658	1,795	1,583
Other Working Expenses								
Fertiliser	35,643	3.0%	241	480	228	436	608	352
Nitrogen	41,112	3.4%	278	42	317	68	0	68
Irrigation	0	0.0%	0	0	0	4	0	3
Regrassing	31,541	2.6%	213	69	260	79	146	66
Weed & Pest	956	0.1%	6	42	2	43	8	36
Vehicles	5,084	0.4%	34	188	171	150	53	138
Fuel	7,620	0.6%	51	50	55	36	57	36
R & M - land & buildings	25,786	2.1%	174	241	142	253	175	169
R & M - plant and equipment	20,367	1.7%	138	125	80	115	103	97
Freight and General	3,275	0.3%	22	44	25	53	100	47
Total Other Working Expenses	171,384	14.2%	1,158	1,281	1,281	1,235	1,251	1,010
Overheads								
Administration	5,849	0.5%	40	136	96	139	143	138
Insurance	21,790	1.8%	147	73	141	64	139	62
ACC	6,561	0.5%	44	30	63	25	58	24
Rates	30,175	2.5%	204	123	144	121	190	123
Depreciation	52,979	4.4%	358	474	363	391	351	417
Total Overheads	117,354	9.7%	793	836	807	740	881	764
DAIRY OPERATING EXPENSES	746,408	62.0%	5,043	6,366	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	2,334	1,925	1,839	-723	7
Total Operating Profit (incl non-dairy)							-723	

NOTES

Owl Farm

SEASON TO DATE

	Year to date 17/10/18	2015-2016	2016-2017	2017-2018	2018-2019	Notes
Stock	Milking Platform	160	146	148	147	
	Cows on farm	458	432	422	409	
	Peak cows	445	423	418	405	
	Cows calved	441	426	423	409	
	Cows in vat today	439	428	416	404	1
	Peak stocking rate	2.78	2.90	2.82	2.75	
Production	Total kgMS Season to date to factory	84,264	79,730	85,037	86,754	2
	MS/cow/day - last 10 days	1.53	1.57	1.74	1.83	3
	MS/ha/day - last 10 days	4.79	4.63	4.87	5.11	
	MS/cow Season to date	189	188	203	214	
	MS/ha Season to date	527	546	573	589	
	MS/ha from homegrown feed to date	425	450	497	539	4
Feed and Inputs	Average Pasture Cover 1 June	2,142	2,951	2,256	2,430	
	Pasture Cover at 21 Nov	2,012	1,950	2,289	2,223	
	Pasture grown TDM/ha growth rates	7.0	7.4	8.4	7.61	5
	Reduction in APC TDM/ha	0.0	1.0	0.0	0.00	
	Total pasture supply TDM/ha	7.0	8.4	8.4	7.6	
	Home silage on hand fed/ha	0.0	0.1	0.1	0.8	6
	Imported Supplements fed/ha	1.9	1.3	1.3	0.7	
	Total Feed supply TDM/ha	8.9	9.8	9.8	9.1	
	Homegrown grass eaten TDM/Ha (grown this year)	5.4	5.0	5.7	4.5	7
	Silage harvested TDM/ha Season to date	0.0	0.6	0.4	1.0	
	Homegrown feed Harvested TDM/ha (grown this year)	5.4	5.6	6.0	5.5	8
	Reduction in APC TDM/ha	0.0	0.8	0.0	0.0	
	Homegrown feed Harvested TDM/ha	5.4	6.4	6.0	5.5	
	Home silage on hand eaten/ha	0.0	0.1	0.1	0.5	9
	Imported Supplements Eaten TDM/ha	1.3	0.9	0.9	0.6	9
	Total Feed eaten/ha	6.7	7.4	7.0	6.6	
	% Feed eaten grown on farm	81%	88%	87%	92%	
	Feed conversion Eff (kgDM/kgMS eaten)	12.8	13.5	12.3	11.1	10
	Nitrogen Applied/effective ha	91	88	81	82	
Inventory feed T DM	Homegrown silage/hay	0	10	80	140	
	PKE in budget for rest of year	128	107	117	168	
	Bought silage hay	61	20	36	0	
	Maize silage	168	200	0	0	
	Total supplements on hand	357	337	233	308	11

* (does not add to harvest this year)

NOTES

Owl Farm Numbers – Seasonal Update

"SPRING OR SPRINGBOARD?"

Stocking Rate

1. We currently have 406 cows on farm, meaning 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.

Milk Matters

2. We are milking less cows this year but are targeting more milk out the gate. So far this year we are 1,700kg (2%) ahead for the season.
3. Fewer mouths eating grass has meant more challenge in ensuring pasture quality, however we have continued to exceed last year's production on a daily basis in total and per cow since early September.
4. 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

5. June growth rates dipped below expectations slightly. July and early August dipped below expectations a lot! To date there is still 0.8T/ha less feed grown in paddocks (10% less than last year).
6. 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
7. Homegrown grass eaten is much lower than last year 1.2t/ha (20%) for more milk produced Season To Date. A more aggressive approach to management has seen more silage harvested so far this year, an extra 0.6T/ha (170% of last year's silage).
8. This results in total homegrown feed eaten this year 0.5T/ha (9.4%) less than last year. Less grown, less harvested, a lot more in the vat and more silage in the stack.
9. The total supplements fed this year is comparable to last year – although much more of it is homegrown in previous years not imported.
10. With more fat on the back of our cows to put in the vat, and a strong drive at efficiency more milk from less feed creates a lower (better) feed conversion efficiency (FCE) 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 inefficient 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 plus the run through peak the most efficient FCE time of the cow's year. This year we have use 9.4% less feed for every kilo of milk we have produced, and we've produced more total kilos of milk.
11. 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. That said – we are now considerably better placed than this time a year ago in terms of feed reserves available – particularly high quality silage for Summer milk.

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	-	6,216	21,391	24,460	24,448	21,816	21,202	18,890	14,567	15,000	10,044	1,500	179,534	168,169	11,365
Milk cash payments	-	28,122	96,773	106,149	100,579	89,751	87,225	96,158	84,842	98,309	68,264	259,034	**1,115,205**	1,140,532	(25,326)
Dividends	-	-	-	9,300	-	-	-	-	-	-	37,200	-	**46,500**	54,932	(8,432)
Cattle	-	12,959	4,193	1,377	3,177	-	-	3,750	15,000	12,750	11,250	3,750	**68,206**	91,601	(23,395)
Other Income	-	-	-	-	-	-	-	-	-	-	-	-	**-**	5,070	(5,070)
Total Income	**-**	**41,081**	**100,966**	**116,826**	**103,756**	**89,751**	**87,225**	**99,908**	**99,842**	**111,059**	**116,714**	**262,784**	**1,229,911**	1,292,135	(62,223)

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 Full Year	Variance Full Year
Wages	12,762	12,762	12,762	19,019	12,885	12,762	12,762	19,938	12,762	13,268	12,762	12,959	**167,401**	148,858	18,543
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	1,461	2,126	9,899	11,496	4,765	1,859	1,916	1,080	2,125	1,914	**39,265**	38,692	573
Dairy Shed and Electricity	1,795	3,560	1,566	1,795	2,287	1,878	2,709	2,629	1,706	1,459	2,940	315	**24,637**	21,314	3,323
Purchased Feed	17,342	8,578	8,261	4,770	9,500	-	3,360	4,688	18,536	9,703	9,388	7,588	**101,714**	89,836	11,878
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	-	10,105	5,700	2,704	21,811	12,071	5,246	-	1,046	13,112	11,809	(221)	**83,382**	70,143	13,239
Gibberellic Acid	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-	-
Fertiliser Spreading	-	-	-	1,659	3,895	558	-	-	-	-	-	-	**6,112**	3,834	2,278
Freight	1,654	350	-	400	3,586	2,360	-	-	-	266	900	-	**9,516**	3,910	5,606
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	-	-	-	12,150	-	11,250	6,750	-	-	-	-	-	**30,150**	30,650	(500)
Cropping	-	-	-	1,248	4,950	600	1,200	6,555	276	2,655	5,355	-	**22,839**	17,137	5,702
Regrassing	-	-	837	-	-	-	-	-	4,546	11,224	4,000	-	**20,607**	31,541	(10,934)
R&M	8,280	8,933	3,139	2,853	2,811	4,063	2,267	4,117	5,394	4,455	2,836	1,278	**50,426**	47,210	3,216
Vehicle Expenses	2,911	2,442	2,194	4,609	2,547	2,619	2,414	2,390	4,938	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	61,160	**61,984**	**46,514**	**67,741**	**82,408**	**71,342**	**58,260**	**53,742**	**74,416**	**75,554**	**73,467**	**41,209**	**767,795**	716,866	50,929
Net Surplus before Financial Charges	(61,160)	(20,902)	54,452	49,085	21,348	18,409	28,965	46,165	25,426	35,505	43,247	221,574	462,116	575,268	(113,153)

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 Full Year	Variance Full Year
Interest Cost	14,649	15,370	15,719	15,719	15,719	15,719	15,623	15,527	15,431	15,700	15,601	15,502	**186,280**	183,378	2,902
Lease Land	2,911	2,911	2,911	4,619	4,619	4,619	4,619	4,619	4,619	4,619	3,962	3,962	**48,988**	34,964	14,024
Total Financial Charges	17,560	18,281	18,630	20,338	20,338	20,338	20,242	20,146	20,050	20,319	19,563	19,464	**235,268**	218,342	16,926
Surplus (Deficit) after Financial Charges	(78,720)	(39,183)	35,822	28,747	1,011	(1,929)	8,723	26,019	5,376	15,186	23,684	202,110	226,847	356,926	(130,079)

Compare your figures to ours in the table below. This shows our current season cost /ha /cow and /kgMS plus our three prior years /kgMS for reference as assessed to the end of October .

St Peter's School/Lincoln University
Demonstration Dairy Farm

FARM WORKING EXPENDITURE COMPARISON

Measure - To 31/10/2018	Total	$/ha	$/cow	$/kgMS 2019	$/kgMS 2018	$/kgMS 2017	$/kgMS 2016	Your figures
Total volume	**Total**	**147**	**406**	**76,973**	**75,654**	**70,697**	**74,353**	
Milksolids KG	76,973	524	190					
Total Labour Costs	76,287	519	188	0.99	0.91	0.87	1.25	
Animal Health	20,042	136	49	0.26	0.29	0.30	0.23	
Calf Rearing	2,966	20	7	0.04	0.03	0.01	0.03	
Breeding	15,454	105	38	0.20	0.09	0.29	0.01	
PKE	33,407	227	82	0.43	0.33	0.21	0.67	
Grass Silage Harvested	10,538	72	26	0.14	0.00	0.21	0.00	
Purchased silage	4,220	29	10	0.05	0.07	0.17	0.15	
Feed Inventory Adjustment	0	0	0	0.00	0.04	0.11	0.00	
Cropping	8,654	59	21	0.11	0.08	0.19	0.13	
Feed Sampling	213	1	1	0.00	0.01	0.00	0.00	
Calf Meal	6,738	46	17	0.09	0.08	0.08	0.05	
Fertiliser Spreading	8,006	54	20	0.10	0.03	0.04	0.05	
Fertiliser - Maintenance	19,326	131	48	0.25	0.16	0.12	0.32	
Fertiliser - Nitrogen	17,781	121	44	0.23	0.24	0.38	0.20	
Freight	5,679	39	14	0.07	0.05	0.08	0.00	
Re-grassing	2,116	14	5	0.03	0.17	0.00	0.05	
Heifer grazing costs	19,587	133	48	0.25	0.28	0.26	0.35	
Shed Expenses	2,759	19	7	0.04	0.02	0.12	0.03	
Electricity	4,666	32	11	0.06	0.09	0.08	0.06	
Water Charge	5,716	39	14	0.07	0.10	0.09	0.09	
R & M - Land & Buildings	6,004	41	15	0.08	0.11	0.15	0.22	
R & M - Plant & Equipment	7,755	53	19	0.10	0.11	0.13	0.04	
Vehicle Maintenance	5,244	36	13	0.07	0.04	0.08	0.03	
Petrol/Diesel	3,488	24	9	0.05	0.05	0.04	0.04	
Weed & Pest Control	142	1	0	0.00	0.01	0.00	0.01	
Other Expenses	890	6	2	0.01	0.06	0.10	0.17	
Rates/ACC/Insurance	10,652	72	26	0.14	0.21	0.24	0.38	
Total Farm Working Expenses	**298,329**	**2,029**	**735**	**3.88**	**3.94**	**4.66**	**4.43**	

NOTES

MATING UPDATE – CROSSED FINGERS OR LEGS.

