



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, 25 September 2019

PROVIDING KNOWLEDGE

Season Update

Spring production, profit and performance

Reproduction Preview

Systems and processes for all AB

People Priority

Study of time and tasks at Owl Farm this spring

Fertiliser planning

Decision rules, what products, when and why?



Balance



OWL FARM STRATEGY



St Peter's School/Lincoln University
Demonstration Dairy Farm

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





CONTENTS

<i>Owl Farm Strategy.....</i>	<i>2</i>
<i>Contents.....</i>	<i>3</i>
<i>Health and Safety.....</i>	<i>4</i>
<i>Owl Farm Multi-Year Snapshot</i>	<i>6</i>
<i>Owl Farm season Performance on our Scorecard.....</i>	<i>7</i>
<i>Dairybase data</i>	<i>8</i>
<i>Season to Date</i>	<i>10</i>
Owl Farm Numbers – Seasonal Update	11
<i>Current Year Financials – Budget Cashflow</i>	<i>12</i>
<i>Summary Data</i>	<i>13</i>
Feed Information	13
Climate.....	14
Rainfall	15
Production	16
Pasture Cover and Growth Rates	17
<i>Reproduction Preview.....</i>	<i>18</i>
<i>Mating overview</i>	<i>21</i>
<i>Body Condition Score.....</i>	<i>24</i>
<i>Body Condition Scoring All Cows</i>	<i>25</i>
<i>Fertiliser Plan</i>	<i>26</i>
<i>Acknowledgements</i>	<i>27</i>
<i>New Grass Plan 2019-20</i>	<i>28</i>
<i>People priority - Study of time and tasks on Farm.....</i>	<i>29</i>

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

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

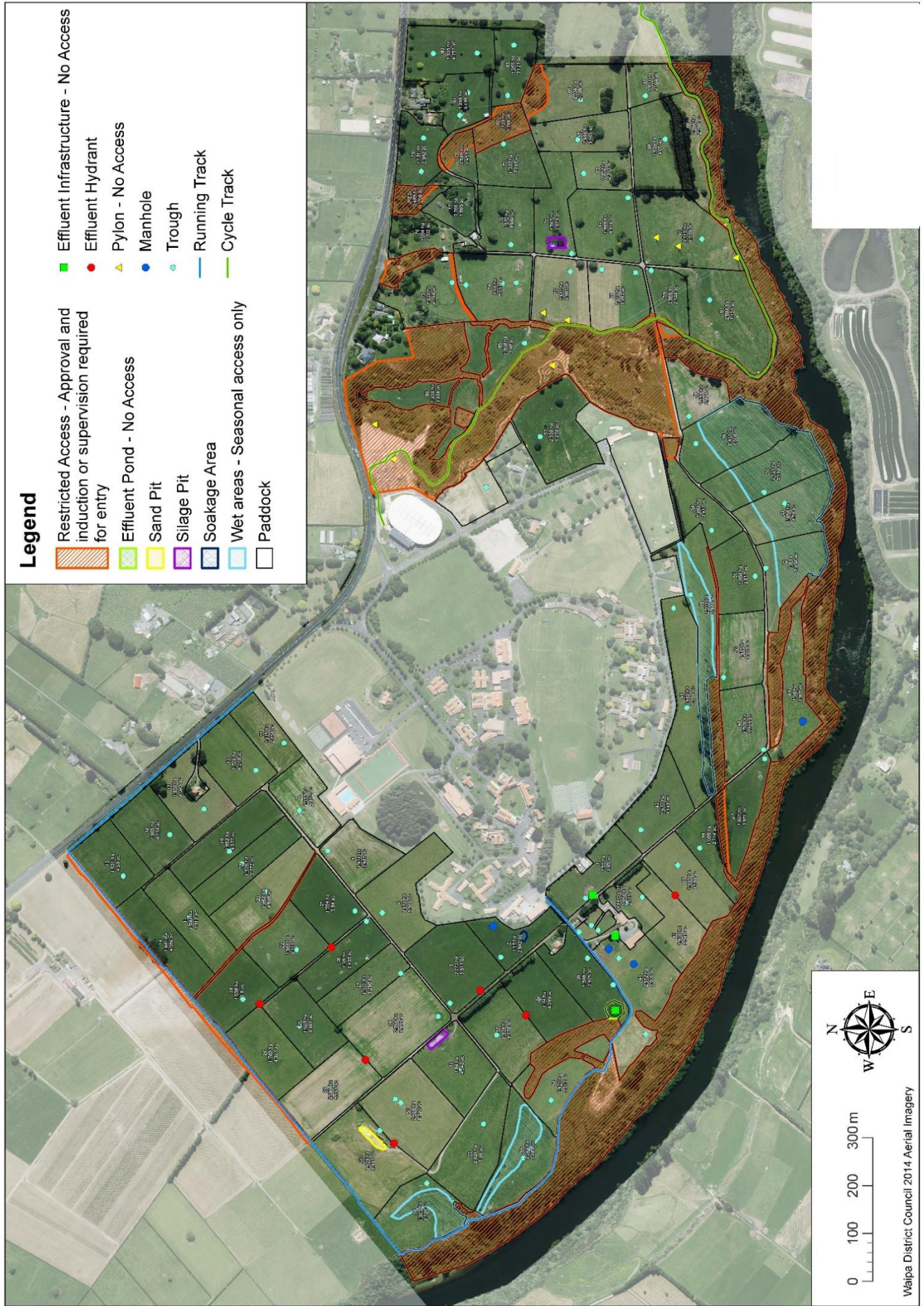
Safety Equipment Location

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

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

NOTES



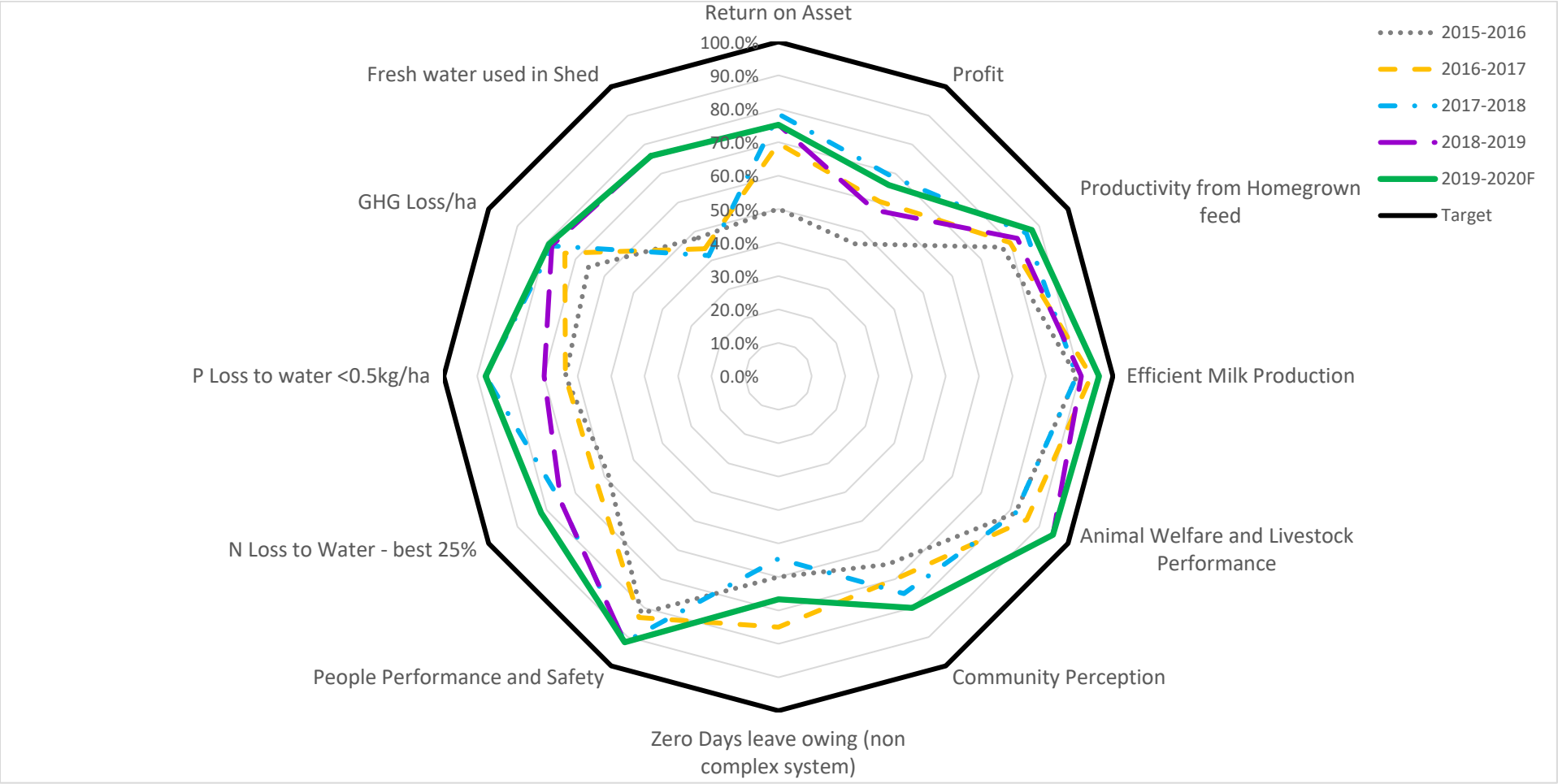


OWL FARM MULTI-YEAR SNAPSHOT

Year		2015-2016	2016-2017	2017-2018	2018-2019	2019-20 F
Physical Info	Total farm area	177	164	164	164	164
	Effective area (ha)	157	146	148	147.3	147.5
	Effective area leased (ha)	23	18	18	18	22
	Leased run off (ha)	3	7	5	3+12	5+5
	Cows wintered	470	453	441	419	421
	Peak cows (1 Nov)	445	423	418	406	412
	Peak stocking rate cows/ha	2.83	2.90	2.82	2.76	2.79
Production	Total kgMS	176,197	178,294	168,169	169,359	177,654
	MS/cow	396	421	402	417	431
	MS/ha	1,122	1,221	1,136	1,150	1,204
	MS/ha from homegrown feed	879	952	978	1,013	1,066
	MS as % liveweight	85.2%	90.6%	86.5%	89.7%	92.7%
	Average SCC	112,000	125,000	146,000	172,000	150,000
Feed and Inputs	Feed grown TDM/ha	15.9	15.1	17.5	15.7	15.9
	Feed harvested TDM/Ha (actual kg)	11.7	12.6	13.6	14.1	12.5
	Feed harvested TDM/ha (@11MJME/kgDM)	12.4	12.8	13.7	13.2	13.6
	Supplements imported TDM/Ha	4.3	3.6	2.3	2.1	2.1
	Supplements imported TDM	671	523	335	306	305.5
	% diet imported	21%	19%	11%	11.8%	11.5%
	% of farm cropped & harvested (silages)	21%	35%	33%	93%	57%
	Nitrogen applied/effective ha	149kg	163kg	150kg	150kg	150kg
Financials	Gross farm rev/kgMS (inc stock/dividend)	\$4.78	\$7.00	\$7.56	\$6.86	\$7.14
	Cash farmgate milk price /kgMS (dairybase)	\$3.46	\$5.52	\$6.39	\$6.43	\$6.75
	Accrued farmgate milk price /kgMS	\$3.90	\$6.12	\$6.66		
	Stock sales /kgMS	\$0.48	\$0.43	\$0.54	\$0.43	\$0.39
	Dividend /kgMS	\$0.41	\$0.44	\$0.36	\$0.00	\$0.00
	FWE/kgMS	\$4.95	\$4.12	\$4.28	\$4.41	\$4.25
	OPEX/kgMS (inc depn & feed inv)	\$5.03	\$4.81	\$4.59	\$4.72	\$4.65
	EFS/ha actual payouts (cash milk rev) Dairybase	-\$723	\$1,925	\$3,096	\$2,482	
	EFS/ha actual payouts (accrued milk rev)	\$126	\$2,742	\$3,446	\$2,395	\$2,871
	EFS/ha @ \$6.00 farmgate milk price (no div)	\$1,189	\$1,807	\$2,102	\$1,922	\$2,060
	Opening debt/kgMS held	\$20.00	\$23.02	\$21.23	\$23.02	\$21.61
Enviro	Estimated N loss kg/ha	40	42	35	35	33
	Estimated P loss kg/ha	1.2	1.1	0.8	0.9	1.0
	GHG loss/ha Overseer FM kgCO ₂ e/ha	11,700	12,600	11,900	11,700	11,900
	Biological GHG/ha (methane + nitrous oxide)	9,744	10,340	9,824	9,361	9,561
	N conversion efficiency	33%	39%	39%	39%	39%
Statistics	Cowshed	36 Rot	36 Rot	36 Rot	36 Rot	36 Rot
	Feed infrastructure	NIL	NIL	NIL	NIL	NIL
	Herd BW/PW	162/189	107/128	112/135	119/153	118/152
	Industry BW/PW	110/122	64/73	72/93	64/73	64/73
	Effluent storage	Clay lined pond			New lined pond	
	% farm effluent applied to	44 ha 29%	51 ha 35 %	51 ha 34%	51 ha 34%	51 ha 34%
	Soils are a mix of clays and sands, on largely flat terraced contour					
	Operational re-grassing via crop and re-grassing ~ 15% per year					
	3 permanent staff members are employed - no relief staff required to cover time off or calf rearing duties.					