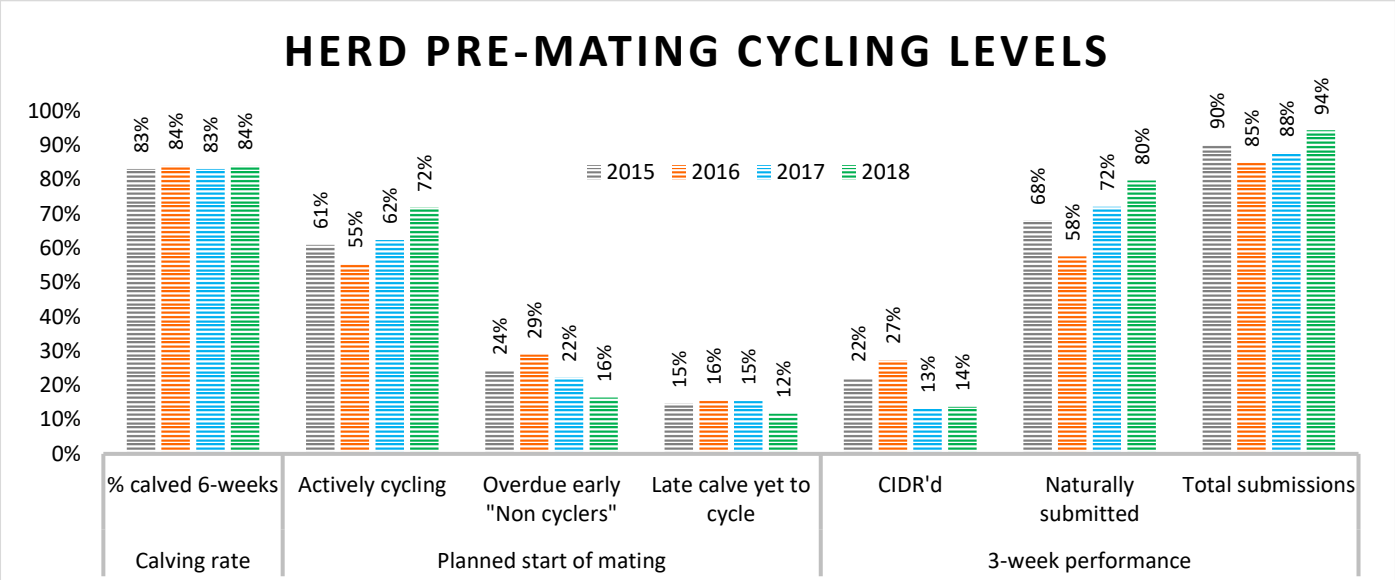
WHAT NUMBERS CAN WE COMPARE NOW?

We have some concrete numbers to report and some tentative. Let's start with the concrete.

3-WEEK SUBMISSION RATE

1. This year 94% of the herd was submitted in the first 3 weeks of AB, 6% higher than last year.
2. We used a CIDR on the same number of cows 56 animals – which is less CIDRs required this year (see page 22)
3. A PG was given to the cows who cycled one week before mating to try to pull them forward to cycle in week of AB not week 3.
4. Previous years saw a PG to the 2nd week cows to get them to week 1 and week 3 cows to get them to week 2.

This is a very exciting step forward for us, especially off the back of a poorer result last year. Principally the only things different between years were the change in Calving Body Condition Score (BCS) average and spread of the herd and a better September making it easier to feed cows well this year.



EARLY INDICATION OF IN-CALF RATE

We're tracking the data with a lens that looks back 3 weeks from today. If cows haven't returned after a mating date that was 21 days ago – we're assuming that they are – so far - in-calf .

The results? So far we can evaluate the herd up to matings on or before the 34th day of mating or 31 October. So far we have about 8% more of the herd that appear to have held to matings on or before that date. Right now this means roughly 74% of the herd will have not returned compared to 65% of the herd at the same point last year. By the time we can evaluate the 42nd day of mating or 6-weeks, we expect to have around 80% of the herd not returned.

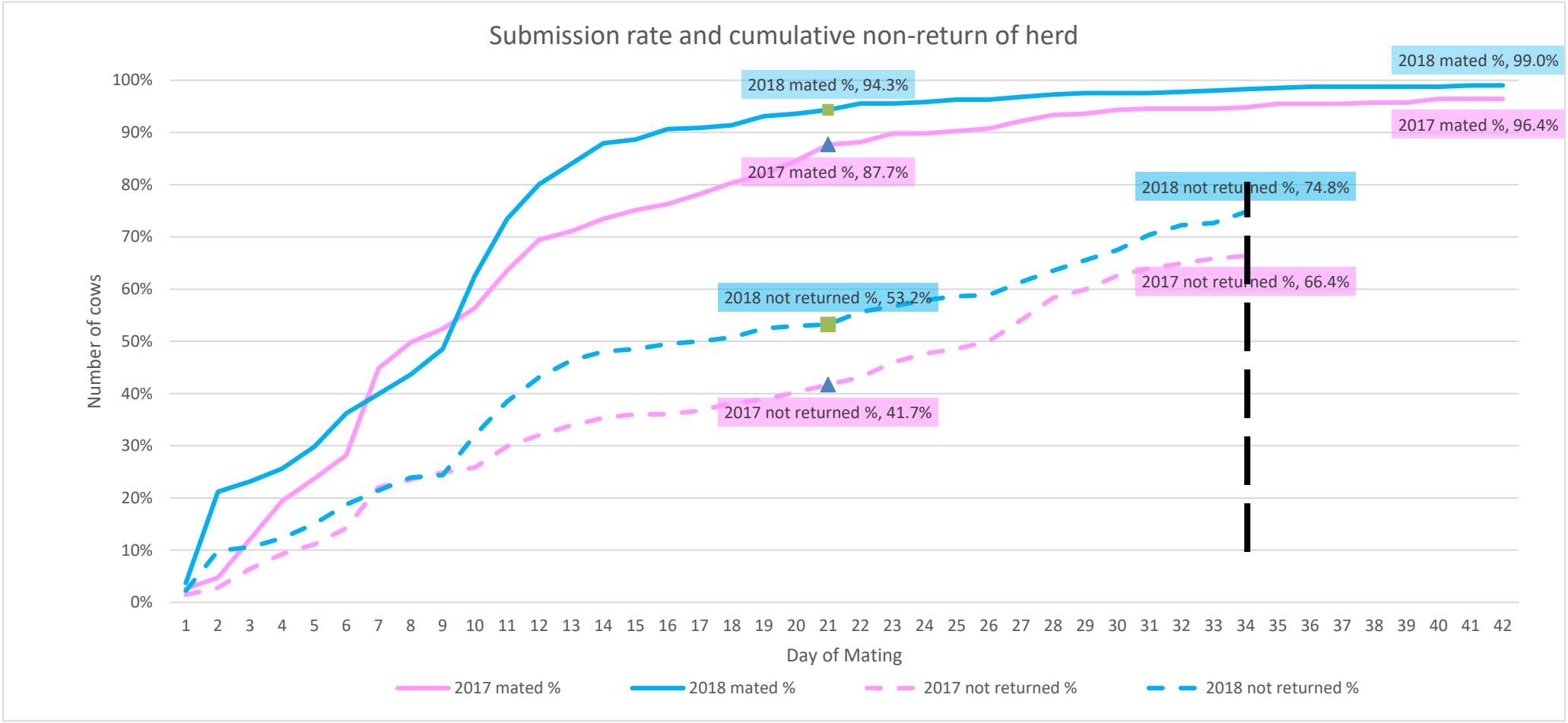
Don't count your chickens! Last year our results show that long return or skip-cycle cows still happen, so we expect to see our 6-week in-calf rate be in the mid 70's which is around 8% more than last year.

Date data assessed	Looks back to matings on or before	2017 mating		2018 mating	
		held to first 3 weeks	held to first 34 days	held to first 3 weeks	held to first 34 days
9-Nov	18-Oct (21st day AB)	49.8%		56.2%	
22-Nov	31-Oct (34th day AB)	46.4%	66.4%	54.4%	74.8%

NOTES

MATING NOTES

The graph below shows the comparative non-return rate between years and submission rate as well. We are running last year's numbers in the same way – so that means we have to "forget about" all the future matings we have records of and compare purely to the data we would have had on November 21 last year. We know that by the end of mating the final scan showed only 67% holding to the first 6 weeks, so we expect our hold rate to be lower than shown here. However the comparison between years is still relevant.



NOTES

Summer management plan

Successful summer management depends on planning, monitoring and taking action. This checklist will help you formulate a plan for summer, preparing you for whatever weather conditions eventuate.

- Use the tables and information on pages 2,3 and 6 to help you fill in the plan on this page.
- Share this information with your staff.
- Monitor the situation monthly – update the plan if you need to.

1. Building up feed before it gets dry	
Apply nitrogen to whole farm by this date	
Application rate of nitrogen (kg N/ha)	
Rotation length by 10 December	
Rotation length by 10 January	

2. Summer crops	*Crop 1*	*Crop 2*
Planting date for summer crop		
Dates nitrogen to be applied to crop		
Application rate of nitrogen (kg N/ha)		

Use the Feed Inventory Table on page 6 to work out A, B and C.

3. How much feed do I have on hand for summer?	
Supplements on hand **A**	
Supplement required for winter **B**	
Supplement required for autumn rains **C**	
A - B - C = Total available to feed out over summer	
Divided by number of cows (after culling, grazing off)	
Total supplements available per cow	
Divided by supplement required per cow per day	
Total days supplement available	

4. Destocking	
All known culls to be gone by	
Whole herd pregnancy test date	
Herd test to identify low producers/high SCC cows	
Dry off high SCC cows once counts get over	
Dry off cows once daily MS per cow drops below	

5. Cow condition – I will dry off:	
1st lactation cows under condition score 3.5 by	
Cows under condition score 3.5 by	
1st lactation cows under condition score 4 by	
Cows under condition score 4 by	
I will dry off the whole herd if there is no rain before	

Monitoring the situation

Regular monitoring of both the farm and wider situation is important, as it allows you to evaluate the options available for stock and feed management, based on the most accurate information.

dairynz.co.nz/farmwatch – DairyNZ Farmwatch provides farmers with a weekly summary of the on-farm situation observed throughout New Zealand, plus timely advice.

metservice.co.nz – Short and long range regional weather forecasts are available here.

farmmet.niwa.co.nz – This is a subscription weather forecast and information service designed specifically for farmers.

Pasture Growth Forecaster – The DairyNZ Pasture Growth Forecaster is an easy-to-use web-based tool to help predict how much grass grows on your farm. Visit dairynz.co.nz/pastureforecast > custom forecast.

Access support

Make best use of farm advisors be they veterinarians, farm consultants, DairyNZ consulting officers, bankers, or feed reps with specialist knowledge. There are plenty of organisations who can offer support.

- DairyNZ – we can refer you onto the right people if you are unsure who to call. Phone 0800 4 324 7969 or email info@dairynz.co.nz.
- Rural Support Trust – challenging weather conditions can bring stress to people. Contact Rural Support Trust if you or someone you know needs help 0800 787 254.
- Dairy Connect – this DairyNZ service can help you tap into the experience of another farmer. Visit dairynz.co.nz/dairyconnect.

SUPPLEMENTS

Setting up for a successful summer means being as prepared as we can to react to a whole range of potential climatic situations.
We have our feed budget planned through to the end of the year, including knowing how much feed we need kept aside for winter and next spring.

Silage Type	Mob to be fed	Feeding time	TDM required	Total TDM Req	TDM Available
Good quality pit silage	Milkers	Summer Autumn	107	145	148
	Milkers	Spring milk	38		
Lower quality pit silage	Dries	Autumn	16	74	67
	Dries	Winter	58		
Hay	Springers	Spring milk	8	8	8
Summer Brassica	Milkers	Summer	109	109	120
Palm Kernel	Milkers	Summer Autumn	122	168	198
	Dries	Autumn	46		
Total Feeds			504	504	540

Note, we will use PKE in winter and next spring – but that is beyond our current contracted volume and we can order more as required. Unlike limited silage reserves – where we only have what we have.

Feed type	Feed source	On hand now TDM	Growing/ ordered TDM	Total supply	Total Available
High quality pit silage	Homegrown early spring surplus	120	0	164	148
	New run-off clover and grass silage	0	44		
Lower quality pit silage	Homegrown Late spring surplus	24	0	74	67
	Run-off sorghum	0	50		
Hay large bales	Homegrown	0	8	8	8
Summer Brassica	Crop 10 Ha	0	120	120	120
Palm Kernel	As needed	30	168	198	198
Total		174	390	564	540

DEPLOYING FEED **Resources**

As you can see from the table above, our total feed requirements are largely in line with our total feed supply. With a good amount of forage already securely in the stack it's only our run-off feed and crops that are at risk.

Our total forage requirement however only just matches our supply, so we know that we have very little extra silage to use and must plan the timing of this very carefully.

We need to plan and manage our Palm Kernel requirements in conjunction with our other feeds to keep our FEI safely non-grading. This means spreading it more evenly over a longer period of time is likely necessary, with PKE feeding beginning in December as we transition the grass proportion of the diet down. Last year we did trial our PKE and know that we can feed 3-5-4kg PKE (or 3.1-3.6kg**DM** PKE) to the herd and likely be just beneath the grading threshold.

A critical piece of the puzzle is knowing ad setting aside the Winter/spring silage requirements, and marking the relevant stacks where we need to stop feeding this autumn.

NOTES

NOTES...

NOTES

NOTES

NOTES

MONITORING THE SITUATION

Decision rules are critical to the success of the farm.

1. Monitor average pasture cover and growth rates weekly.
2. Monitor crops for insect damage and spray as needed, note withholding periods.
3. Keep Average pasture cover above 2,000kgDM/ha on the area that is in grass.
4. Keep pre-grazing cover levels below 2,800kgDM/ha to preserve pasture quality as best we can.
5. Target rotation length between 25-35 days;
    a. If cover is below target we will slow the rotation to protect growth before growth slows,
    b. If average cover and pre-grazing raise above target we will speed up and look to remove any surplus mechanically.
6. Monitor Eczema risk to cows, via pasture spore count, faecal spore count and faecal zinc samples.
7. Monitor cow BCS of the herd, and individuals. All cows at or below BCS 3.5 to be on OAD January onwards (excluding known empty or cull cows).
8. Begin dry off in March for cows as required based on calving date and individual BCS data.
9. Book space quickly based on feed budget when surplus cows on farm need to go to relieve feed demand.

NOTES

1. Tips to build up feed

Early summer nitrogen

- Consider an N application in early summer to stimulate the development and growth of new ryegrass tillers. Moisture levels need to be adequate for good pasture growth.
- Use Agrotain coated urea to help stop summer conditions degrading the N. This should allow lower rates of N to be used
- Start applications early enough to avoid major moisture deficits (i.e. late November).

Early summer rotation length

- Increase rotation length towards 30 days while there is still sufficient pasture cover to avoid reductions in production. Ryegrass leaf emergence rates slow as soil moisture reduces and temperatures increase which means the plants need more time between grazings to recover and generate new leaves.

To increase rotation length

- Twice a week, from late November, change the normal grazing order so that the longest (or largest) paddocks in the rotation are left to accumulate some extra growth for two days. Return to graze these paddocks after two days, using the additional area and length, to get an extra grazing for the herd. By doing this there is potential to gain an extra six days between grazings in the rotation over the next 30 days.
- In a dry summer, where nitrogen has been applied, there is little gain from trying to create a rotation length longer than 30-36 days. New leaf emergence rates are 10-12 days.

2. Tips for establishing summer crops

Plan how the crop will be fed and likely grazing and re-grassing dates before sowing to ensure the crop selected fits your system.

See Feeding Summer Crops on page 5.

- Green feed maize, sudan and sorghum are crops that can be established in November and early December. Sudan and sorghum need high soil temperatures.
- Time from sowing to grazing is 45- 55 days for greenfeed maize (though longer will achieve higher yields), and 35-45 days for sorghum or sudan forages.
- Summer crop options such as turnips or chicory are limited past early November.
- For turnips and chicory crops already established, apply N and invest in weed control.

Crop area required to feed 100 cows

Crop yield	Daily intake (kg DM/cow)			
	3.0	4.0	5.0	6.0
8 t DM/ha	375m²	500m²	625m²	750m²
10 t DM/ha	300m²	400m²	500m²	600m²
12 t DM/ha	250m²	333m²	420m²	500m²
14 t DM/ha	215m²	280m²	360m²	430m²

3. Tips for feed

Winter feed

- It's important that during a dry period, supplements required to get through the next winter aren't used. Ensure this is marked in some way (e.g. spray paint a line on the silage stack, ring fence or mark bales with spray paint).

When it rains

- Up to 50 percent of pasture DM will disappear once it rains (rots). Allow at least 100kg DM/cow of supplement (2-3 weeks feed) for this period. On very dry farms up to 160kg DM/cow will be required post rain. After rain, ensure rotation length is held (not sped up).

To work out how much feed you have on hand for summer, complete the table on page 6.

4. Tips for destocking

Reducing cow numbers to 80-85% of peak numbers as soon as possible reduces the amount of feed being used on the farm for maintenance, and can divert more feed into the cows remaining on the farm.

It's a myth that empty cows milk better then pregnant cows. Research with twin cows in New Zealand shows that empty cows did not milk better than their pregnant twin until 250 days of lactation and the differences were small.

Check how to use Breeding Worth (BW) and Production Worth (PW) for culling decisions at dairynz.co.nz/indicies.

Calculate number availabe to cull	Cow number	*Cow number – e.g.*
Current cow numbers on hand		*500*
Number of in-calf heifers to enter the herd June 1 (use averages from previous years)		*100*
TOTAL		*600*
Less number of empties in the mixed age animals *Scanning can confirm not in calf 35 days post end of mating **		*50*
Less known culls and an estimate of deaths Known culls can be identified and listed based on Production Worth, repeat clinical mastitis (three strikes and out), high somatic cell count, temperament, udder conformation, old age, lameness etc.		*20*
Number after involuntary culls		*530*
Minimum number required to winter This should be based on peak number you wish to milk next spring.		*520*
Voluntary cull cow number		*Cull cow number =10*

**e.g. for PSM 15 October + 12 weeks total mating is 7th January + 5 weeks minimum before PD = 11th Feb, 11 weeks mating = 4th Feb and 10 weeks mating = 28th Jan; allowing all empties to be culled by end of January.*

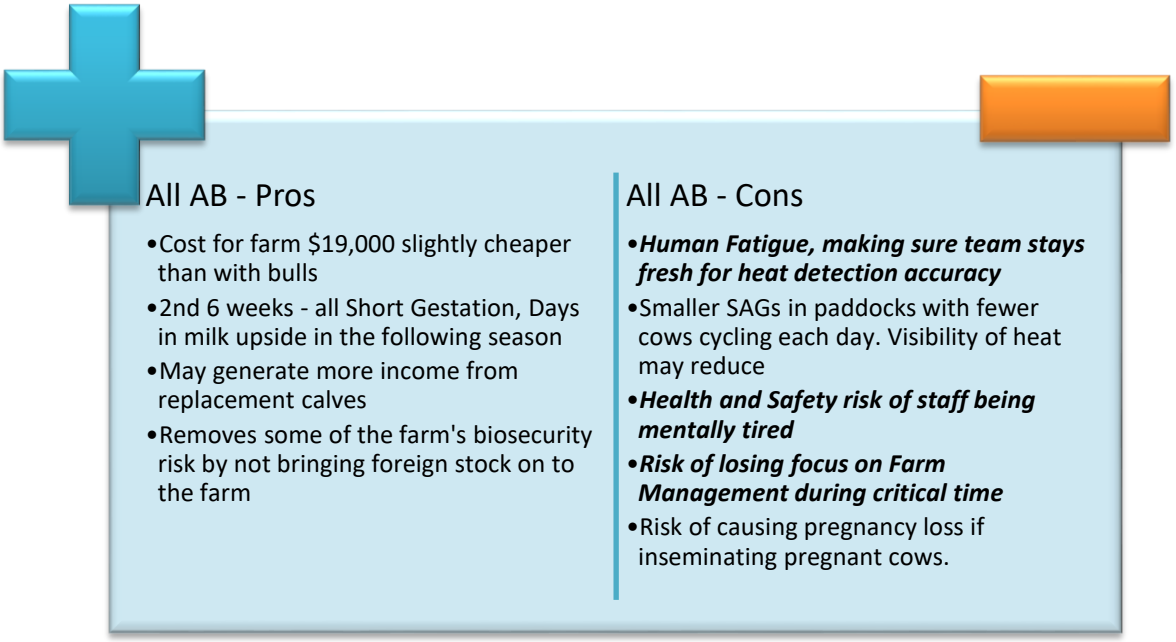
That thorny CIDR comment – how is the same less?!

We have used the same number of CIDRs this year on the herd compared to last year, however this year we inserted those 10 days earlier. Last year we delayed our CIDR insertion to the first day of mating to allow more cows to come on naturally. If we'd inserted 7 days prior like we have in every other year we would have used a CIDR on 69 cows (16% of the herd). Over time it is our aim and therefore pleasing to see the number of CIDR's required, coming down.

	10 days pre-mating				7days pre-mating	PSM				
	Cycling	Overdue	Late calvers	CIDR prospect	CIDR Inserted	Cycling	Overdue	Late calvers	CIDR removed	CIDR Inserted
2015				102	102	281	112	68	102	-
2016	218	130	83	118	118	239	125	67	118	-
2017	229	128	65	69	-	263	94	65	-	56
2018	276	72	52	56	56	294	67	48	56	-

All AB vs AB and Bulls – Lets Evaluate what really happened

Below is the summary of pros and cons we've experienced for Owl Farm so far this year. Those below in bold have largely been able to be managed, and aren't likely to cause significant impacts on the result.



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.

NOTES

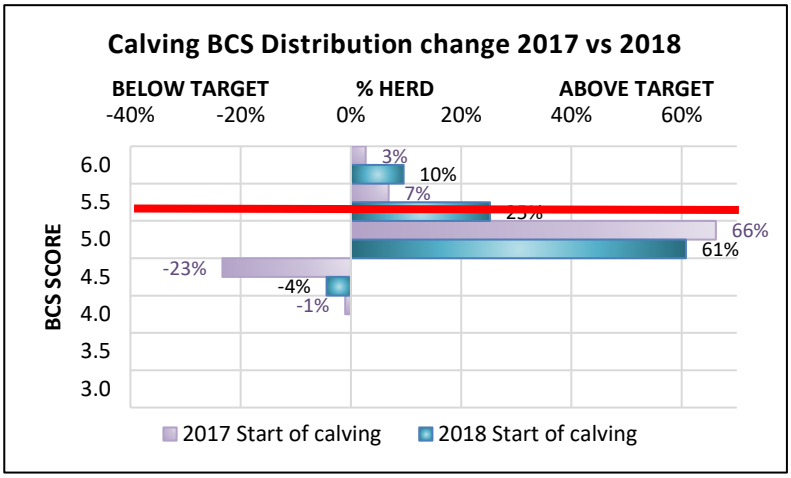
An important point to note is that cows are recorded at the last definitive score they passed. E.g. while we might go to the paddock and assess a cow as "more than 3.5 and less than 4.0", and we might decide she is closer to a 4 than a 3.5 – we would round her score up and record her as a 4.0. The vet 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.

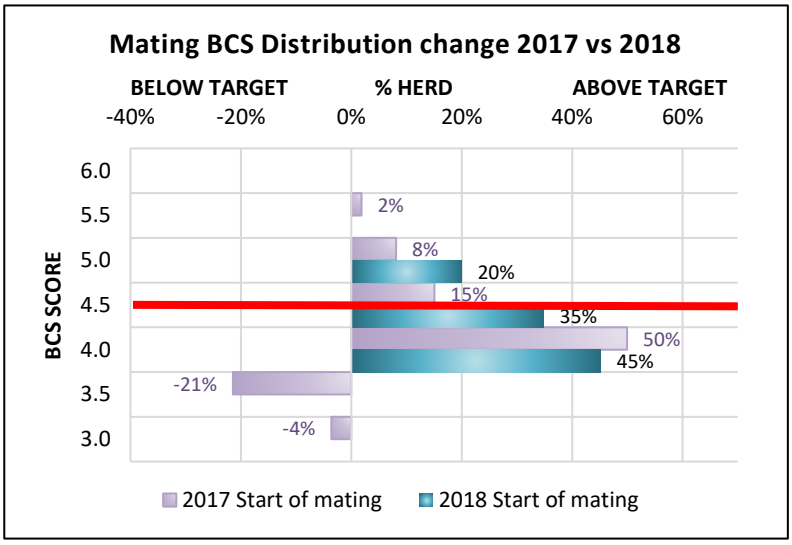
THE RESULTS – ABSOLUTELY WORTH IT

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.



Our average BCS has had a much healthier start to the season this year, which has helpfully carried on so far this year leading to no cows below BCS 4 heading into mating, compared to 25% of the herd last year.



We're now looking at this as a capital investment in BCS that we intend to maintain year-on-year a little like feed Inventory. It's part of how our system works now and needs to be carefully maintained each year.