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 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 important. Each item creates tension on the others on the wheel to keep our performance improvements balanced.



DAIRYBASE DATA

Multiyear Financial Detail (total \$)				
	Owl Farm (Farm ID: 375316)			
	Dairy Season ended: 2019			
	Printed: 8 September 2019			

	2018-19	2017-18	2016-17	2015-16
Business Type : Region	OO:Waikato	OO:Waikato	OO:Waikato	OO:Waikato
Milking Area (ha)	147.0	148.0	146.0	151.0
Peak Cows	406	418	423	465
Milksolids Kg	169,359	168,169	178,294	176,197

	2018-19		2017-18		2016-17		2015-16	
GROSS FARM REVENUE (GFR)	Total \$	% of GFR	Total \$	% of GFR	Total \$	% of GFR	Total \$	% of GFR
Net Milk Sales	1,086,293	93.8%	1,135,370	94.3%	1,062,385	93.3%	681,516	88.7%
Net Dairy Livestock Sales	65,279	5.6%	91,601	7.6%	76,407	6.7%	108,235	14.1%
Value of Change in Dairy Livestock	126	0.0%	-22,364	-1.9%	-1,084	-0.1%	-22,538	-2.9%
Other Dairy Revenue	6,720	0.6%	0	0.0%	432	0.0%	1,326	0.2%
DAIRY GROSS FARM REVENUE	1,158,418	100.0%	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	178,362	15.4%	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%	0	0.0%
Labour Adjustment - Management	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total Labour Expenses	178,362	15.4%	148,858	12.4%	157,520	13.8%	195,723	25.5%
Stock Expenses								
Animal Health	48,310	4.2%	47,098	3.9%	59,431	5.2%	42,506	5.5%
Breeding & Herd Improvement	42,474	3.7%	38,692	3.2%	37,701	3.3%	23,349	3.0%
Farm Dairy	9,644	0.8%	8,185	0.7%	16,088	1.4%	11,836	1.5%
Electricity (Farm Dairy, Water Supply)	13,484	1.2%	13,711	1.1%	13,462	1.2%	11,290	1.5%
Total Stock Expenses	113,912	9.8%	107,686	8.9%	126,682	11.1%	88,981	11.6%
Feed Expenses								
Supplement Expenses								
Net Made/Purchased, Cropped	144,337	12.5%	131,784	10.9%	123,331	10.8%	265,189	34.5%
Less Feed Inventory Adjustment	0	0.0%	12,800	1.1%	-68,100	-6.0%	63,800	8.3%
Calf Feed	9,874	0.9%	5,839	0.5%	8,765	0.8%	7,410	1.0%
Total Supplement Expenses	154,211	13.3%	124,823	10.4%	200,196	17.6%	208,799	27.2%
Grazing & Support block Expenses								
Young & Dry Stock Grazing	62,745	5.4%	66,678	5.5%	67,798	6.0%	62,200	8.1%
Winter Cow Grazing	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Support block Lease	18,965	1.6%	9,625	0.8%	0	0.0%	0	0.0%
Owned Support block Adjustment	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total Grazing & Support block expenses	81,710	7.1%	76,303	6.3%	67,798	6.0%	62,200	8.1%
Total Feed Expenses	235,921	20.4%	201,126	16.7%	267,994	23.5%	270,999	35.3%
Other Working Expenses								
Fertiliser	58,820	5.1%	35,643	3.0%	33,334	2.9%	91,849	12.0%
Nitrogen	45,999	4.0%	41,112	3.4%	46,236	4.1%	0	0.0%
Irrigation	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Regrassing	23,309	2.0%	31,541	2.6%	38,024	3.3%	22,052	2.9%
Weed & Pest	4,532	0.4%	956	0.1%	248	0.0%	1,204	0.2%
Vehicles	8,212	0.7%	5,084	0.4%	25,027	2.2%	8,052	1.0%
Fuel	7,601	0.7%	7,620	0.6%	8,053	0.7%	8,630	1.1%
R & M - land & buildings	19,887	1.7%	25,788	2.1%	20,784	1.8%	26,459	3.4%
R & M - plant and equipment	32,592	2.8%	20,367	1.7%	11,858	1.0%	15,499	2.0%
Freight and General	1,819	0.2%	3,275	0.3%	3,643	0.3%	15,153	2.0%
Total Other Working Expenses	202,771	17.5%	171,384	14.2%	187,007	16.4%	188,898	24.6%
Overheads								
Administration	4,177	0.4%	5,849	0.5%	13,967	1.2%	21,647	2.8%
Insurance	20,628	1.8%	21,790	1.8%	20,628	1.8%	21,000	2.7%
ACC	7,029	0.6%	6,561	0.5%	9,259	0.8%	8,728	1.1%
Rates	26,205	2.3%	30,175	2.5%	21,041	1.8%	28,719	3.7%
Depreciation	52,987	4.6%	52,979	4.4%	52,980	4.7%	52,980	6.9%
Total Overheads	111,026	9.6%	117,354	9.7%	117,875	10.4%	133,074	17.3%
DAIRY OPERATING EXPENSES	841,992	72.7%	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	316,426	27.3%	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%

Multiyear Financial Detail (per Ha)

Owl Farm (Farm ID: 375316)
Dairy Season ended: 2019

Printed: 8 September 2019

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

	2018-19	2017-18	2016-17
Number in Benchmark Group:	1 (DairyNZ Estimate)	235	272
Kg Milksolids/ha	1,152	1,029	1,136
Kg Milksolids/cow	417	355	402
Cows/FTE	135	213	144

	2018-19		2018-19		2017-18		2016-17	
	Total \$	% of GFR	Farm	BM	Farm	BM	Farm	BM
GROSS FARM REVENUE (GFR)								
Net Milk Sales	1,086,293	93.8%	7,390	6,586	7,671	7,633	7,277	6,606
Net Dairy Livestock Sales	65,279	5.6%	444	480	619	637	523	581
Value of Change in Dairy Livestock	126	0.0%	1	81	-151	-16	-7	1
Other Dairy Revenue	6,720	0.6%	46	56	0	45	3	41
DAIRY GROSS FARM REVENUE	1,158,418	100.0%	7,880	7,203	8,139	8,299	7,795	7,228
Total GFR (incl non-dairy)								
OPERATING EXPENSES								
Labour Expenses								
Wages	178,362	15.4%	1,213	655	1,006	852	1,079	808
Labour Adjustment - Non-paid	0	0.0%	0	139	0	51	0	56
Labour Adjustment - Management	0	0.0%	0	329	0	240	0	258
Total Labour Expenses	178,362	15.4%	1,213	1,123	1,006	1,143	1,079	1,122
Stock Expenses								
Animal Health	48,310	4.2%	329	264	318	291	407	264
Breeding & Herd Improvement	42,474	3.7%	289	176	261	171	258	151
Farm Dairy	9,644	0.8%	66	65	55	66	110	67
Electricity (Farm Dairy, Water Supply)	13,484	1.2%	92	131	93	132	92	130
Total Stock Expenses	113,912	9.8%	775	637	728	660	868	613
Feed Expenses								
Supplement Expenses								
Net Made, Purchased, Cropped	144,337	12.5%	982	1,106	890	1,448	845	1,146
Less Feed Inventory Adjustment	0	0.0%	0	-40	88	23	-466	43
Calf Feed	9,874	0.9%	67	0	39	64	60	53
Total Supplement Expenses	154,211	13.3%	1,049	1,146	843	1,489	1,371	1,155
Grazing & Support block Expenses								
Young & Dry Stock Grazing	62,745	5.4%	427	293	451	321	464	365
Winter Cow Grazing	0	0.0%	0	0	0	82	0	25
Support block Lease	18,965	1.6%	129	48	65	50	0	49
Owned Support block Adjustment	0	0.0%	0	64	0	55	0	67
Total Grazing & Support block expenses	81,710	7.1%	556	405	516	508	464	506
Total Feed Expenses	235,921	20.4%	1,605	1,551	1,359	1,998	1,836	1,661
Other Working Expenses								
Fertiliser	58,820	5.1%	400	503	241	413	228	435
Nitrogen	45,999	4.0%	313	0	278	61	317	70
Irrigation	0	0.0%	0	0	0	4	0	4
Regrassing	23,309	2.0%	159	70	213	82	260	79
Weed & Pest	4,532	0.4%	31	39	6	48	2	42
Vehicles	8,212	0.7%	56	238	34	155	171	150
Fuel	7,601	0.7%	52	0	51	43	55	35
R & M - land & buildings	19,887	1.7%	135	381	174	314	142	256
R & M - plant and equipment	32,592	2.8%	222	0	138	133	80	118
Freight and General	1,819	0.2%	12	66	22	48	25	52
Total Other Working Expenses	202,771	17.5%	1,379	1,297	1,158	1,299	1,281	1,240
Overheads								
Administration	4,177	0.4%	28	130	40	143	96	137
Insurance	20,628	1.8%	140	90	147	69	141	64
ACC	7,029	0.6%	48	25	44	21	63	25
Rates	26,205	2.3%	178	140	204	119	144	121
Depreciation	52,987	4.6%	360	384	358	382	363	394
Total Overheads	111,026	9.6%	755	770	793	734	807	740
DAIRY OPERATING EXPENSES	841,992	72.7%	5,728	5,377	5,043	5,833	5,870	5,377
Total Operating Exp. (incl non-dairy)								
OPERATING PROFIT								
DAIRY OPERATING PROFIT	316,426	27.3%	2,153	1,826	3,096	2,466	1,925	1,853
Total Operating Profit (incl non-dairy)								

SEASON TO DATE

	Season to date 10/09/2019	2016-2017	2017-2018	2018-2019	2019-2020	Notes
Stock	Milking Platform	146	148	147	147	
	Cows on farm	430	430	411	407	
	Peak cows	423	418	405	405	
	Cows calved	404	420	403	404	
	Cows in vat today	385	410	389	397	
	Peak stocking rate	2.90	2.82	2.75	2.75	1
Production	Total kgMS Season to date to factory	34,309	35,498	35,500	37,740	2
	MS/cow/day - last 10 days	1.96	2.00	2.13	2.16	
	MS/ha/day - last 10 days	5.32	5.07	5.37	5.46	
	MS/cow Season to date	81	85	88	93	3
	MS/ha Season to date	235	239	241	256	
	MS/ha from homegrown feed to date	181	176	202	240	4
Feed and Inputs	Average Pasture Cover 1 June	2,951	2,256	2,430	2,516	
	Pasture Cover at 15 Feb	1,798	2,494	2,051		
	Pasture growth rates total TDM/ha	3.7	3.6	3.4	4.1	5
	Actual pasture grown to graze and harvest as silage excl area sprayed out in crop	3.3	3.3	3.2	3.5	6
	Reduction in APC TDM/ha 16-17 only (mined cover from 2900 to 1900 pre-balance date)	1.0	0.0	0.0	0.0	
	Total pasture supply TDM/ha	4.3	3.3	3.2	3.5	
	Yield of Crop grown per total farm /ha	0.0	0.0	0.0	0.0	
	Winter homemade silage on hand fed	0.2	0.2	0.8	0.0	
	Imported Supplements fed/ha	1.2	1.2	0.8	0.2	
	Total Feed supply TDM/ha	5.6	4.8	4.8	3.7	7
	Homegrown grass eaten TDM/ha (grown this year)	3.0	2.6	2.6	2.9	
	Homegrown silage grown and eaten this year	0.0	0.0	0.0	0.0	
	Crop eaten per total farm/ha	0.0	0.0	0.0	0.0	
	Homegrown feed EatenTDM/ha (grown this year)	3.0	2.6	2.6	2.9	8
	Feed Harvested TDM/ha (11.0MJME/kgDM)					
	Silage harvested TDM/ha Season to date	0.0	0.1	0.2	0.0	
	Total Homegrown feed Harvested TDM/ha	3.0	2.7	2.7	3.0	
	Winter homemade silage on hand eaten	0.1	0.2	0.6	0.0	
	Imported Supplements Eaten TDM/ha	0.9	1.0	0.6	0.2	
	Total Feed eaten this year (includes only silage fed) TDM/ha	4.1	3.8	3.8	3.1	
	Feed Eaten TDM/ha (11.0MJME/kgDM)	15.3	15.7			
	% Feed eaten grown on farm	77%	74%	84%	94%	9
	Feed conversion Eff (kgDM/kgMS eaten)	17.4	15.7	15.8	12.3	10
	Nitrogen Applied/effective ha	57	40	36	32	
Inventory feed T DM	Homegrown silage/hay	0	34	0	92	
	Crops available (estimate yield remaining)	0	0	0	0	
	PKE in budget for rest of year	129	124	121	180	
	Bought silage hay	0	0	0	33	
	Maize silage	227	0	0	0	
	Total supplements on hand	356	158	121	305	11

OWL FARM NUMBERS – SEASONAL UPDATE

Stocking Rate

1. We wintered 419 cows and currently have 405 cows in milk on farm, meaning we will have a comparable stocking rate again in the coming season.

Milk Matters

2. An agreeable June saw high pasture covers going into calving and cows that averaged BCS of 5.6, resulting in 2,240kgMS more milk in the vat so far this season compared to last season.
3. Cows are producing well, maintaining over 2 kg MS/cow/day from 9th August to now on an almost all grass milking diet for this spring.

Summary of the pantry this year

4. A substantial lift in milksolids from home grown feed has been achieved due to more milk from the following factors:
5. Total pasture supply to date is an extra 0.7 T DM/ha compared with last year. This is mainly due to higher than average growth rates throughout June and average growth rates through July and August.
6. A small amount of sorghum silage was feed and approximately 11.1 T DM/ of PKE was feed during wet periods and to at-risk mobs.
7. Total feed supply required to produce milk to date is lower this year due to reduced amount of supplement being fed. Supplement feed carries with it an element of wastage that is higher than that from pasture.
8. Homegrown feed eaten this season is higher due to the extra 0.7 T DM grown but not all fully utilised as we juggled with high covers early on in the season and limited ability to eat it all before death and decay within the sward. We did make some early silage on one paddock that was slowing the round down too much as we grappled with paddocks with high covers no longer accumulating DM.
9. 94% of feed eaten so far has been grown on the farm; this has saved time on tractors, fuel and R&M costs, and costs of supplements, as can be seen in the cashflow to date.
10. The conversion of this high quality spring feed into milk so far has exceeded all previous years to date.
11. We are entering into summer with lots of feed on hand with two bunkers of grass silage for milking on and one of sorghum silage for dry cows.

CURRENT YEAR FINANCIALS – BUDGET CASHFLOW

Owl Farm - For Year Ended: May 2020



INCOME	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Total	Budget YTD	Variance YTD	Budget Full Year
Milk Solids KG	-	7,184	22,507	-	-	-	-	-	-	-	-	-	29,690	30,045	(355)	177,654
Milk	-	31,731	98,002	-	-	-	-	-	-	-	-	-	129,733	131,417	(1,684)	1,192,317
Dividends	-	-	6,781	-	-	-	-	-	-	-	-	-	6,781	6,720	61	6,720
Cattle	(9,126)	1,448	13,278	-	-	-	-	-	-	-	-	-	5,600	11,924	(6,324)	68,575
Other Income	-	6,827	-	-	-	-	-	-	-	-	-	-	6,827	-	6,827	-
Total Income	(9,126)	40,006	118,061	-	-	-	-	-	-	-	-	-	148,940	150,061	(1,121)	1,267,612
EXPENSES	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Total	Budget YTD	Variance YTD	Budget Full Year
Wages	13,337	13,213	13,645	-	-	-	-	-	-	-	-	-	40,195	41,700	(1,505)	180,292
Animal Health	6,255	2,501	9,873	-	-	-	-	-	-	-	-	-	18,629	19,158	(529)	56,317
Breeding	204	-	146	-	-	-	-	-	-	-	-	-	350	1,493	(1,143)	38,403
Dairy Shed and Electricity	1,117	490	2,068	-	-	-	-	-	-	-	-	-	3,673	7,359	(3,686)	22,977
Purchased Feed	14,050	757	6,744	-	-	-	-	-	-	-	-	-	21,551	33,007	(11,456)	109,514
Grazing - Replacement Heifers & Calves	3,586	3,703	3,723	-	-	-	-	-	-	-	-	-	11,013	11,827	(814)	64,500
Fertiliser	9,671	-	6,610	-	-	-	-	-	-	-	-	-	16,281	17,055	(774)	90,276
Gibberellic Acid	-	-	-	-	-	-	-	-	-	-	-	-	-	308	-	1,208
Fertiliser Spreading	(1,101)	-	-	-	-	-	-	-	-	-	-	-	(1,101)	-	(1,101)	5,984
Freight	-	1,455	160	-	-	-	-	-	-	-	-	-	1,615	155	1,460	3,619
Cartage	-	-	880	-	-	-	-	-	-	-	-	-	880	905	(25)	8,855
Weeds and Pests	1,961	-	-	-	-	-	-	-	-	-	-	-	1,961	1,322	639	2,500
Consultancy	-	-	417	-	-	-	-	-	-	-	-	-	417	-	417	652
Silage	-	817	270	-	-	-	-	-	-	-	-	-	1,087	-	1,087	36,349
Cropping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13,947
Regrassing	-	-	850	-	-	-	-	-	-	-	-	-	850	800	50	20,549
R&M	3,661	6,208	10,848	-	-	-	-	-	-	-	-	-	20,717	13,248	7,469	52,844
Vehicle Expenses	2,060	2,139	1,509	-	-	-	-	-	-	-	-	-	5,708	7,806	(2,098)	19,634
General	565	2,888	1,684	-	-	-	-	-	-	-	-	-	5,138	3,993	1,145	16,998
Overheads	1,719	1,719	3,757	-	-	-	-	-	-	-	-	-	7,195	6,250	945	41,890
Total Farm Working Expenses	57,086	35,891	63,182	-	-	-	-	-	-	-	-	-	156,159	166,385	(10,226)	787,368
Net Surplus before Financial Charges	(66,212)	4,114	54,879	-	-	-	-	-	-	-	-	-	(7,219)	(16,325)	9,105	480,245
Financial Charges	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Total	Budget YTD	Variance YTD	Budget Full Year
Interest Cost	14,106	14,106	14,106	0	0	0	0	0	0	0	0	0	42,318	45,942	(3,624)	178,143
Lease Land	3,103	3,103	3,103	0	0	0	0	0	0	0	0	0	9,310	8,880	430	35,520
Depreciation	8,799	9,093	8,205	0	0	0	0	0	0	0	0	0	26,097	25,500	597	52,979
Total Financial Charges	26,009	26,302	25,415	-	-	-	-	-	-	-	-	-	77,726	80,322	(2,597)	266,642
Surplus (Deficit) after Financial Charges	(92,221)	(22,188)	29,464	-	-	-	-	-	-	-	-	-	(84,945)	(96,647)	11,702	213,602

NOTES



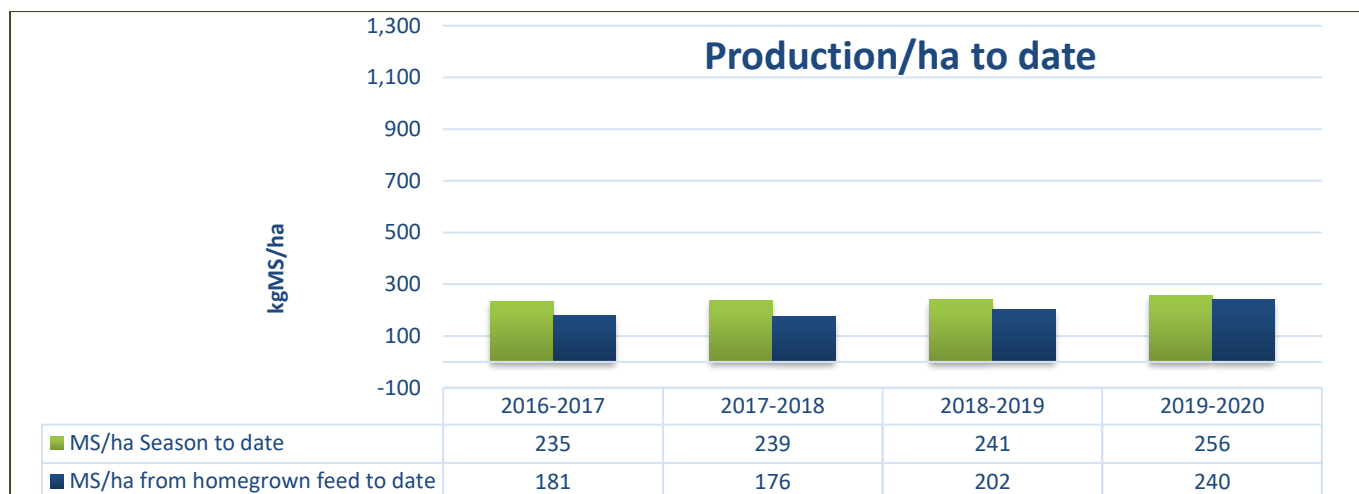
SUMMARY DATA

FEED INFORMATION

High average growth rates in June have had a huge effect on cover carried through the early part of spring. Growth rates throughout July, August and September have been average but with minimal damage (through good management) and good grazing weather, pastures are in excellent condition for spring grazing.