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

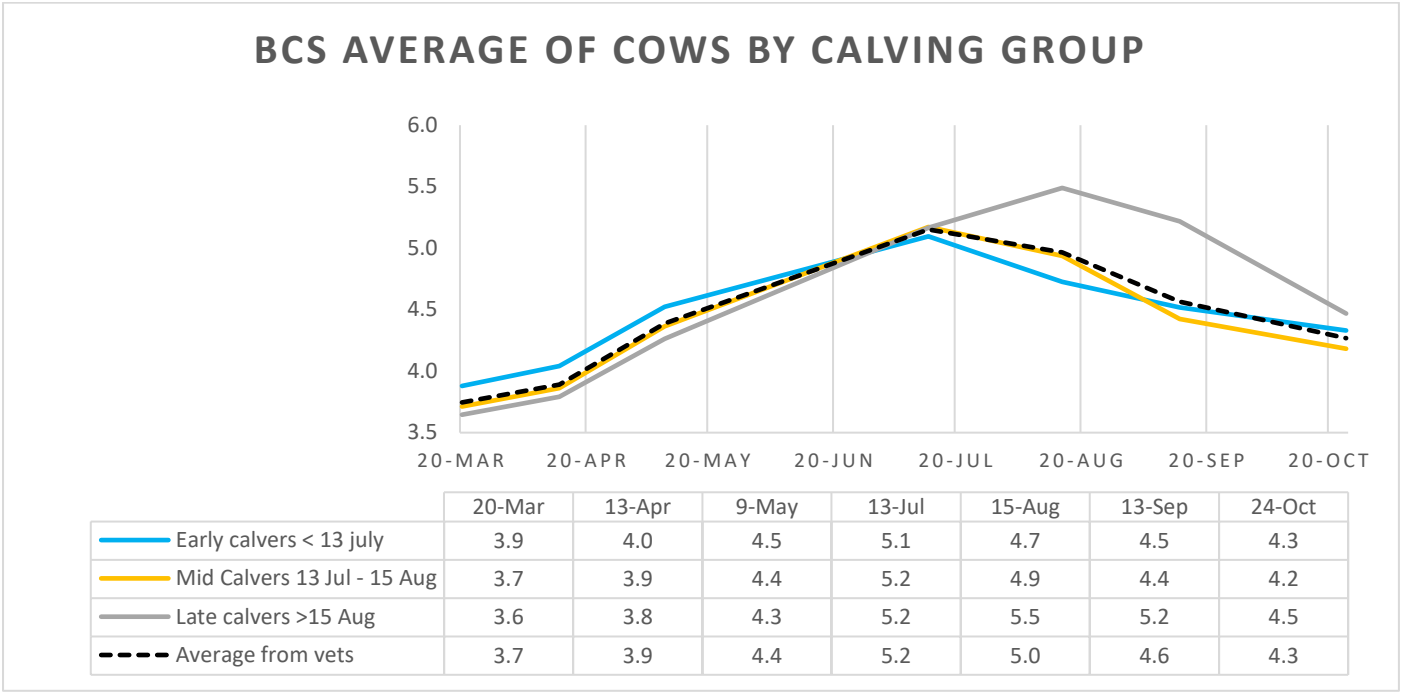
Individual BCS - the challenges

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.

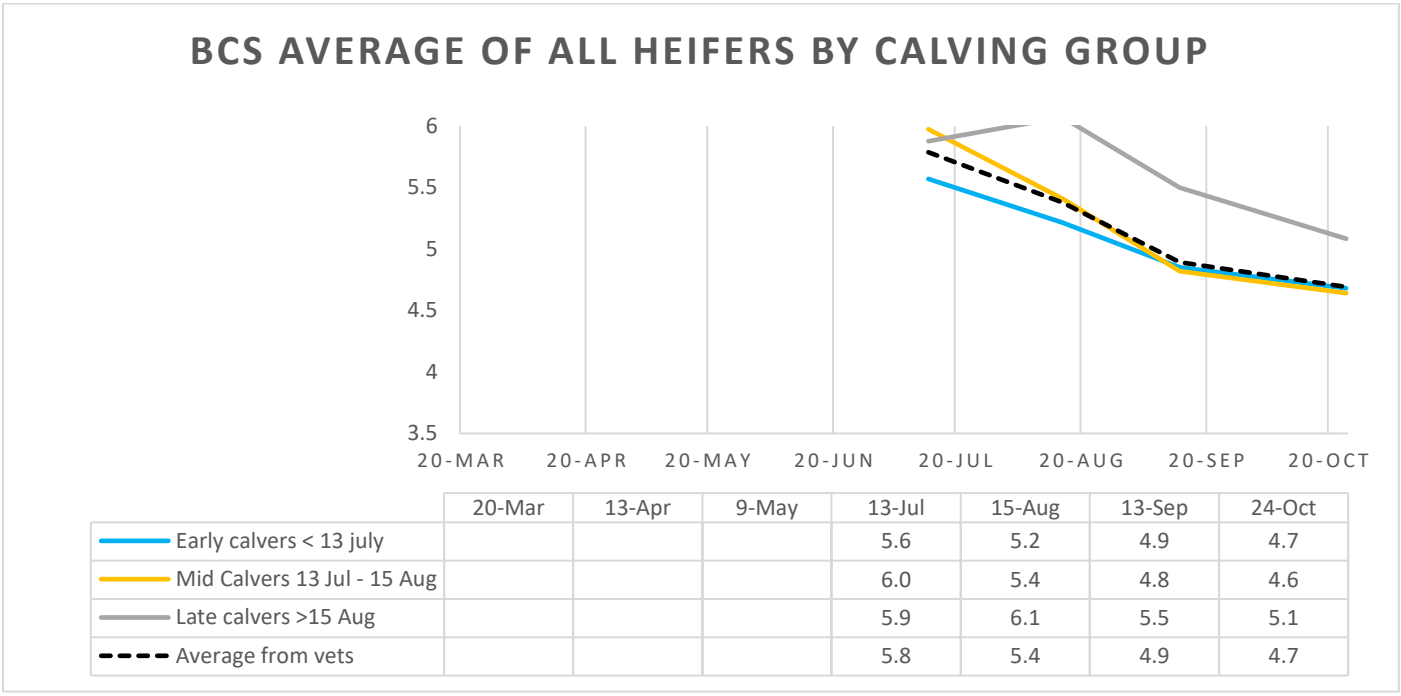
NOTES

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 already in milk.



	20-Mar	13-Apr	9-May	13-Jul	15-Aug	13-Sep	24-Oct
Early calvers < 13 july	3.9	4.0	4.5	5.1	4.7	4.5	4.3
Mid Calvers 13 Jul - 15 Aug	3.7	3.9	4.4	5.2	4.9	4.4	4.2
Late calvers >15 Aug	3.6	3.8	4.3	5.2	5.5	5.2	4.5
Average from vets	3.7	3.9	4.4	5.2	5.0	4.6	4.3

The first calvers only have data from July onwards but largely reflects a similar pattern – tough on average the heifer group had and has maintained better overall BCS.



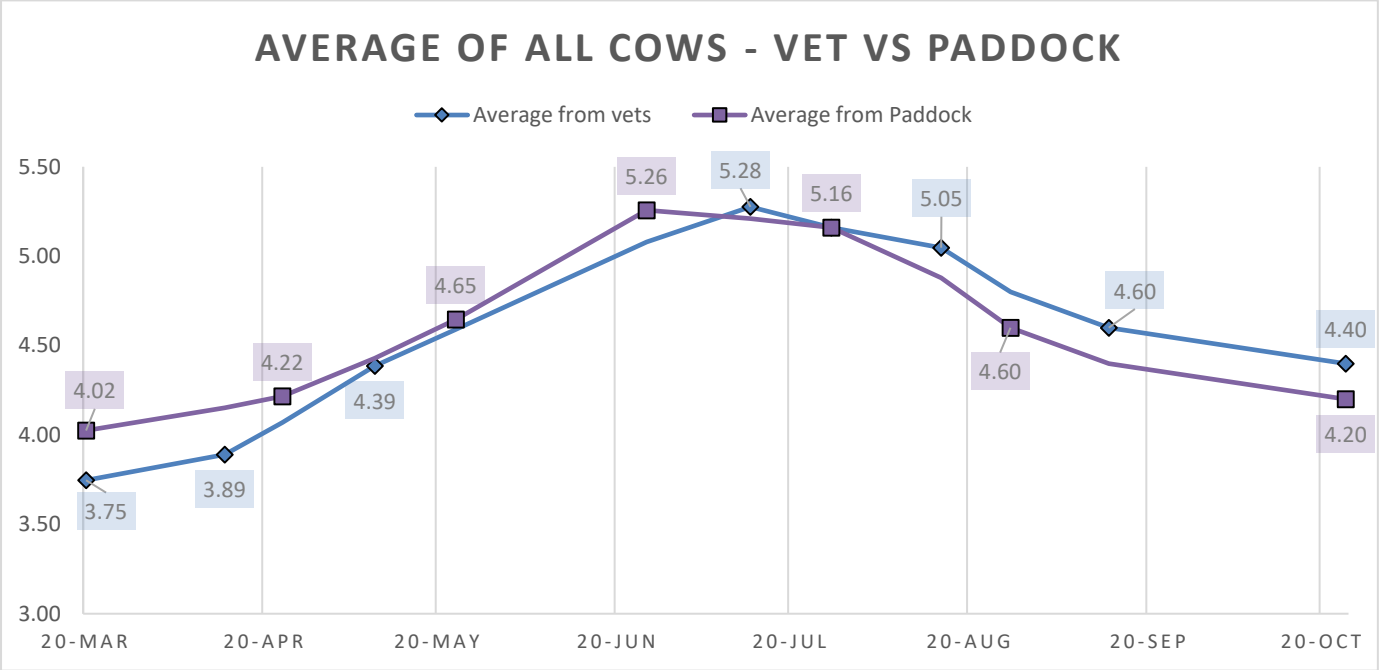
	20-Mar	13-Apr	9-May	13-Jul	15-Aug	13-Sep	24-Oct
Early calvers < 13 july				5.6	5.2	4.9	4.7
Mid Calvers 13 Jul - 15 Aug				6.0	5.4	4.8	4.6
Late calvers >15 Aug				5.9	6.1	5.5	5.1
Average from vets				5.8	5.4	4.9	4.7

Vet vs paddock?

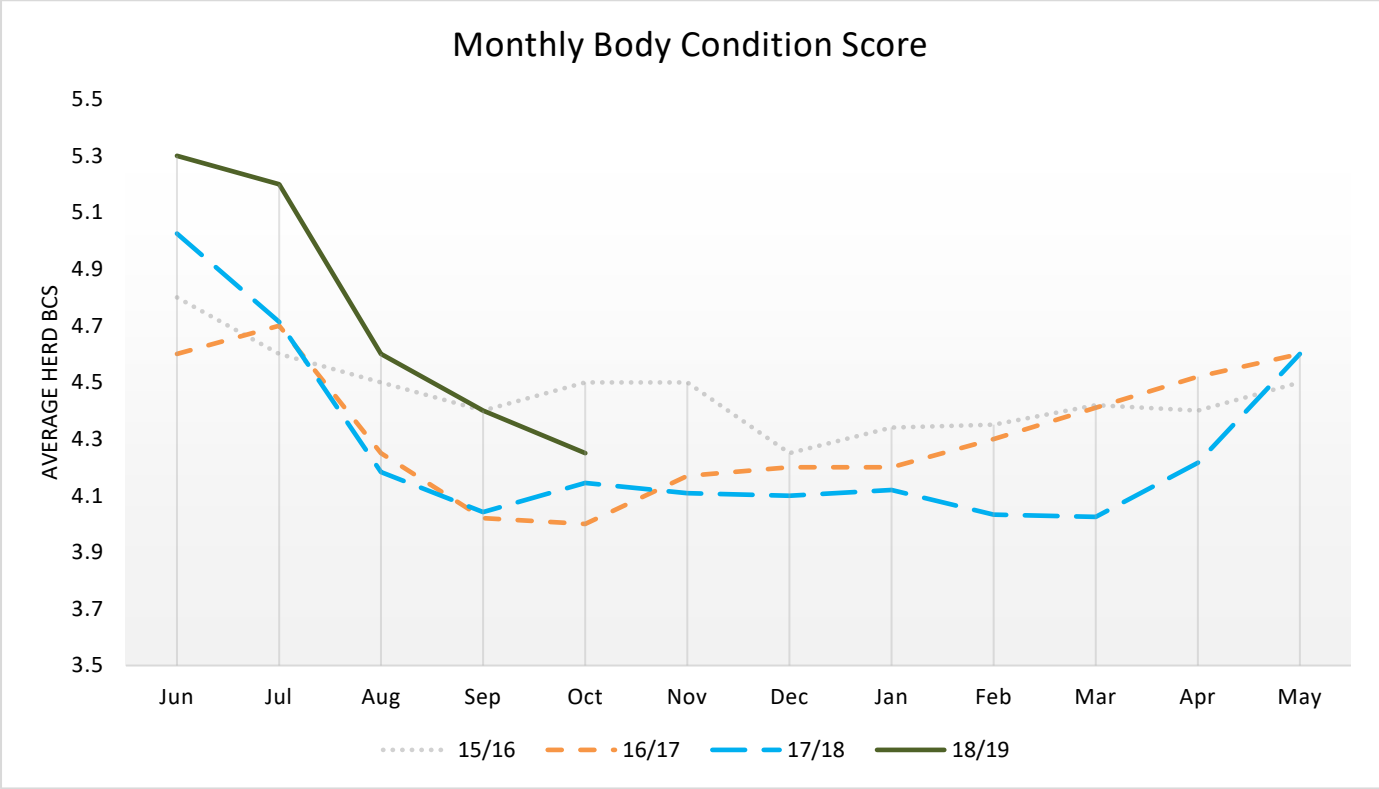
We have always had, and continued to have Wade Bell from DairyNZ score the herd monthly, by walking through the paddock and recording a sample of the herd. There was a difference between the two sets of Data, as Wade was rounding cows both up and down as required.

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

NOTES



Average Herd BCS last 4 years from paddock assessments



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!