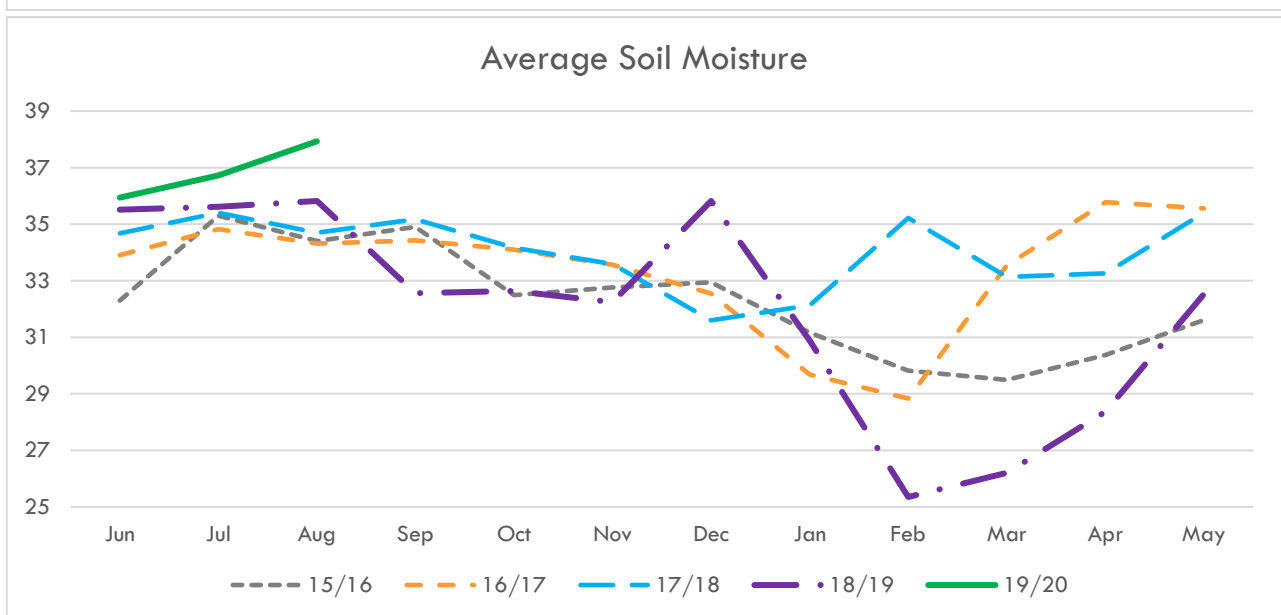
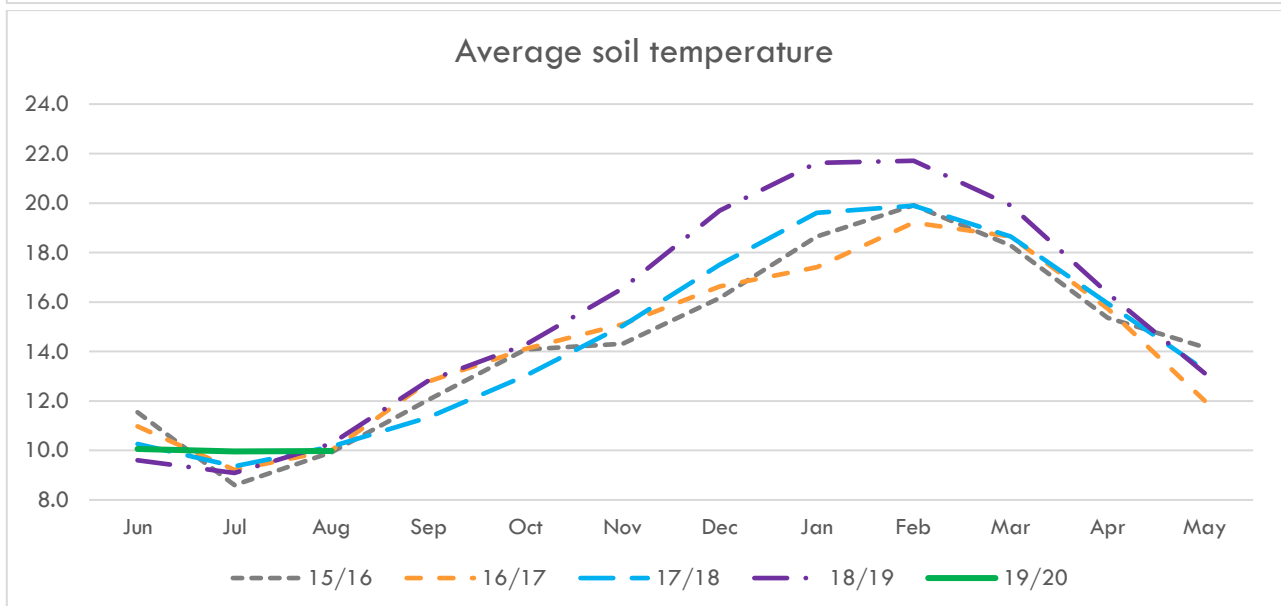
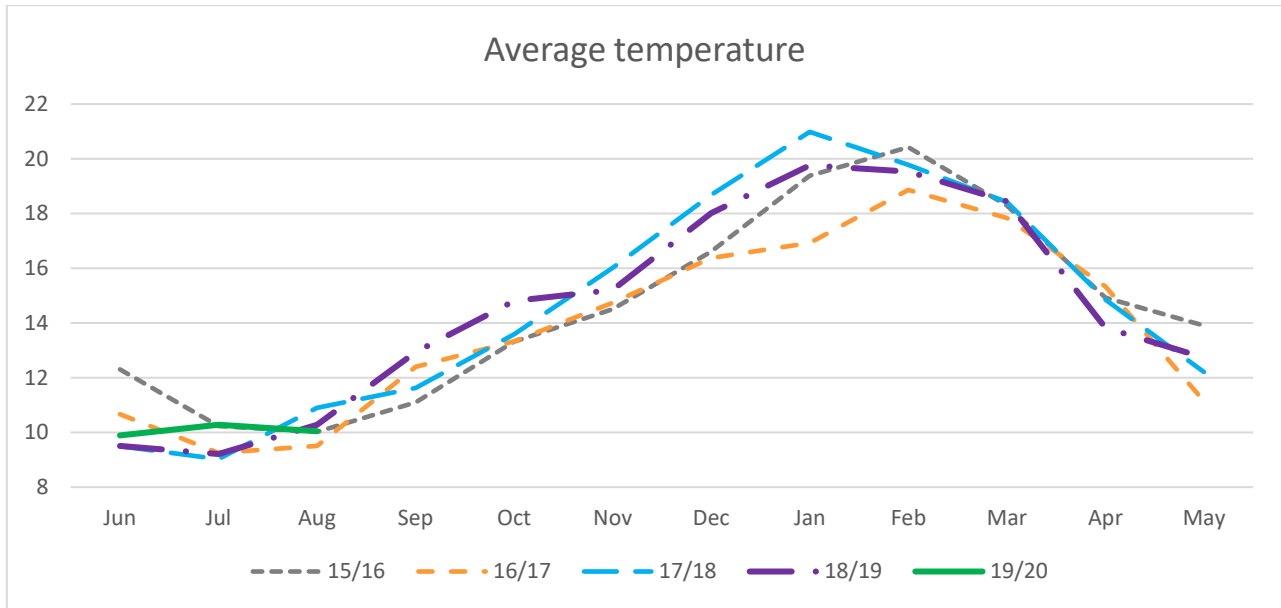
By the 10th September we had used only 12.5 T DM of sorghum silage for dry cows compared with 132 T DM silage used last season. We have imported and feed 13 T PKE this year compared with 76 T DM this time last season. We have used approximately the same amount of N as we were concerned about regrowth on paddocks that had held high covers for long periods of time. This seems to have helped regrowth.

We have 2,240 Kg MS more, spent \$10k less than budget and have BCS 4.7 going into mating.



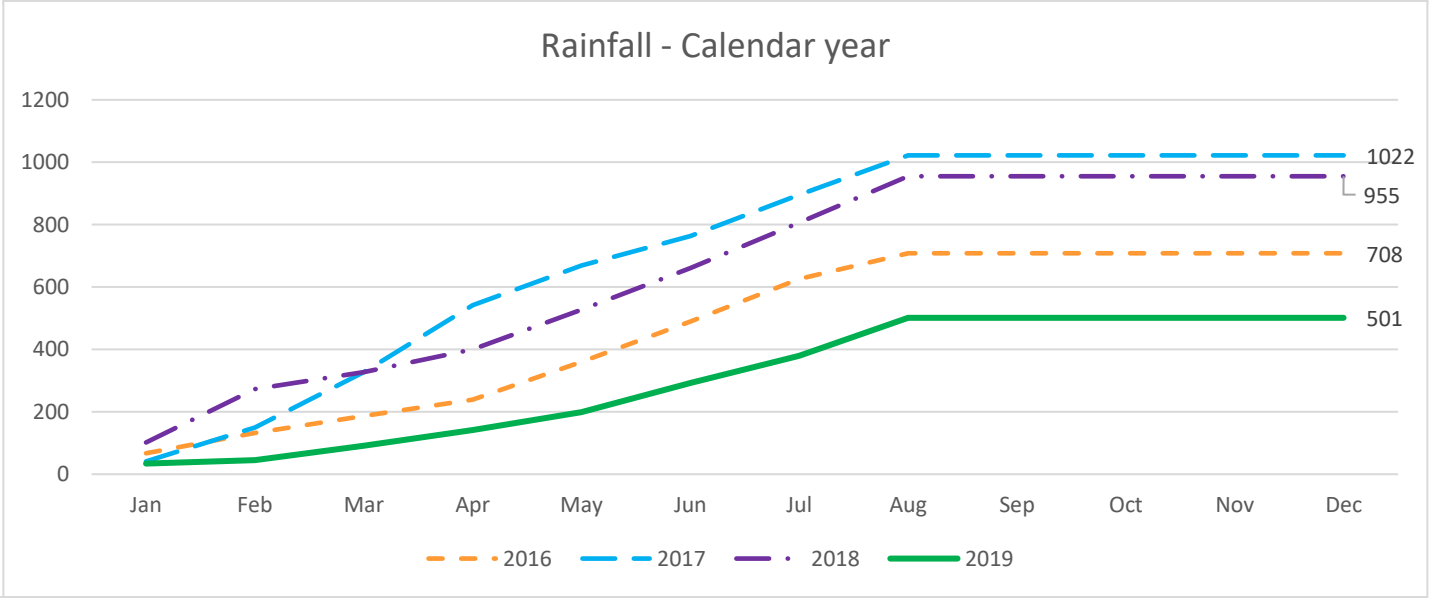
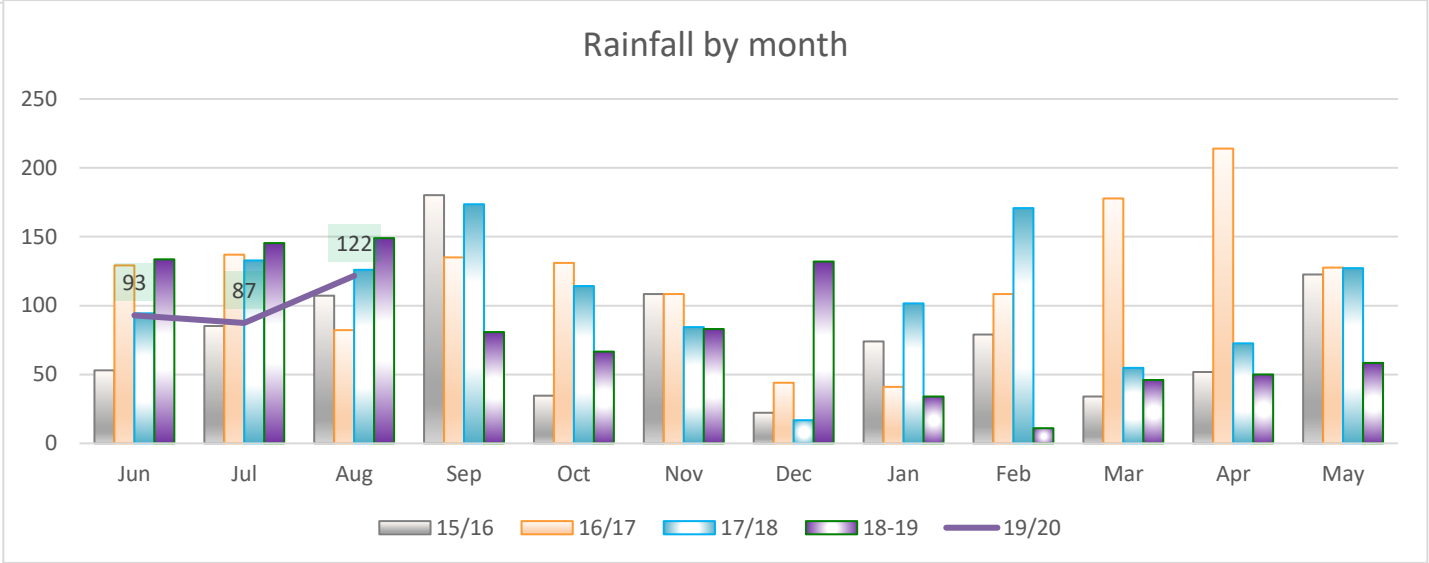
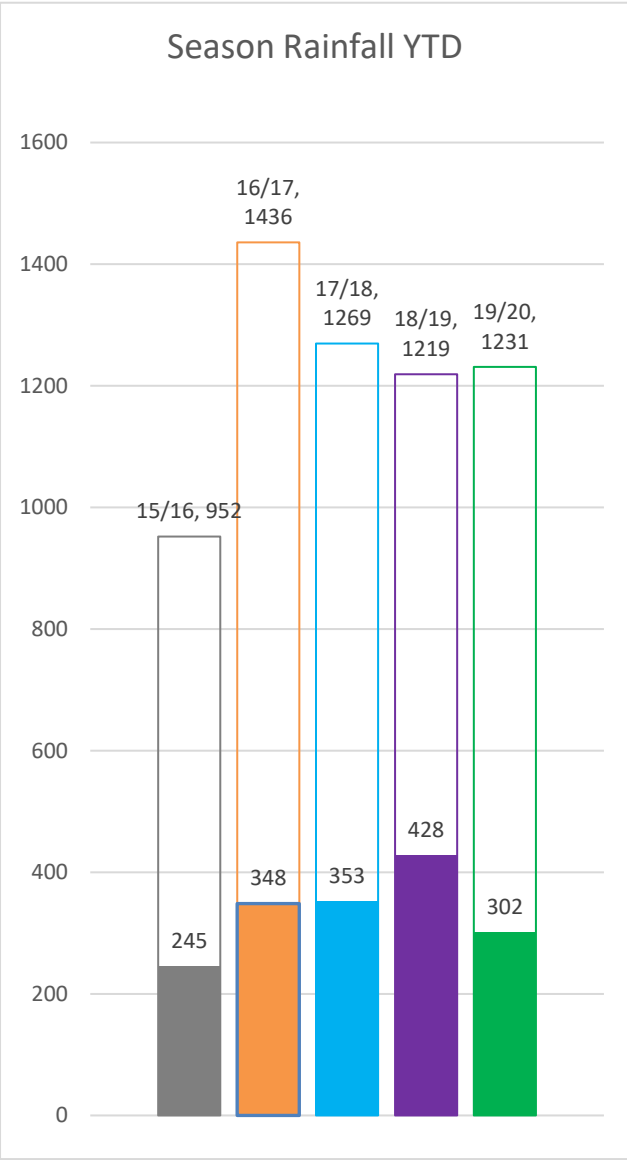
NOTES

CLIMATE



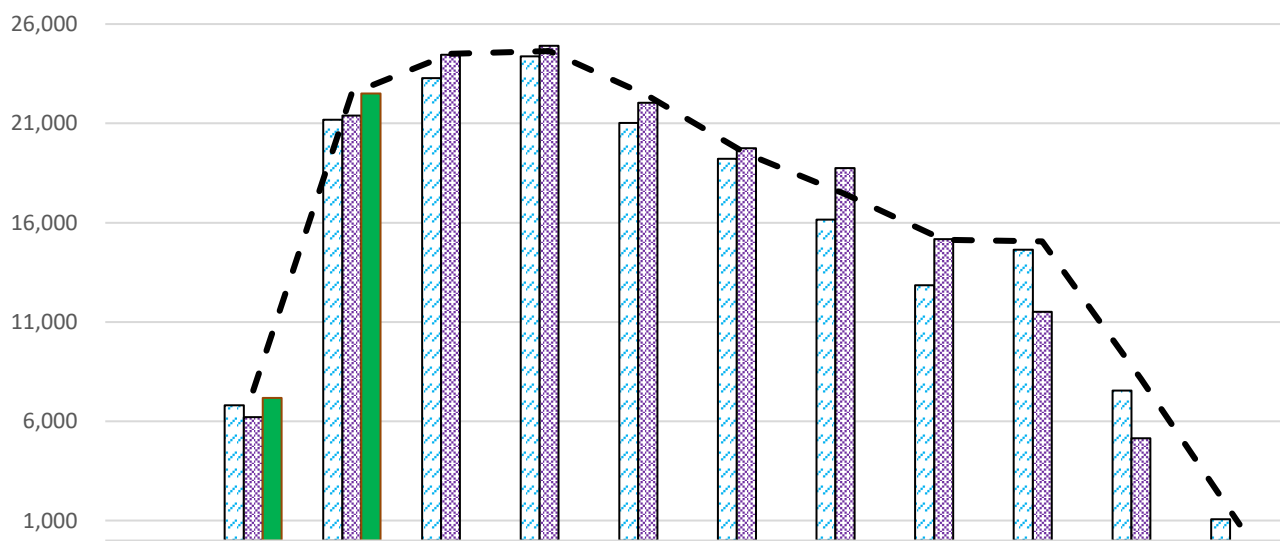
NOTES

RAINFALL



PRODUCTION

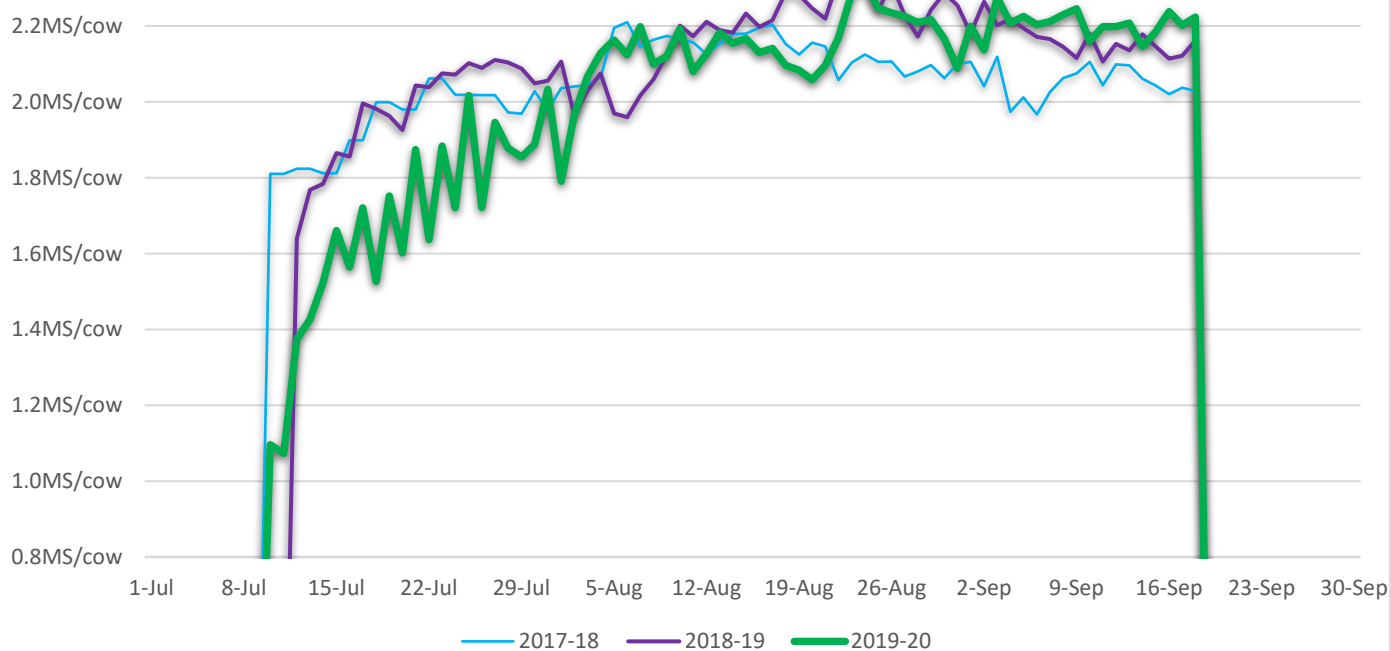
Production: Monthly Performance



	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
17/18 production		6,807	21,183	23,287	24,376	21,030	19,213	16,158	12,856	14,641	7,549	1,070
18/19 Production		6,216	21,391	24,460	24,906	22,042	19,744	18,745	15,165	11,509	5,148	
19/20 Production		7,184	22,507									
Budgeted 19/20		7,545	22,500	24,500	24,641	22,400	19,478	17,452	15,135	15,065	8,131	807

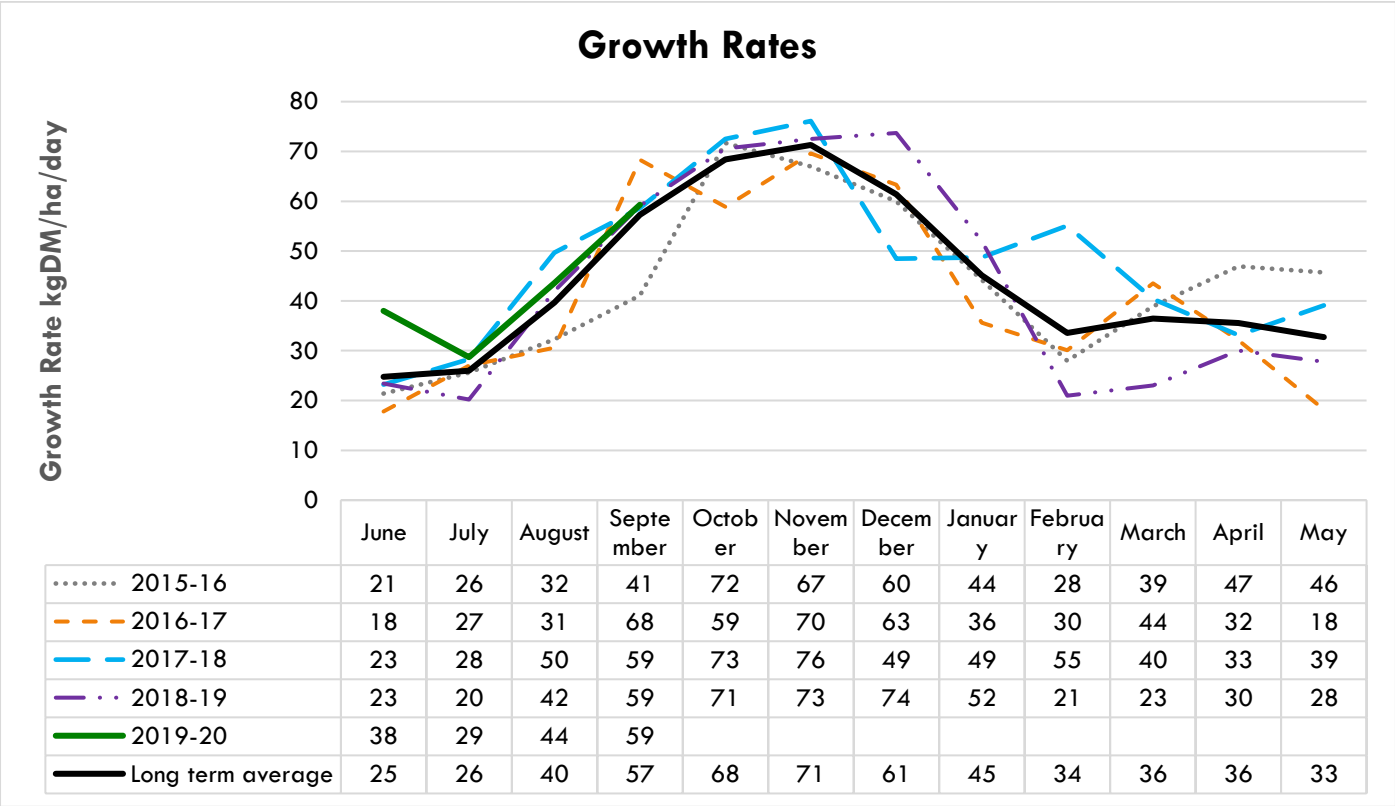
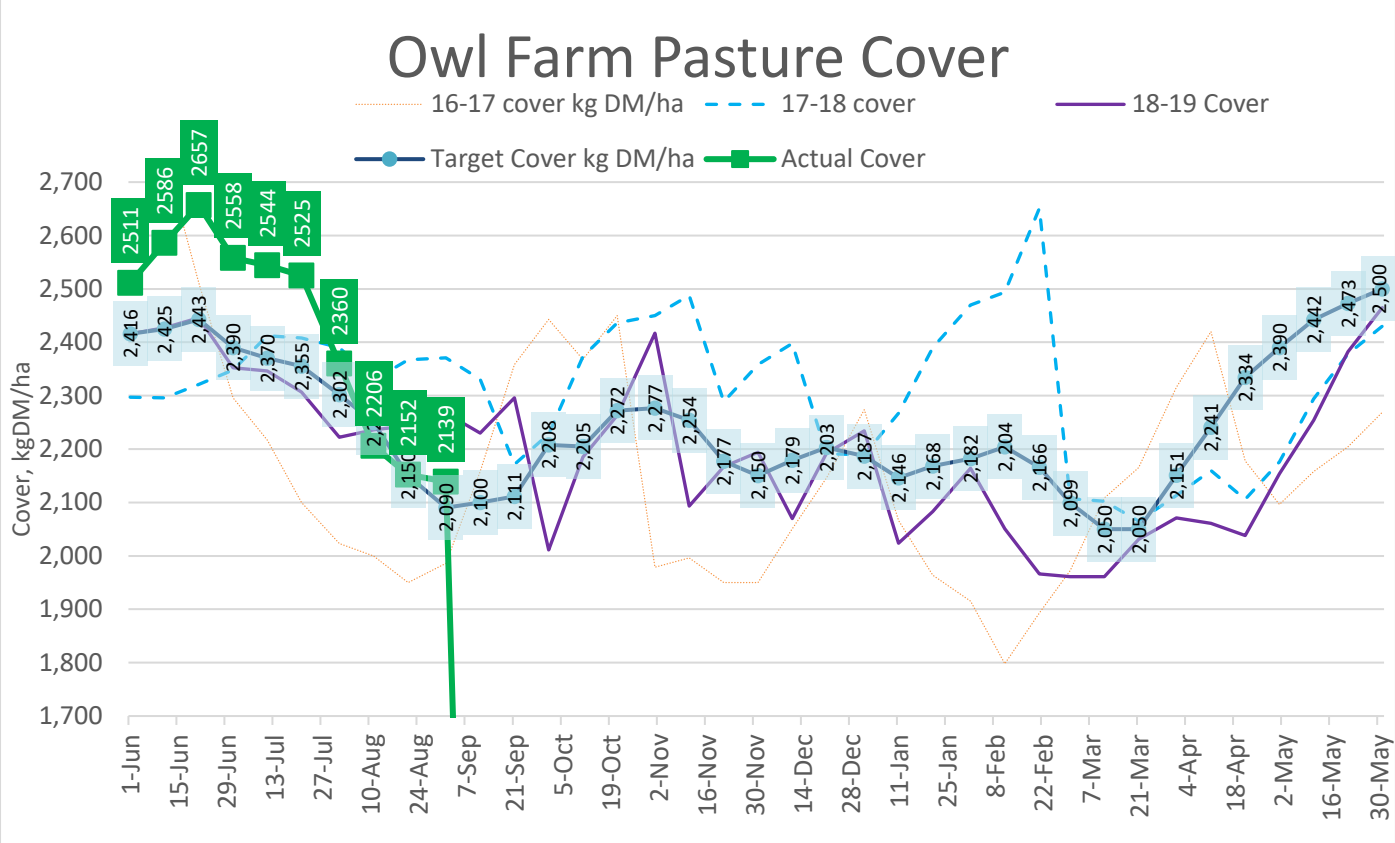
17/18 production 18/19 Production 19/20 Production Budgeted 19/20