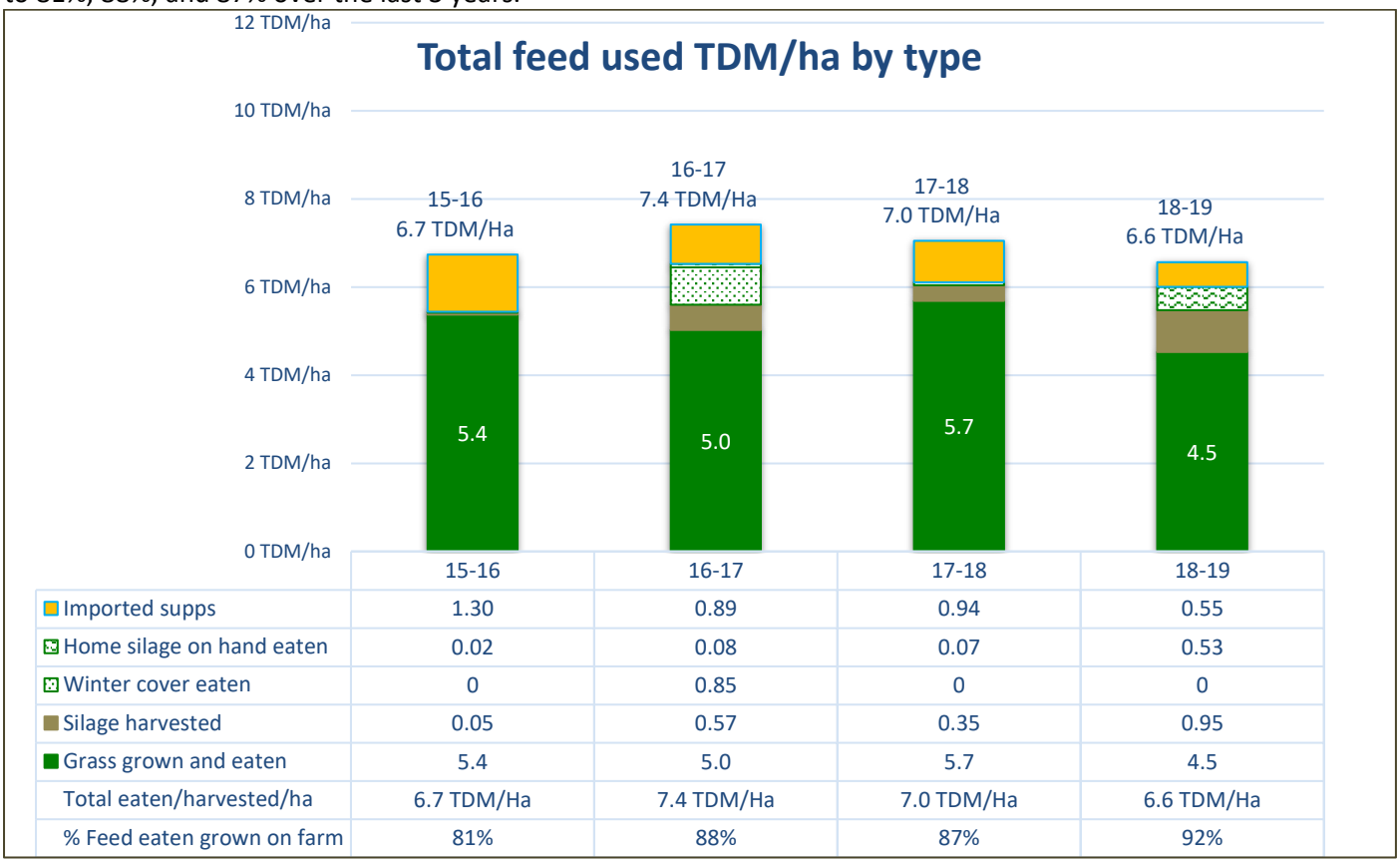
NOTES

SUMMARY DATA

FEED INFORMATION

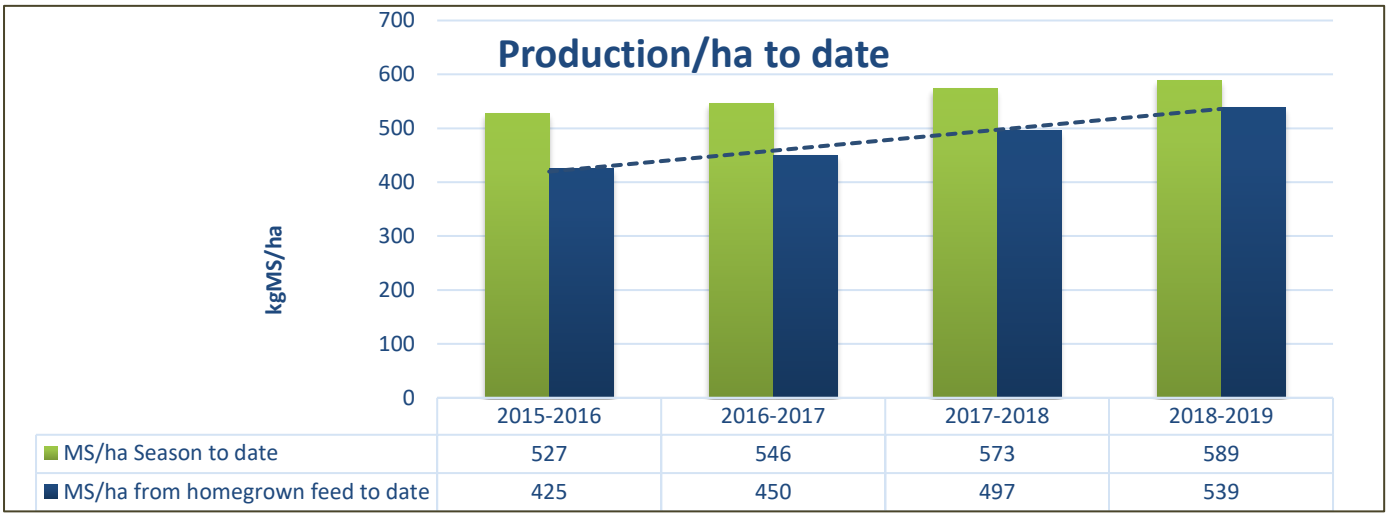
A cold and wetter winter has seen our growth compared to last year lag behind by about 0.8TDM/ha YTD (9.4% less grass grown). Primarily this deficit was in a poor growing July and August though there was small deficits in June and early September also.

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. To date 92% of the feed used this season was produced on Owl Farm including silages harvested in prior years, compared to 81%, 88%, and 87% over the last 3 years.



	15-16	16-17	17-18	18-19
Imported supps	1.30	0.89	0.94	0.55
Home silage on hand eaten	0.02	0.08	0.07	0.53
Winter cover eaten	0	0.85	0	0
Silage harvested	0.05	0.57	0.35	0.95
Grass grown and eaten	5.4	5.0	5.7	4.5
Total eaten/harvested/ha	6.7 TDM/Ha	7.4 TDM/Ha	7.0 TDM/Ha	6.6 TDM/Ha
% Feed eaten grown on farm	81%	88%	87%	92%

Despite lower feed used we have produced milk to date. The “more 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.

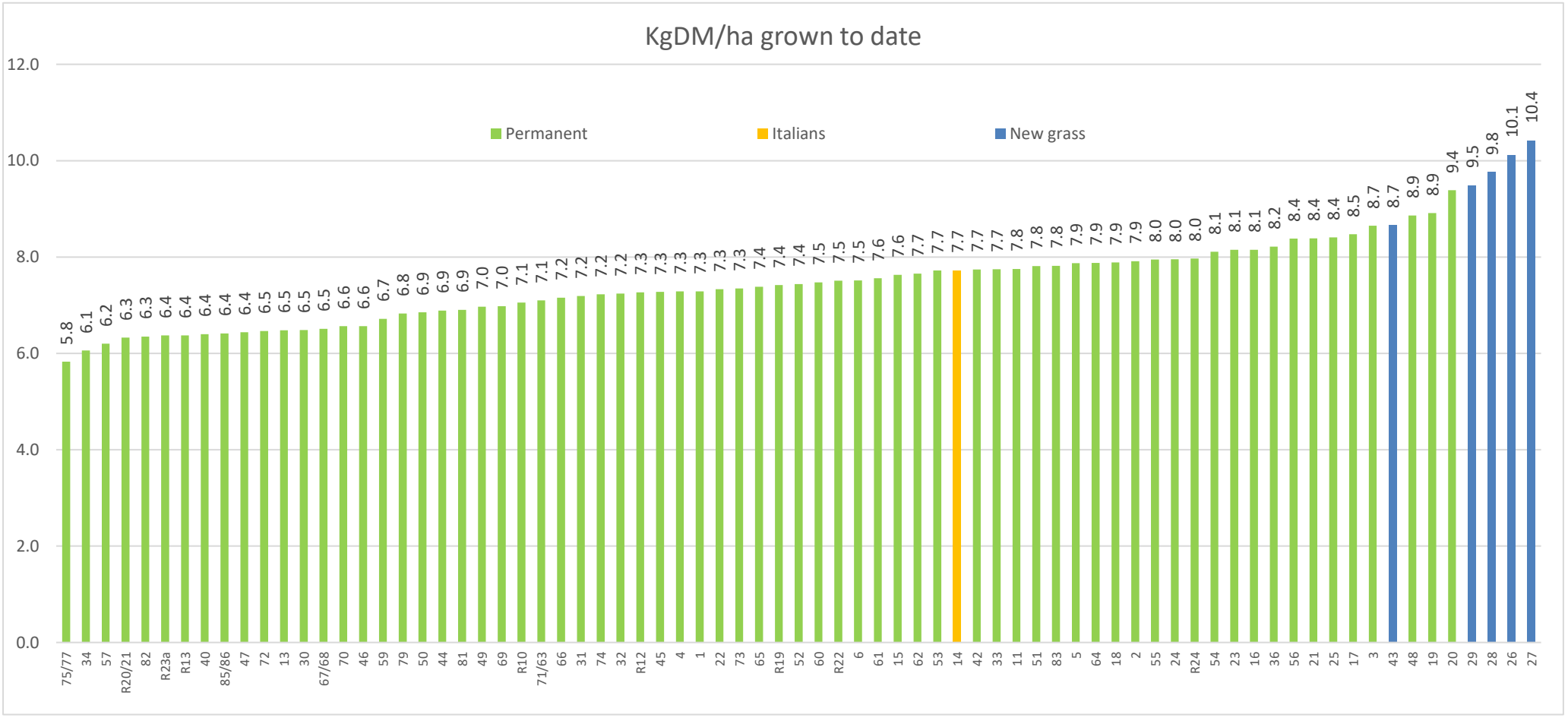


	2015-2016	2016-2017	2017-2018	2018-2019
MS/ha Season to date	527	546	573	589
MS/ha from homegrown feed to date	425	450	497	539

NOTES

On a paddock by paddock basis we see a strong variation in yield to date – with the best paddocks outgrowing the worst by nearly 50%. The worst paddocks in order (excluding those sprayed out 2 months ago for crop); receive no fert or Nitrogen (75/77), is a poor river terrace that cannot improve (34) and unusually low performance, slow recovery post drying off in May in here – expect recovery (57).

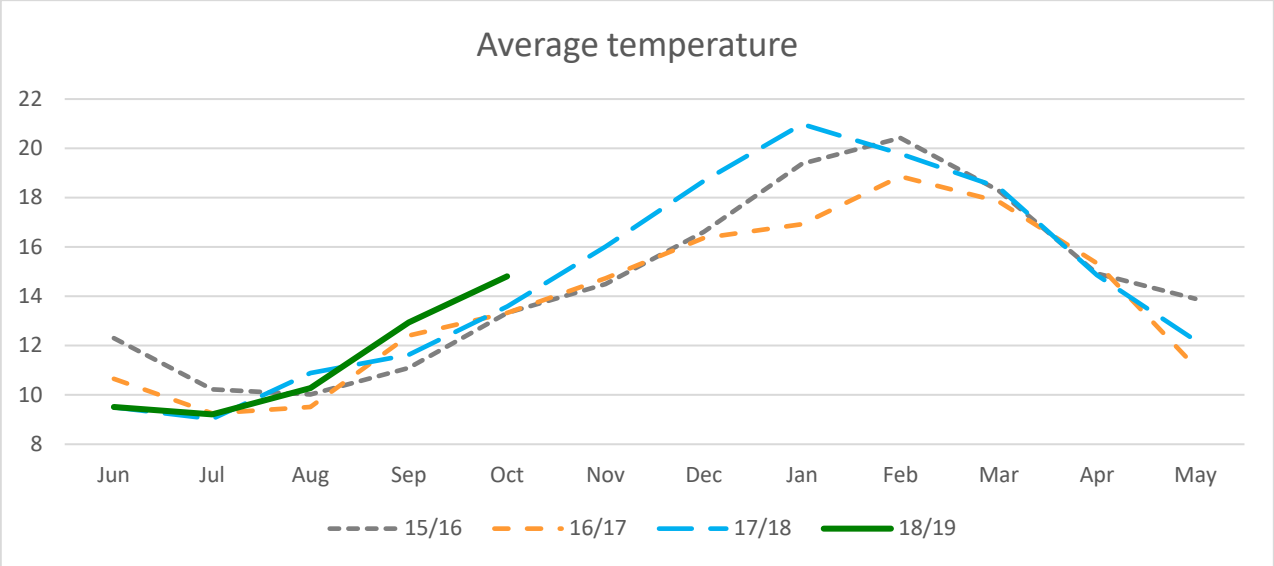
The top performing permanent grass paddocks are our Autumn sown new grass cocksfoot paddocks. On Free draining soils they were expected to hum along through the cooler weather and take it a little easier but survive in the summer. The only Ryegrass new grass paddock this year on a heavier soil type is still performing very well.