Milksolids/cow/day



NOTES

PASTURE COVER AND GROWTH RATES



REPRODUCTION PREVIEW

Fertility Focus 2018: Seasonal

St Peters School Farm
Tom Buckley

Report date: 18/09/19

PTPT: HPTT

Herd Code: 2/1884

No of cows included: 408

These cows calved between: 21/05/18 and 26/11/18

Mating start & end date:
(based on AB or pregnancy test data)
28/09/18 - 23/12/18

Next planned start of calving: 07/07/19

Duration of mating: 87 days

Duration of AB period: 85 days



Version 3.01



1 Overall herd reproductive performance

6-week in-calf rate

Percentage of cows pregnant in the first 6 weeks of mating

Your herd 74%

Aim above 78%



Not-in-calf rate

Percentage of cows not pregnant after 87 days of mating

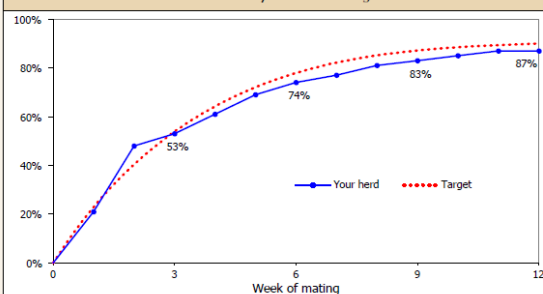
Your herd 13% (11-13%)

Aim for 9%



% of herd in calf

Cumulative by week of mating



2 Drivers of the 6-week in-calf rate

3-week submission rate

% of cows that were inseminated in the first 3 weeks of mating

Your herd 94%

Aim above 90%



Non-return rate

% of inseminations that were not followed by a return to heat

Your herd

Aim above

Conception rate

% of inseminations that resulted in a confirmed pregnancy

Your herd 48%

Aim above 60%



3 Key indicators to areas for improvement

Calving pattern of first calvers

Well managed heifers get in calf quickly and calve early.

Calved by

Week 3

Week 6

Your herd 86%

98%

Aim above 80%

95%



Calving pattern of whole herd

Did late calvers reduce in-calf rates?

Calved by

Week 3

Week 6

Week 9

Your herd 71%

88%

97%

Aim above 67%

88%

98%



Pre-mating heats

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

Your herd 74%

Aim above 85%



3-week submission rate of first calvers

Well managed heifers cycle early

Your herd 99%

Aim above 90%



Heat detection

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

Your herd 96%

Aim above 95%



Non-cycling cows

Treated non-cyclers get in calf earlier.

Treated

By MSD

Wks 1-3

Wks 4-6

Your herd 14%

0%

0%

Performance after week 6

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

Not-in-calf rate

Your herd 13%

Expected 13%

OK

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

(C)Copyright DairyNZ Ltd May 2018. All rights reserved. (Incorporates components of (C)Copyright Dairy Australia 2005. All rights reserved.)
No warranty of accuracy or reliability of the information provided by InCalf Fertility Focus is given, and no responsibility for loss arising in any way from or in connection with its use is accepted by DairyNZ Ltd, or the provider of this report. Users should obtain professional advice for their specific circumstances.

Behind Your Detailed Fertility Focus Report

Report period: Cows calved between 21/05/18 and 26/11/18.

This was the most recent period with sufficient herd records that enabled an analysis to be completed.

Calving system: Seasonal

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

Level of analysis: Detailed.

Your good record keeping means a detailed analysis was possible for your herd.

Report date: 18/09/19

PTPT: HPTT

Herd Code: 2/1884

Calvings up to this date requested for analysis: 30/03/19

No of cows included: 408

These cows calved between: 21/05/18 and 26/11/18

Mating start & end date: 28/09/18 - 23/12/18
(based on AB or pregnancy test data)



Version 3.01



Part A) Herd records cross check

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

2018/19	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
No. of calvings		9	306	57	36								408
No. of AB matings					94	454	138	53					739
No. of preg tests								405		93			498
No. of non-aged/late aged positive preg tests										8			8
No. of cows culled or died						3		2	5		54	1	65

Part B) Notes on the calculations

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

1 Overall herd reproductive performance

6-week in-calf rate

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

Records available for not-in-calf rate

Recorded pregnant	355
Recorded empty	43
Doubtful/recheck*	7
Culled without pregnancy test	3
No record of cull or pregnancy test	0
Cows analysed	408

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

2 Drivers of the 6-week in-calf rate

3-week submission rate

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

Non-return rate

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

Conception rate

The conception rate was calculated for 709 AB inseminations on and between 28.09.18 and 21.12.18.

3 Key indicators to areas for improvement

Calving pattern of first calvers

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

Calving pattern of whole herd

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

Pre-mating heats

406 cows had calving dates in the required range and were not culled before day 21 of mating and 302 of these had a pre-mating heat recorded.

3-week submission rate of first calvers

83 first calvers had calving dates in the required range and were not culled before day 21 of mating and 99% of these were submitted during the first 21 days of mating.

Heat detection

202 cows at least 4 years old at calving had calved at least 8 weeks before mating start date and were not culled before day 21 of mating and 96% of these were submitted during the first 21 days of mating.

Non-cycling cows

406 cows had calving dates in the required range and were not culled before day 21 of mating and 55 of these were identified as being treated for non-cycling.

Performance after week 6

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

Induced cows

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

(C)Copyright DairyNZ Ltd May 2018. All rights reserved.

(Incorporates components of (C)Copyright Dairy Australia 2005. All rights reserved.)

No warranty of accuracy or reliability of the information provided by InCalf Fertility Focus is given, and no responsibility for loss arising in any way from or in connection with its use is accepted by DairyNZ Ltd or the provider of this report.

Users should obtain professional advice for their specific circumstances.

OWL FARM

Return Interval Analysis



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

Your herd **96%**

Aim above **95%**

☆☆☆☆☆

EXAMPLE FARM

Return Interval Analysis



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

Your herd **76%**

Aim above **95%**

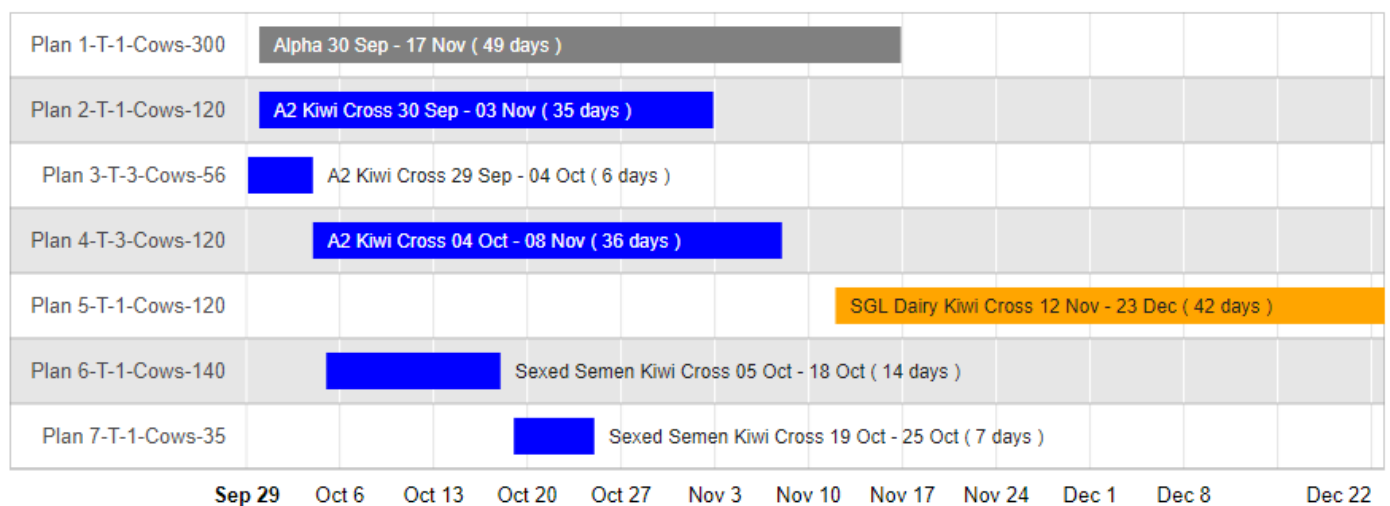
☆

MATING OVERVIEW

Owl Farm are using sexed semen and Wagyu as part of our mating programme this year; the objectives are:

- Maintaining or improving farm reproduction performance, currently 74% 6-week InCalf rate, 13% not InCalf rate. 84 day mating duration with a 70 day calving period.
- Target heifer replacement rate, maintained at the same number (25%) but achieved in fewer days (4 weeks vs 6 weeks).
- Accelerated genetic gain through taking replacements from the top 75% of the herd.
- Value added through the Wagyu programme, 150 saleable animals resulting in a 50% reduction in bobby calves.
- A shift to A2/A2 semen.

MATING TIMELINE



All AB statistics

All AB herds

The number of herds doing All AB has been increasing over time. Across the 2014 to 2017 seasons, there were 290 - 417 farmers doing All AB* (this includes herds with either a Detailed or an Intermediate Fertility Focus report).

Number of herds	2014	2015	2016	2017
First year of All AB		245	169	130
All AB that season	290	393	400	417

Performance of All AB herds compared with AB + Bull herds

Combining the four seasons worth of data together, and just looking at herds with a Detailed Fertility Focus report (FFR), we looked at the performance of All AB herds compared to the AB + Bull herds.

Average	AB + Bull herds	All AB herds	Difference
6-week in-calf rate	66.2%	67.7%	+1.4%
Not-in-calf rate	16.6%	17.1%	+0.6%
<i>Total mating length (days)</i>	<i>76.0</i>	<i>76.4</i>	<i>+0.3</i>
Herd 3-week submission rate	79.0%	83.6%	+4.6%
First calver 3-week submission rate	80.6%	85.3%	+4.7%
Conception rate	52.6%	51.3%	-1.3%
<i>AB Mating Length (days)</i>	<i>45.3</i>	<i>76.4</i>	<i>+31.1</i>
<i>Number of herds</i>	<i>13996</i>	<i>878</i>	

The results indicate that the All AB herds tend to have similar/slightly better reproductive performance than the AB + Bull herds.

- The All AB herds have better 6-week in-calf rates and submission rates, but lower conception rates and higher not-in-calf rates.
- The lower conception rate can be explained by the fact that the All AB herds do AB, on average, for 31 days longer than the AB + Bull herds, meaning it's not surprising the All AB herd's conception rate is slightly lower.
 - National statistics show that as mating length increases, conception rate decreases
 - On average, every round of mating (3 weeks) the conception rate drops by 5%:
 - Conception rate for the 1st 3 weeks of AB = 54%
 - Conception rate for the 2nd 3 weeks of AB = 49%

All AB herds repro performance before going All AB

For these stats, the year before a herd switched to doing all AB has been labelled as the "Pre All AB year".