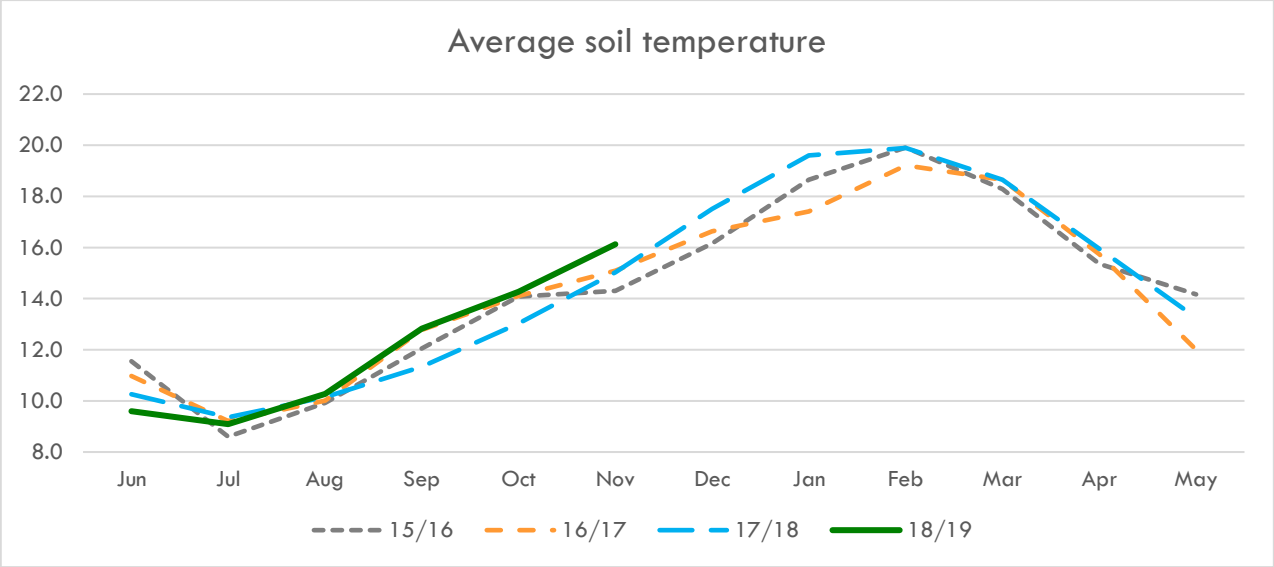


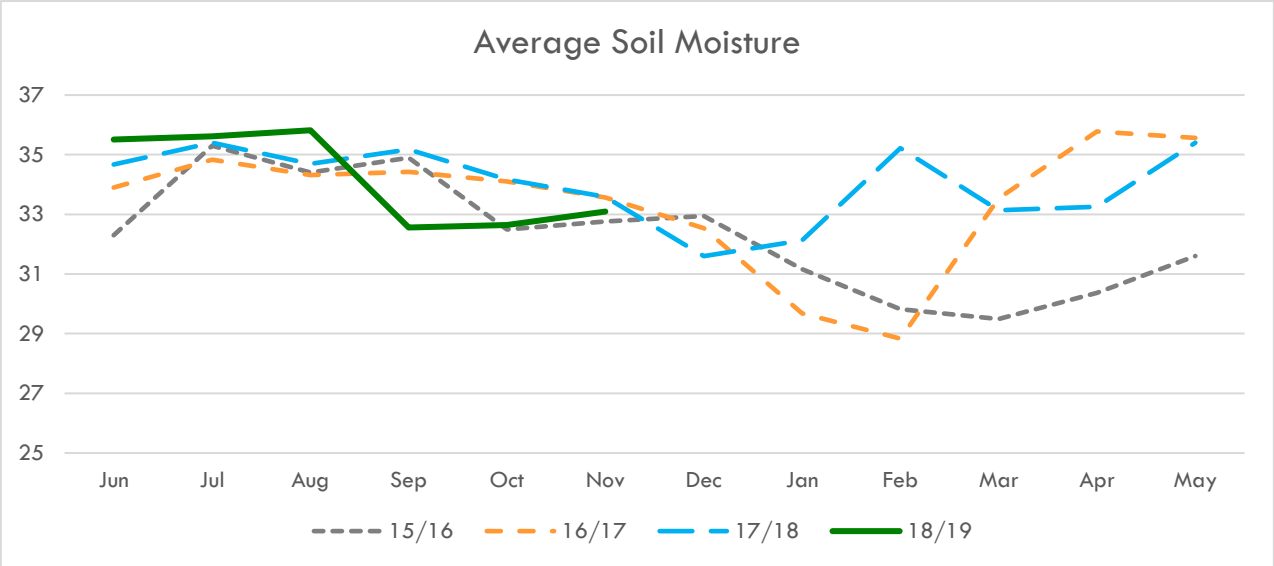
NOTES

Owl Farm

CLIMATE

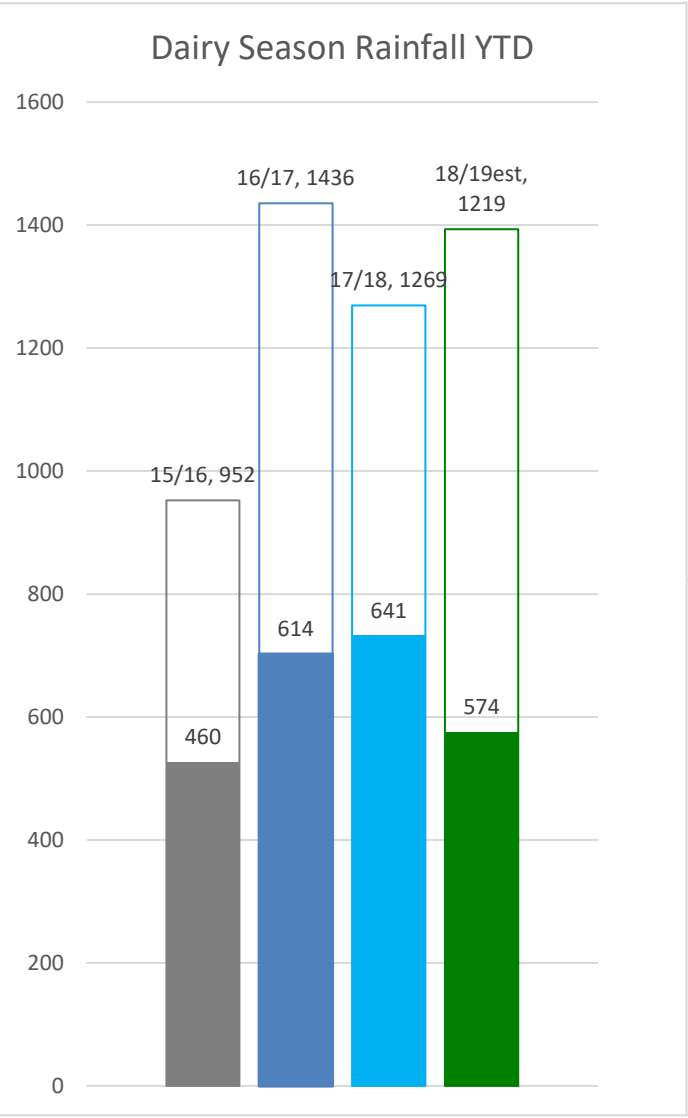


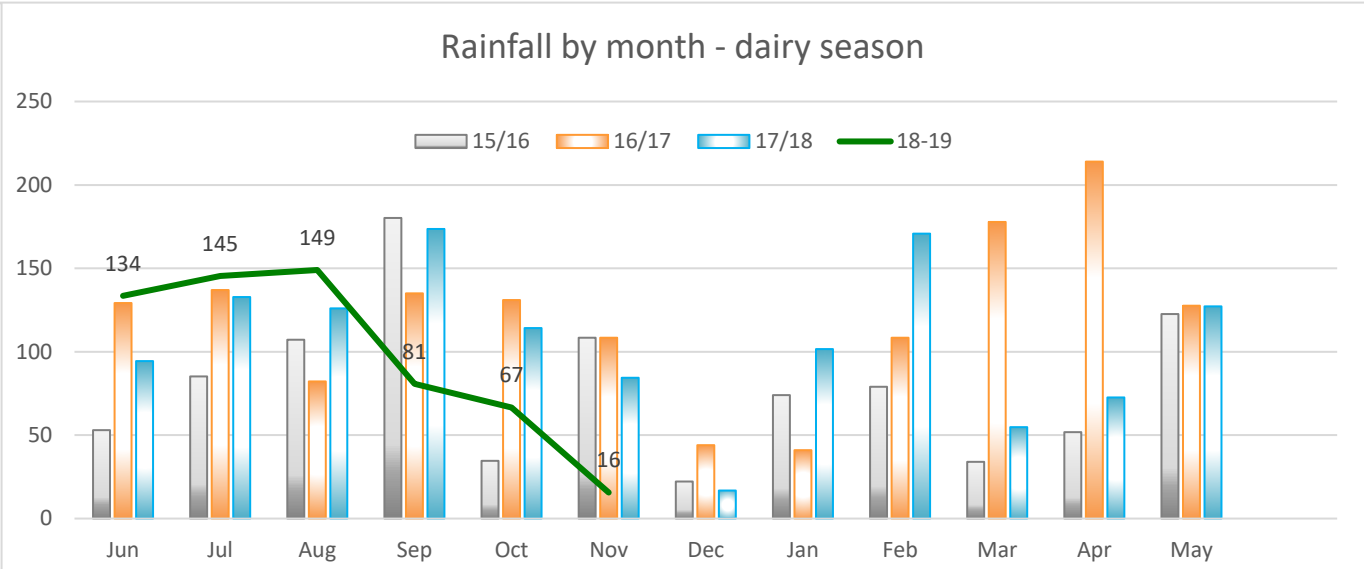


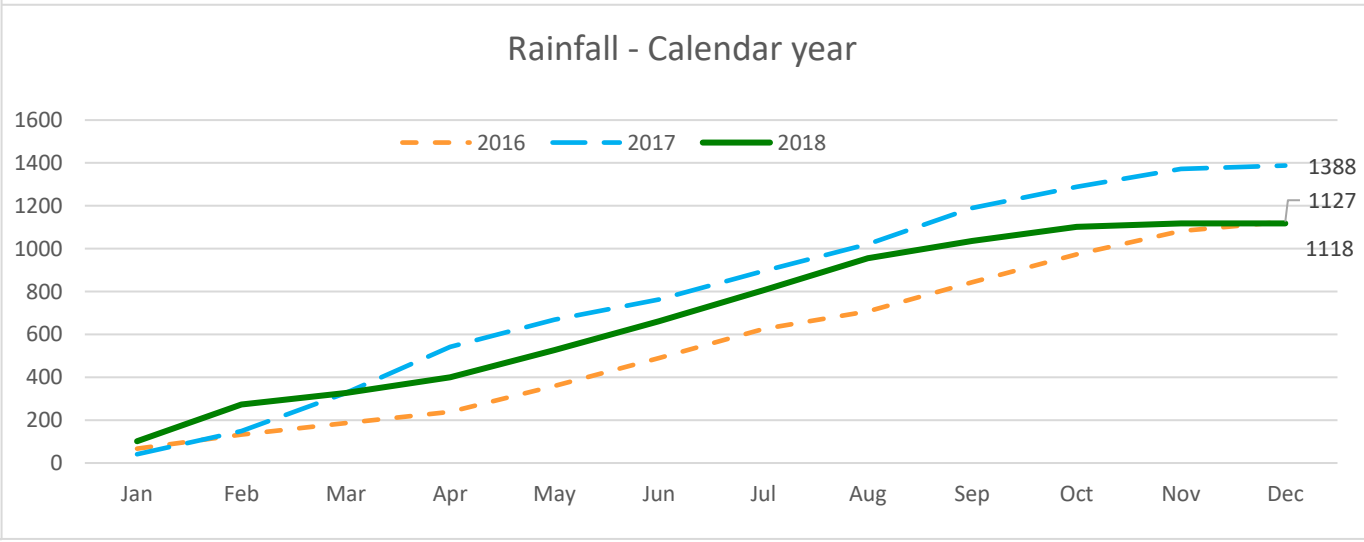


NOTES

RAINFALL



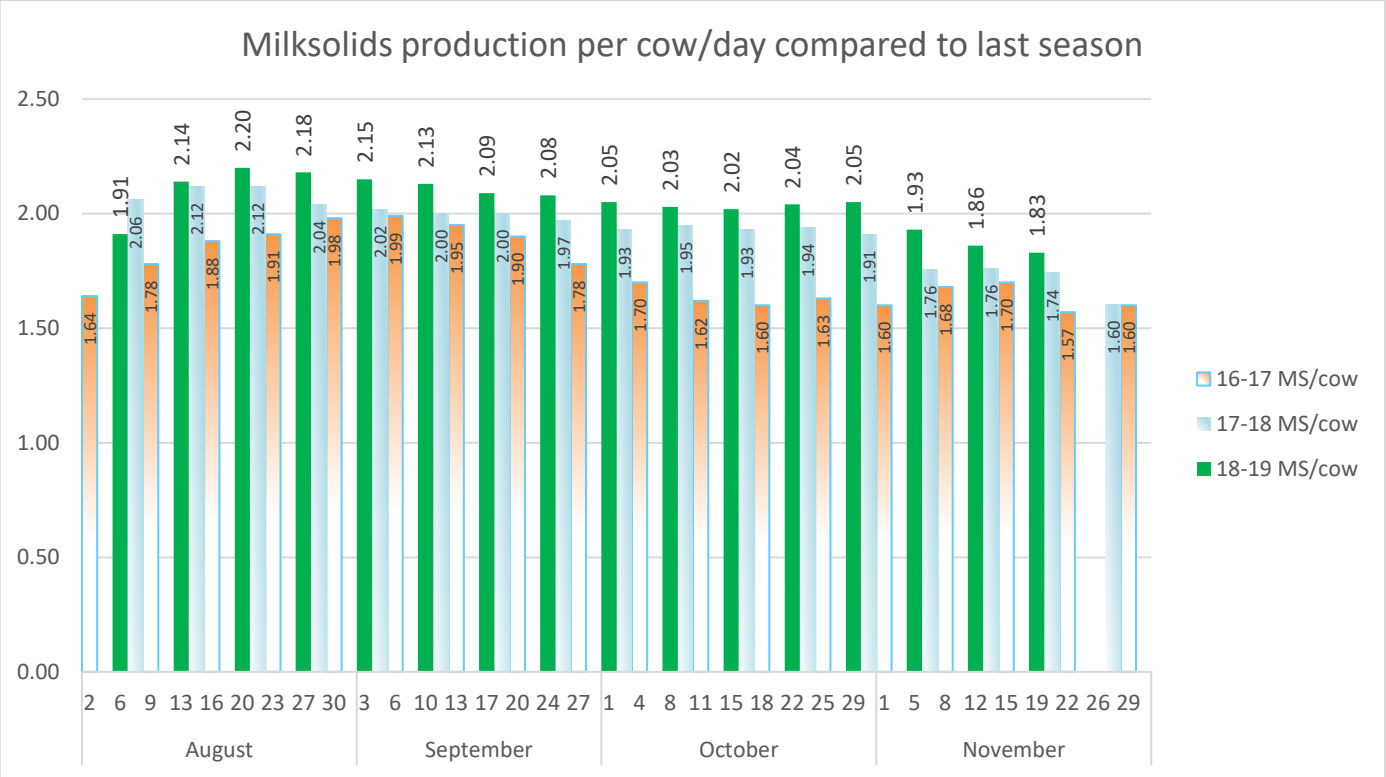


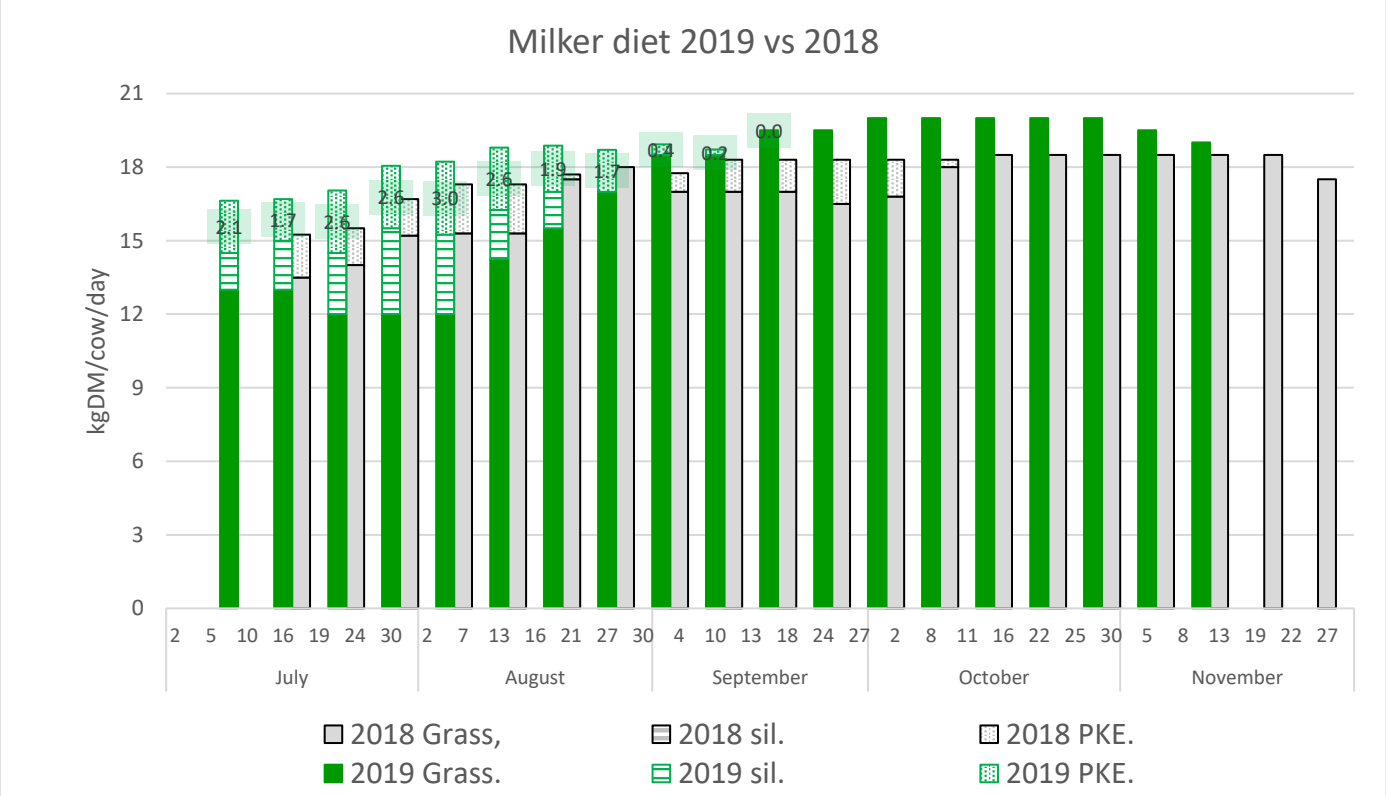