Combining the 2014 to 2017 season's data, and using only Detailed FFR's, we compared the reproductive performance of the All AB herds the year before they switched to All AB with the performance of herds that were always AB + Bull.

Average	Pre All AB year	Always All + Bull	Difference
Herd size (cows)	634	527	+107
6-week in-calf rate	67.8%	66.1%	+1.7%
Not-in-calf rate	15.8%	16.3%	-0.6%
<i>Total mating length (days)</i>	<i>76.1</i>	<i>76.5</i>	<i>-0.44</i>
<i>AB Mating Length (days)</i>	<i>58.5</i>	<i>44.2</i>	<i>+14.3</i>
<i>Number of herds</i>	<i>289</i>	<i>9524</i>	

In the year before switching to All AB, these herds had a higher 6-week in-calf rate, a lower not-in-calf rate (for a similar mating length), had more cows, and did AB for longer than AB + Bull herds. This

indicates that the herds that have gone All AB in the past have been herds that are higher performing, larger, and already doing around 8 weeks of AB.

Results when herds switch to All AB

The year that herds switch to All AB, there is a slight drop in reproductive performance, but in the second and third years of being All AB, performance lifts to be similar or better than it was before the switch.

	6-week in-calf rate (compared to Pre All AB year)	Not-in-calf rate (compared to Pre All AB year)
First year doing All AB	-1.0%	+1.4%
Second year doing All AB	+0.7%	+0.7%
Third year doing All AB	+1.9%	+0.5%

We do seem to be getting better at switching to All AB though. When we look at the results for the herds that go All AB on an individual season basis (e.g. just looking at herds that went All AB in 2015 vs those who went All AB in 2016), we see that any detrimental impact of switching to All AB has been reducing.

	6-week in-calf rate (compared to Pre All AB year)	Not-in-calf rate (compared to Pre All AB year)
First year doing All AB - 2015	-0.2%	+2.3%
First year doing All AB - 2016	+0.5%	0.0%
First year doing All AB - 2017	+0.8%	+0.1%

Do farmers who go All AB stay with it?

Looking at herds that had an FFR (Detailed or Intermediate) for every year (2014 to 2017 seasons), we calculated the percentage of herds that went All AB and stayed with it.

The results indicate that a bit over half of the herds that go All AB continue to do all AB for a second season, but only around a third go on to do a third or fourth All AB season. Interestingly, 11% of the All AB herds return to being All AB again after switching to AB + Bull for a season or two. E.g. a herd is All AB in 2014 and 2015, they switch back to AB + Bull in 2016, then return to All AB in the 2017 season.

All AB	Percentage of herds still doing All AB
For 2 consecutive years	57%
For 3 consecutive years	36%
For 4 consecutive years	33%
Returned to All AB	11%

What happens to the results of the herds that don't stick with All AB?

Using only herds with a Detailed FFR, we looked at what happened to reproductive performance when herds changed back to AB + Bulls after doing a season or two of All AB.

The year that herds changed back to AB + Bull, their 6-week in-calf rate and not-in-calf rates returned to, or were better than, the performance they had before going All AB. Those that changed back tended to have a greater drop in performance in their first year of All AB than those who stayed with it.

<i>Compared to Pre All AB year</i>	Stayed with All AB	Switched back to AB + Bull
6-week in-calf rate	-1.1%	-1.4%
Not-in-calf rate	+1.3%	+2.4%

Together, these two results highlight the fact that going All AB is not for everyone.

*Herds included in the analysis for this article were spring calving seasonal herds that had a Detailed InCalf Fertility Focus Report. The seasons analysed were the 2014 to 2017 spring matings. The reproduction measures analysed were generated from data and information entered by herd owners and collected by LIC and DairyNZ. Accuracy of the results reported here is subject to the accuracy of the data entered.

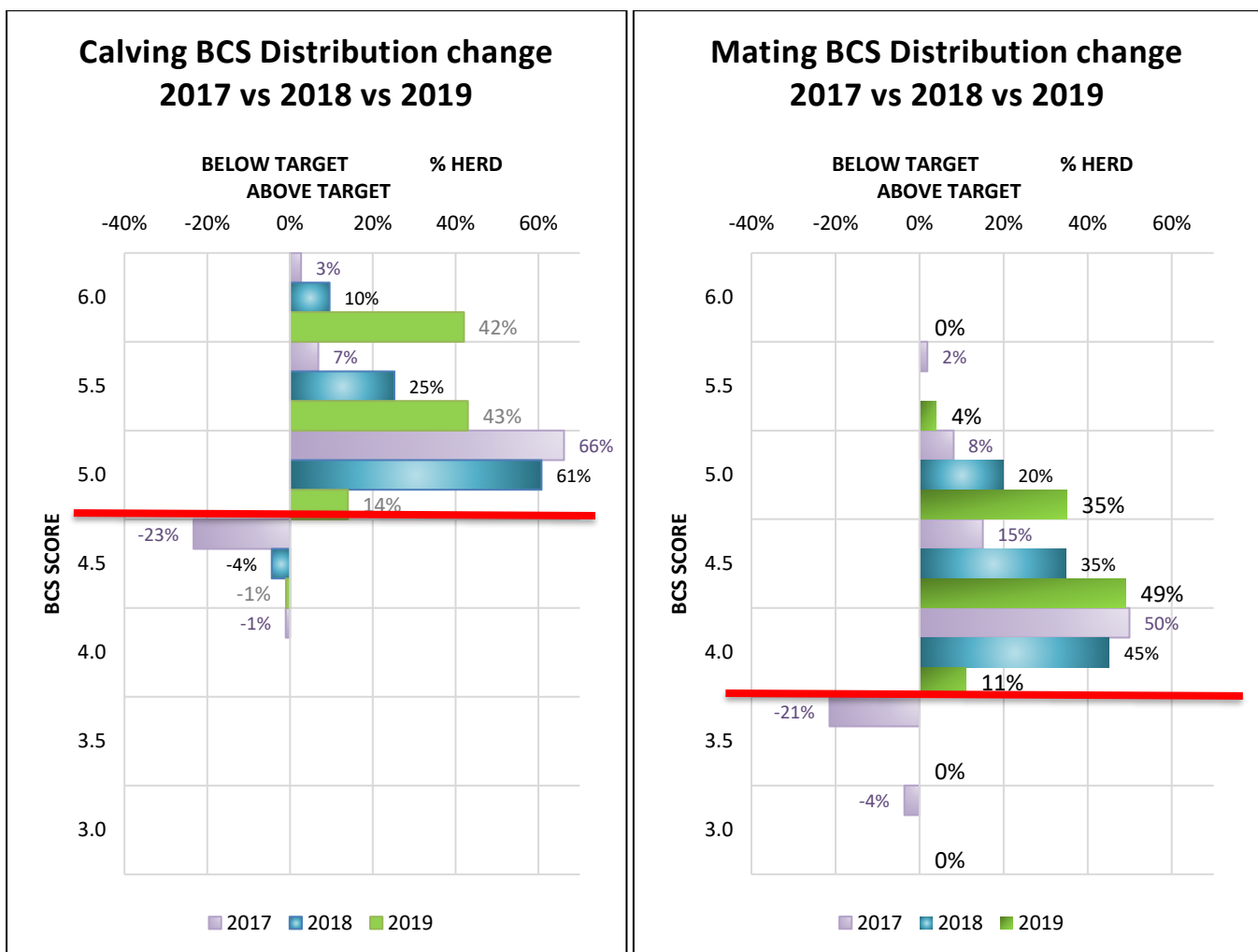
BODY CONDITION SCORE

The focus has been on BCS at calving and mating for reproduction improvements. We have acceptable submission rates, good heat detection, some challenges with conception rate later in mating but overall low conception rate upfront. Research tells us cow BCS at calving is one risk area, and at herd level it looked like, that was causing issues a few seasons back.

We had herd level BCS distribution data from in-paddock scoring, but no data on which cows were at, below or over target. For the last 12 months we have carried out individual scoring monthly so we could track the information. From that tracking we've changed how and when we act on individual cows. That has led to a dramatic improvement in herd BCS at calving and mating between the last two years.

The individual BCS data for this season showed that only 1% of cows were below calving BSC on the 1st July 2019, with an average BCS of 5.6 for mixed-age cows and 6 for heifers.

BCS information from 19th September has shown an average BCS of 4.7, and only one cow is below BCS 4.



BODY CONDITION SCORING ALL COWS

THE PROCESS

Peter Briston from Cambridge Vets is accredited in Body Condition Scoring and so far this season has come out twice, on the 1st July and the 19th September.

An important point to note is that cows are recorded at the last definitive score they passed; e.g. 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, so 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

With such a good winter and early spring growth, cows were at the highest BCS recorded on the farm to date, a whopping average of 5.6. They were able to hold a 5 BCS through August and are currently 4.7 less than two weeks out from Planned Start of Mating (PSM).

We have ensured that average BCS loss has been less than 1 (0.9 BCS) from calving to mating.

Our average BCS has had a much healthier start to the season this year, which has resulted in only one cow being below BCS 4 heading into mating, compared to 21% of the herd in 2017 and none in 2018.

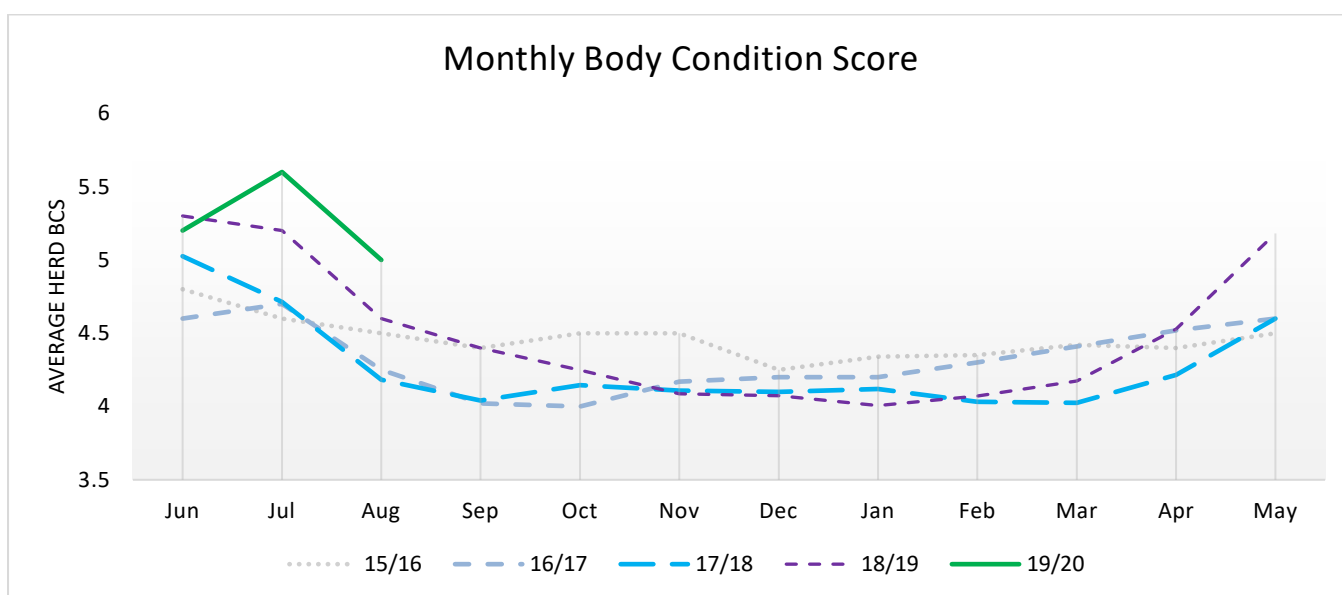
We’re now looking at this as a capital investment in BCS that we intend to maintain year-on-year, a little like feed inventory. It’s part of how our system works now and needs to be carefully maintained each year.

INDIVIDUAL BCS – BENEFITS

Most importantly it gave us the list of individual cows in the herd most at risk – which removes any farmer bias when having to choose 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 (reproductive or low production – 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.

Average Herd BCS last 4 years from paddock assessment.



FERTILISER PLAN

Current season use: 20T Sustain 36N

Planned use: 24T of Sustain Ammo 30N

The reason for the change in fertiliser plan was because we had less rain than expected during the winter and we soil tested in August, which showed current soil levels to be optimum or just below optimum and thus only a small amount of sulphur was needed.