NOTES

Owl Farm

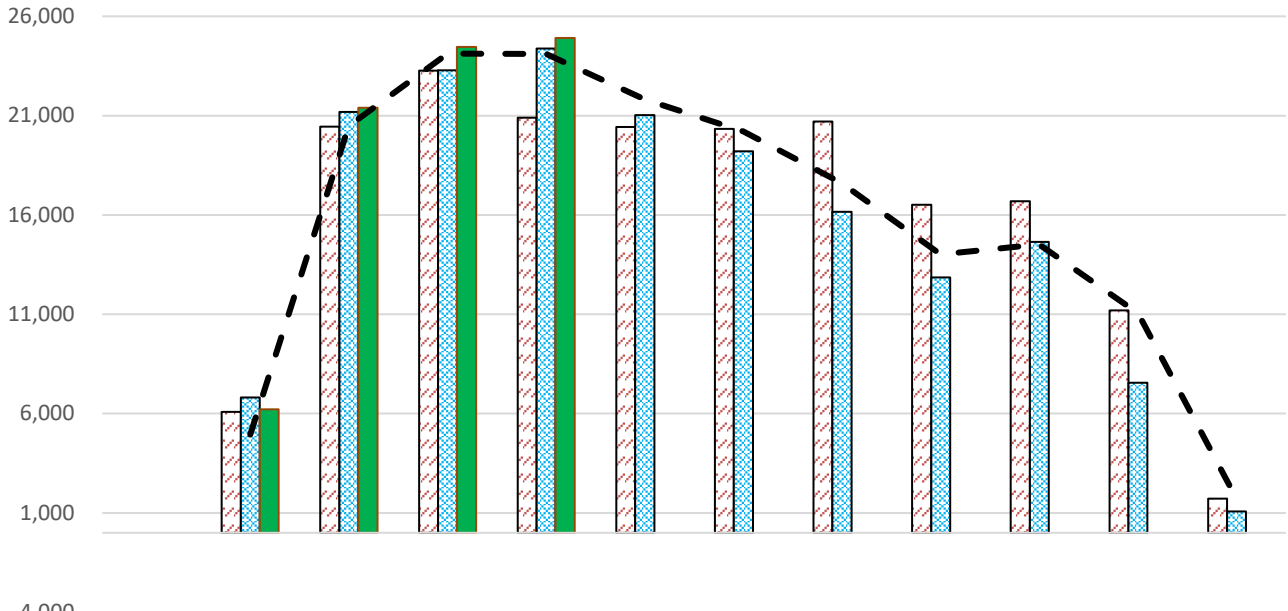
PRODUCTION





NOTES

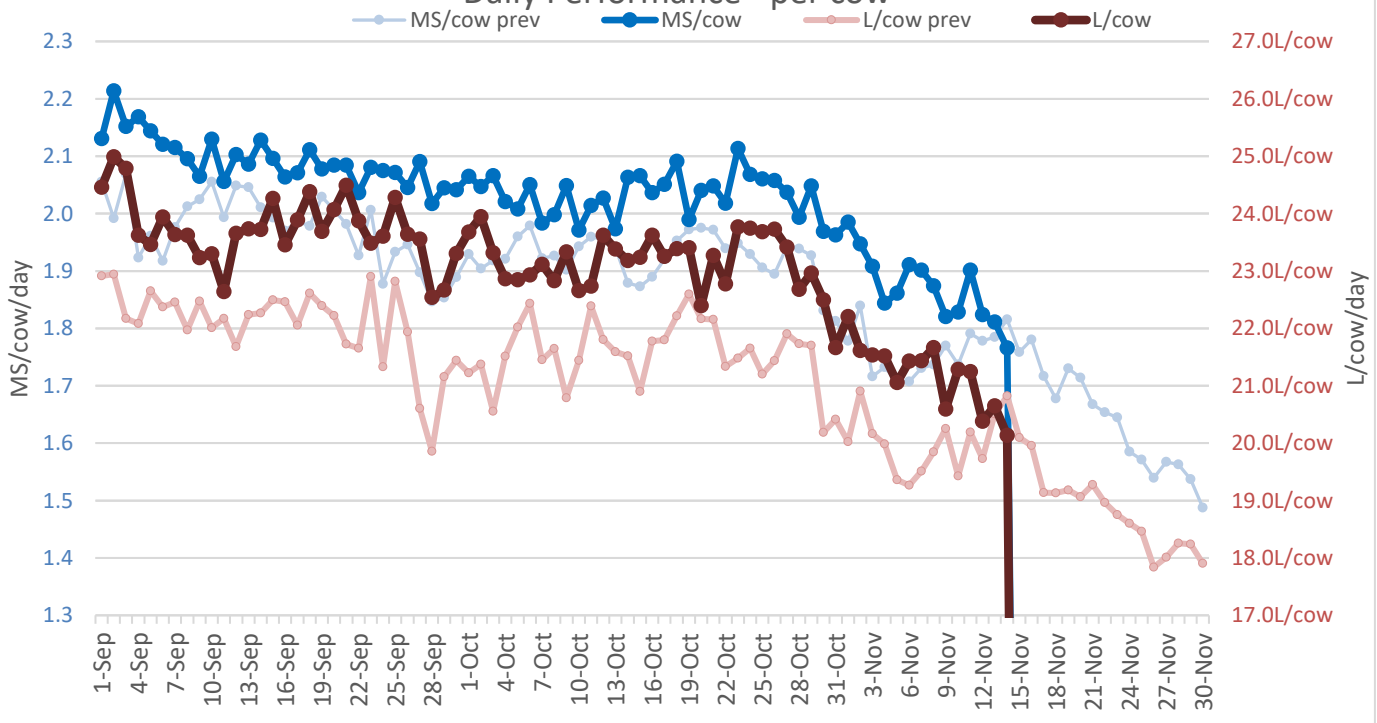
Production: Monthly Performance



	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	24,460	24,906							
Budgeted 18/19		4,943	20,485	24,124	24,108	21,816	20,202	17,589	14,024	14,524	11,044	1,711