Soil testing is carried out annually in March. This has been shifted to spring this year. This is partially due to timing with crop testing and to ensure we are testing when the conditions are more stable and soil moisture levels are constant year on year. We found autumn to be too variable in the conditions and thus not allowing us to maintain an effective soil-testing regime.

Part of our soil testing was to capture Total N tests. This test measures the ability of the soil to respond to nitrogen applied due to level of nitrogen present in the soil naturally. A low N percentage equates to a better response from nitrogen applied. Conversely a high N percentage equates to the opposite. This level is influenced by soil type and the history of the soil in relation to use.

As shown in the table, the farm has different Total N levels and thus a nitrogen plan ensures we are making the best use of the nitrogen applied.

We also look at the supply and demand of the pasture and animals, taking into account the feed brought onto farm. This allows us to gauge whether we need to apply nitrogen, cut silage or feed supplement. We use this to align our nitrogen applications and along with the Total N tests, to get the most pasture production at the right times throughout the year.

Sample Name:	Sodium MAF units	Total Nitrogen* %
1	5	0.70
2	5	0.56
3	7	0.61
4	5	0.72
5	6	0.76
6	8	0.53
7	8	0.60

REC NAME	October Super	BLOCK	Superfen	AREA	94.05 ha
Start Date:	01/10/2019	Merchant:	Farm Source Cambridge	Carrier:	To Be Advised
Fert Rec ID:	8104781354	Store:	Te Awamutu Service Centre	Spreader:	To Be Advised

Product	Rate (Kg/ha)	% of Mix	Total Kg
Superfen	298.000	100	28026.9
Total Rate (Kg/ha):		298.000	Total Tonnes: 28.0

(Kg nutrient/ha)

Nutrient	Value
N	0
P	27
K	0
S	31
Mg	0
Ca	64
Na	0

Nominated Trade (\$/Tonne)	Total Cost of Fertiliser	Cartage & Spreading (\$/Tonne)	Cost per Hectare (\$/ha)	Total Cost
\$ 339.00	\$ 9501.12	\$ 0.00	\$ 101.02	\$ 9501.12

Notes:

REC NAME	October Serp - Effluent	BLOCK	Serpentine Super	AREA	51.81 ha
Start Date:	01/10/2019	Merchant:	Farm Source Cambridge	Carrier:	To Be Advised
Fert Rec ID:	8104781355	Store:	Te Awamutu Service Centre	Spreader:	To Be Advised

Product	Rate (Kg/ha)	% of Mix	Total Kg
Serpentine Super	213.000	100	11035.5
Total Rate (Kg/ha):		213.000	Total Tonnes: 11.0

(Kg nutrient/ha)

Nutrient	Value
N	0
P	14
K	0
S	18
Mg	11
Ca	35
Na	0

Nominated Trade (\$/Tonne)	Total Cost of Fertiliser	Cartage & Spreading (\$/Tonne)	Cost per Hectare (\$/ha)	Total Cost
\$ 329.00	\$ 3630.69	\$ 0.00	\$ 70.08	\$ 3630.69

Notes:

REC NAME	November S25K	BLOCK	Orders	AREA	80.0 ha
Start Date:	01/11/2019	Merchant:	Farm Source Cambridge	Carrier:	To Be Advised
Fert Rec ID:	8104781356	Store:	Te Awamutu Service Centre	Spreader:	To Be Advised
Product	Rate (Kg/ha)	% of Mix	Total Kg	(Kg nutrient/ha)	
Sustain 25K	100.000	100	8000.0		
Total Rate (Kg/ha):		100.000	Total Tonnes: 8.0		
Nominated Trade (\$/Tonne)	Total Cost of Fertiliser	Cartage & Spreading (\$/Tonne)	Cost per Hectare (\$/ha)	Total Cost	
\$ 727.00	\$ 5816.00	\$ 0.00	\$ 72.70	\$ 5816.00	
Notes:					

REC NAME	April PhasedN	BLOCK	Whole Property	AREA	156.76 ha
Start Date:	01/04/2020	Merchant:	Farm Source Cambridge	Carrier:	To Be Advised
Fert Rec ID:	8104781361	Store:	Te Awamutu Service Centre	Spreader:	To Be Advised
Product	Rate (Kg/ha)	% of Mix	Total Kg	(Kg nutrient/ha)	
PhaSeaN	103.000	100	16146.3		
Total Rate (Kg/ha):		103.000	Total Tonnes: 16.1		
Nominated Trade (\$/Tonne)	Total Cost of Fertiliser	Cartage & Spreading (\$/Tonne)	Cost per Hectare (\$/ha)	Total Cost	
\$ 629.00	\$ 10156.01	\$ 0.00	\$ 64.79	\$ 10156.01	
Notes:					

Some of the changes Ballance has been involved in at Owl Farm are outlined below.

	Before	After
Soil monitoring	The farm was divided into three blocks, with soil testing in each block conducted annually.	The three blocks were re-divided into seven. Four yearly Total N testing and herbage testing (see below) were added to the soil monitoring programme.
Herbage testing	Herbage testing was not typically used.	Herbage on each block is tested every spring, and also as required on poorly performing paddocks, providing extra information for the fertiliser plan. Herbage testing revealed that selenium was low in herbage (and in young stock).
Blocking	Paddocks were grouped into three blocks (effluent and two other).	Paddocks are grouped into seven blocks, to align soil monitoring and farm management.
pH	Soil pH ranged from 5.4 to 5.9.	Capital rates of lime were applied to some blocks, and now all of the blocks have a pH of 5.7 or above.
Olsen P	Phosphorus was evenly applied.	Phosphorus was applied on a block by block basis, with 75% of maintenance phosphorus applied on blocks above an Olsen P of 40.
Pasture renewal	Cropping and renewal was based on observation and convenience, and done by either cultivation and drilling, or direct drilling without fertiliser down the drill spout.	All paddocks get Pasture Condition Scoring (1-5) every year, to guide cropping and renewal. Paddocks are being changed to no-till cropping with DAP drilled close to the seed.
Nitrogen fertiliser	Nitrogen was usually applied over the whole farm at a set time.	The farm begins the year with a fertiliser plan, which is refined based on seasonal growth, supplementary feed produced and pasture covers. Products containing nitrogen and sulphur are applied in early spring and late autumn, and nitrogen and potassium in late spring. Some blocks are prioritised for nitrogen application, based on Total N soil test results entered into My Pasture Planner
Physical soil testing	No physical testing.	Visual Soil Assessment is used on poor performing paddocks. After a Ballance soil expert found a historic treading pan, half of four paddocks were sub-soiled to break the pan, as a useful trial.
Forage cropping	Used to either cultivate to establish crops, or direct drill and then broadcast fertiliser	Now all crops are (no till) direct drilled with fertiliser “down the spout” so it is alongside the seed. Usually this is done with DAP but can depend on the crop.

ACKNOWLEDGEMENTS

Ian Tarbotton (Steer Co); Mark Ter-Morshuizen (Founding NS); Ian Power (Overseer); Murray Lane (Science Extension/Cropping); Amy Short (Marketing); Sam McDougall (Current NS)

NEW GRASS PLAN 2019-20

So far 30ha of permanent pastures have had Ecotain Plantain added in this spring, to allow strong management post-emergence of broadleaf weeds in the autumn and winter e.g. hedge mustard. Broadcasting Ecotain at 4kg/ha into the swards will still see great establishment of the Plantain plants in the sward.

All permanent pastures will be sown with Quartz and Legacy white clover cultivars.

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

2019 Autumn re-grassing	Area (ha)	Notes	Cultivars Rate/ha
Undersow permanent ryegrass	15.0	Stitch open permanent pastures, don't need crop	Platform permanent ryegrass 12kg/ha
Undersow Italian ryegrass	10.0	Stitch for short term yield before crop 2021	Lush Italian ryegrass 18kg/ha
Permanent pasture after crop	8.0	3ha into permanent ryegrass dominant pasture	Rely + clover 21kg/ha 4kg/ha
Permanent pasture after crop	3.0	8ha into cocksfoot dominant pasture	Platform + Savvy cocksfoot + clover 12kg/ha 8kg/ha 4kg/ha
Autumn sown annuals	6.0	Drive winter yield ahead of crop in Annual ryegrass	Winter Star II 30kg/ha
Total area re-grassed	26.0	18% of Farm	
Total area drilled	32.0	22% of farm (including annuals ahead of crop)	



EcotainTM
ENVIRONMENTAL PLANTAIN



PEOPLE PRIORITY - STUDY OF TIME AND TASKS ON FARM

Owl Farm is committed to sustainable work hours targeting an average of 45 hours/week/person over the year.

As at 16th September the team has averaged 50hrs/week/person for the season to date. The monthly break down of this is as follows.

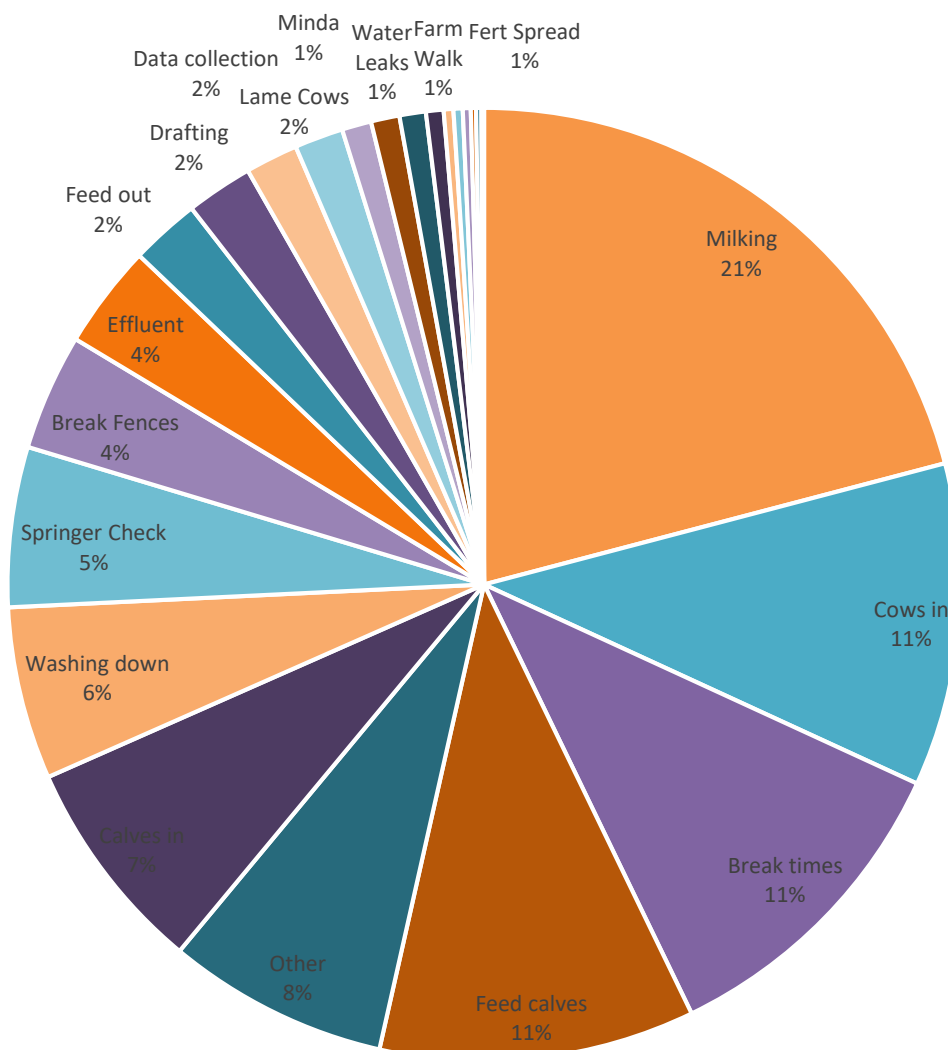
Month	Hours worked/week/person
June	29 hours
July	57.5 hours
August	64 hours

This season as well as monitoring work hours and regular weekends off (every second weekend even during calving) we have recorded what we are spending our time on while we are at work. The graph below shows the proportion of time spent on each of the activities. For example, 21% of all work time was spent by the team on milking tasks.

We hope to compare this data year on year and against industry information.

How does this compare to your farm and the proportion of time spent on some of the bigger tasks?

Combined hours spent on tasks July/August 2019





Next Farm Focus Day
Wednesday 27 November, 2019

Weekly Monitor Walk
Tuesdays, 11am



Like us on Facebook
facebook.com/OwlFarmNZ



Follow us on Twitter
twitter.com/OwlFarmNZ