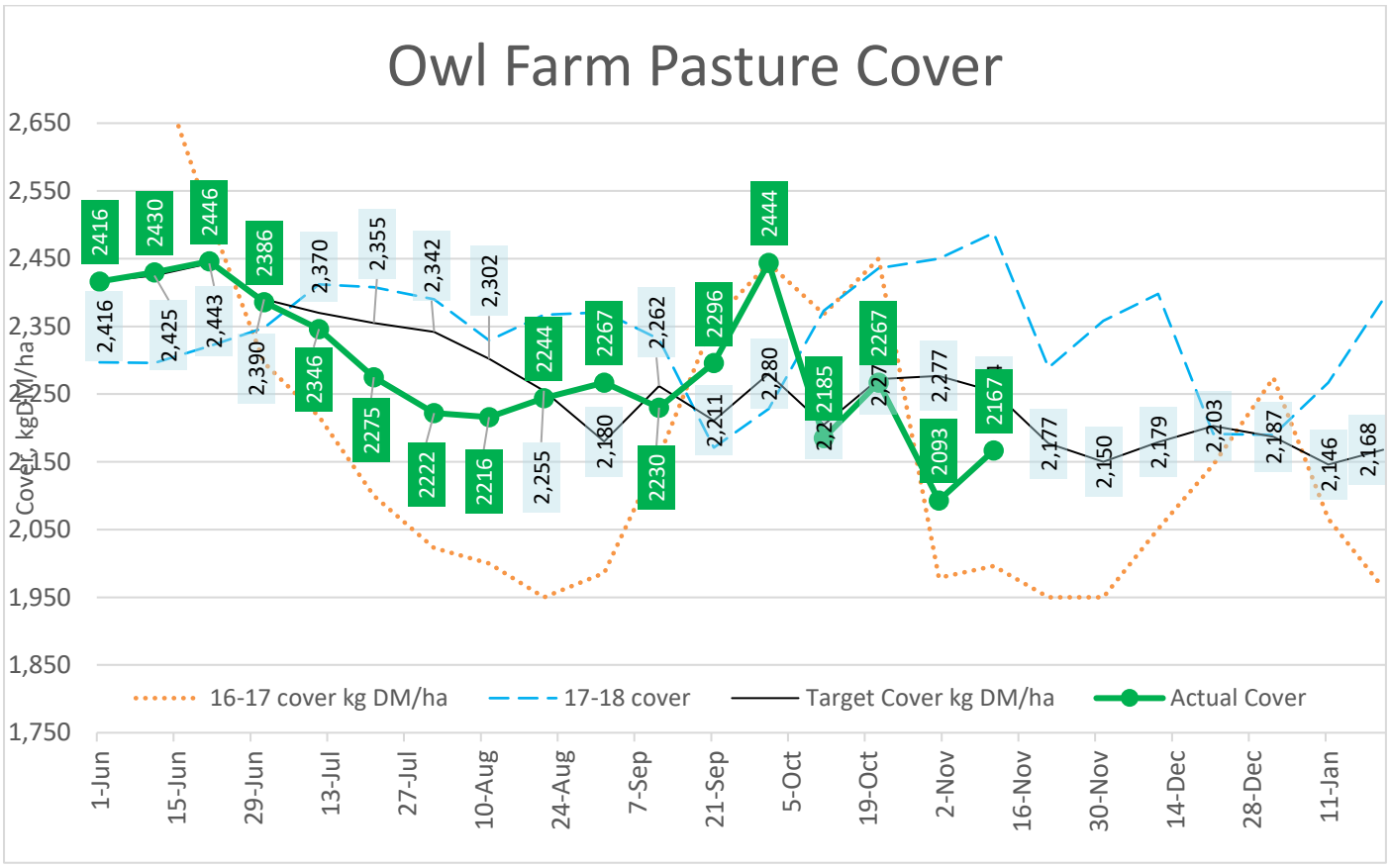
16/17 production 17/18 production 18/19 Production Budgeted 18/19

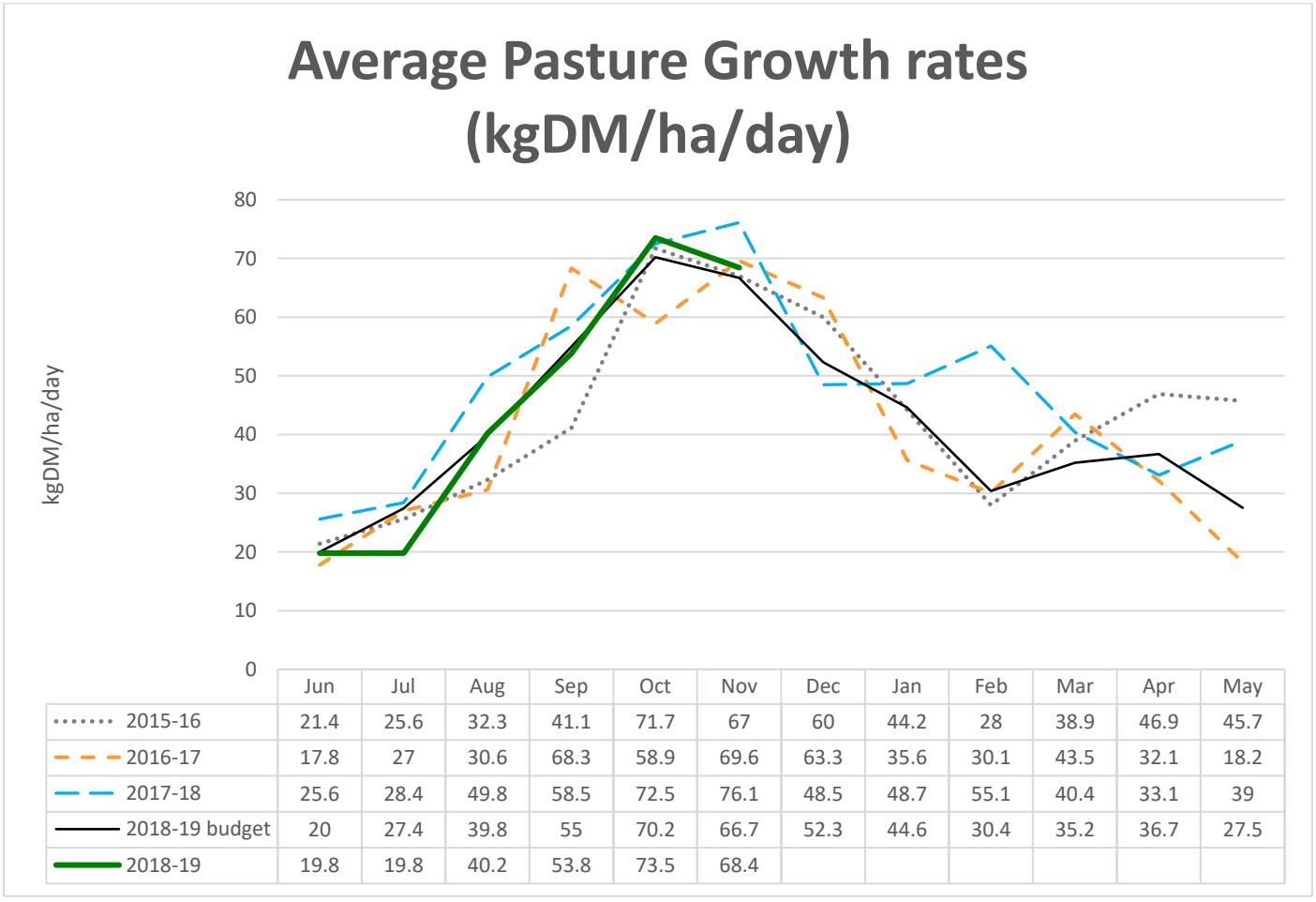
Daily Performance - per cow



NOTES

Owl Farm

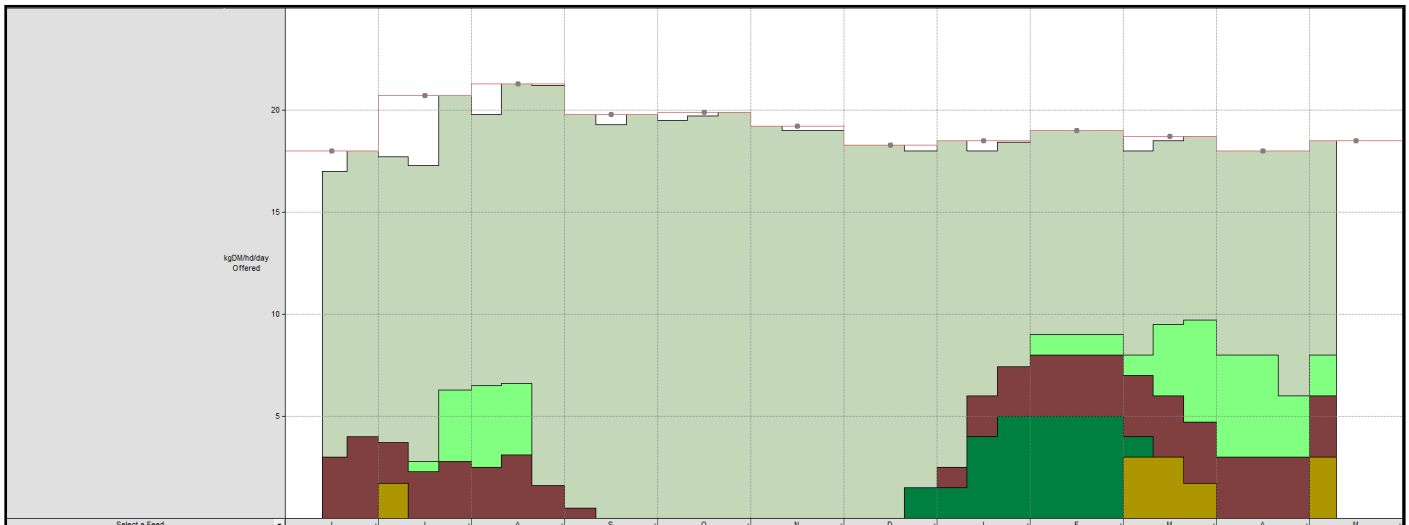




	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
2015-16	21.4	25.6	32.3	41.1	71.7	67	60	44.2	28	38.9	46.9	45.7
2016-17	17.8	27	30.6	68.3	58.9	69.6	63.3	35.6	30.1	43.5	32.1	18.2
2017-18	25.6	28.4	49.8	58.5	72.5	76.1	48.5	48.7	55.1	40.4	33.1	39
2018-19 budget	20	27.4	39.8	55	70.2	66.7	52.3	44.6	30.4	35.2	36.7	27.5
2018-19	19.8	19.8	40.2	53.8	73.5	68.4						

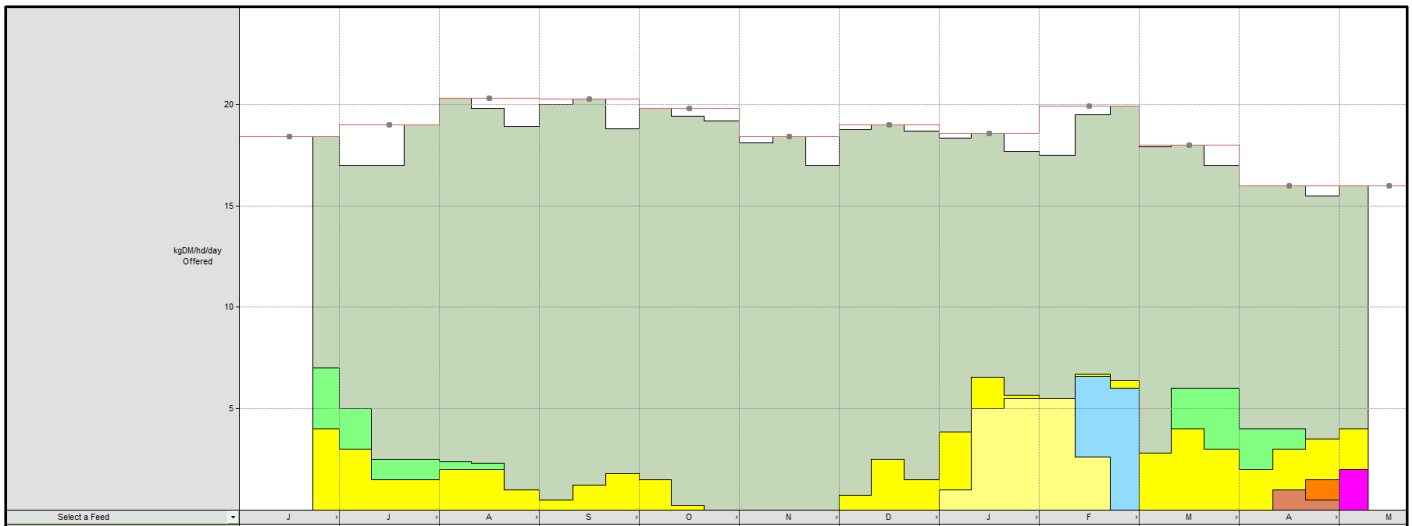
SEASONAL FEED BUDGET

Supplementary feed use throughout the 2018-2019 season



Select a Feed	J	J	A	S	O	N	D	J	F	M	A	M
Pasture	12.8	14.3	15.9	19.5	19.7	19.1	17.7	13.0	10.0	9.3	10.7	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				1.8	3.0	3.0	3.0	3.0
Bought Hay												
McGraths occasional grazing												
Bulb Turnip							0.5	3.5	5.0	0.3		
Rodmor baleage		0.6										
Sorghum Silage												3.0
Dry cow summer silage												
Hay big												
Rodmor silage										2.5		
Total (Utilised)	13.2	13.9	15.6	16.1	16.2	15.8	15.1	15.4	16.1	15.4	14.6	14.9

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 20 March, 2019

Weekly Monitor Walk

Tuesdays, 11am

Like us on Facebook
facebook.com/OwlFarmNZ

Follow us on Twitter
twitter.com/OwlFarmNZ