2. ANIMAL WELL-BEING

Contents

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	PRIMARY KPI	OWL FARM TARGET	2020/21	2019/20	2018/19	2017/18	2016/17
1	Healthy cows	15% or less involuntary culls	19%	20%	-	-	-
2	Purposeful lives for calves	100% reared past 4 days on farm	60%	39%	34%		
3	Replacements reared	21% - at weaning	22.9%	23.4%	23.1%		
4	Healthy calves	100% adequate total protein	80%	-	-	-	-

Summary Points – Primary KPIs:

- Lame cases reduced from 34% in 2019/20 to 13% in 2020/21
- Disappointing 6 week in-calf result of 65%, down from 74% in 2019/20
- Number of cows treated for mastitis increased from 14% to 19%
- Mortality rate in cows of 1%
- Bobby calf numbers reduced by 31% through use of Wagyu and sexed semen breeding plan
- Heifer grazing changed to better achieve liveweight targets during dry summers
- Calves kept at home on chicory and exceeded growth rate targets
- Total protein blood tests showed early calf care is providing adequate immunity levels in calves
- Mortality rate in calves is 1%

Summary Points – Secondary KPIs:

- Welfare needs met through annual Animal Well-being Plan with vet, including recommended best practice and pain relief
- Monitoring of Thermal Heat Index (THI) indicators and use of 3 n 2 milking, shed sprinklers and shade to reduce heat stress
- Individual Body Condition Score (BCS) monitored throughout the year for dry-off and feeding decisions. Cows under BCS 4 have a management plan including health assessment, reduced milking frequency and preferential feeding
- Tail audit carried out before and after calving showed no abnormal change in status due to handling of cows or farm infrastructure

Healthy cows

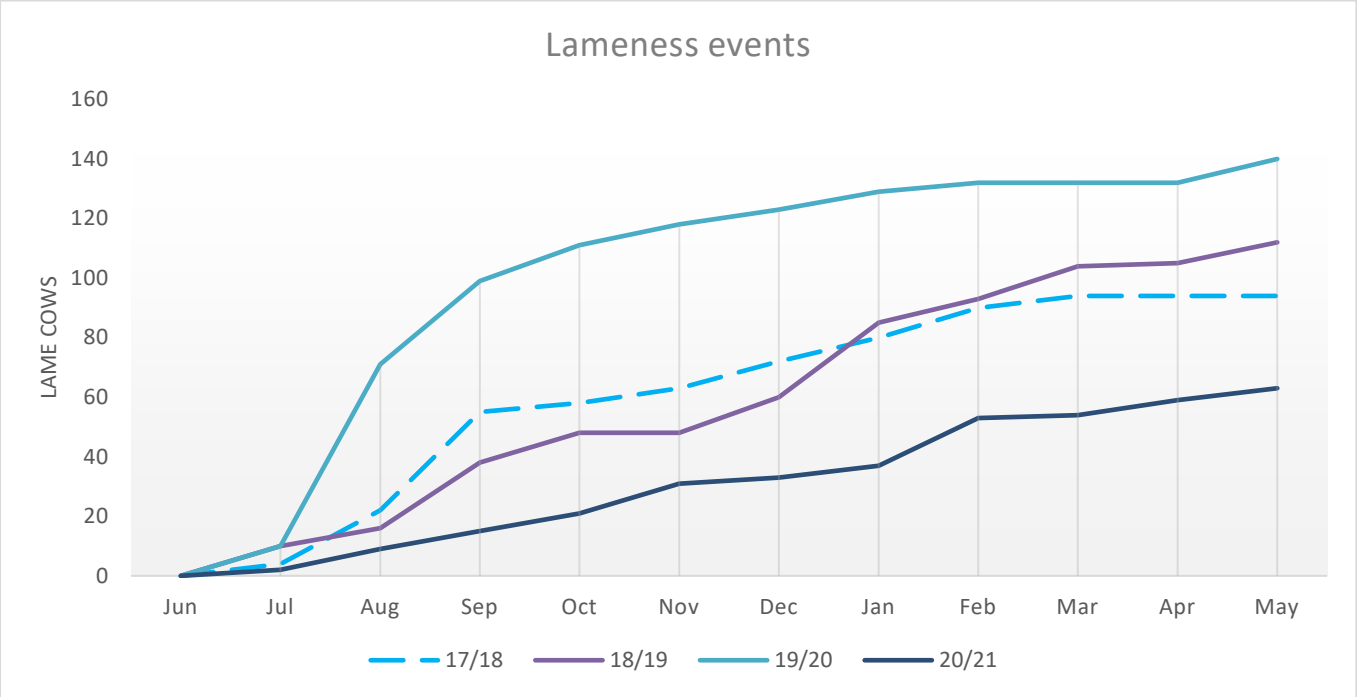
Reducing the number of cows that exit the herd due to being empty or for other health reasons allows us to continue to select on production traits with a reducing number of replacements entering the herd. This year we had 19% non-selective culls (including deaths) due to cows being empty (14%), repeat mastitis, high SCC, lameness, etc.

Graphs below show the number of events when a cow was drafted out for treatment. This does not necessarily indicate that they were treated with antibiotics.

Lameness

After significant cases of lameness in 2019/20 we enlisted the help of our Healthy Hoof provider at Cambridge Vets to diagnose what was causing lameness and recommend changes to make. Changes included the use of backing gate, lameness recording and a race upgrade programme of work. As a result of this, lameness was reduced from 34% to 13%. We are targeting <12%.

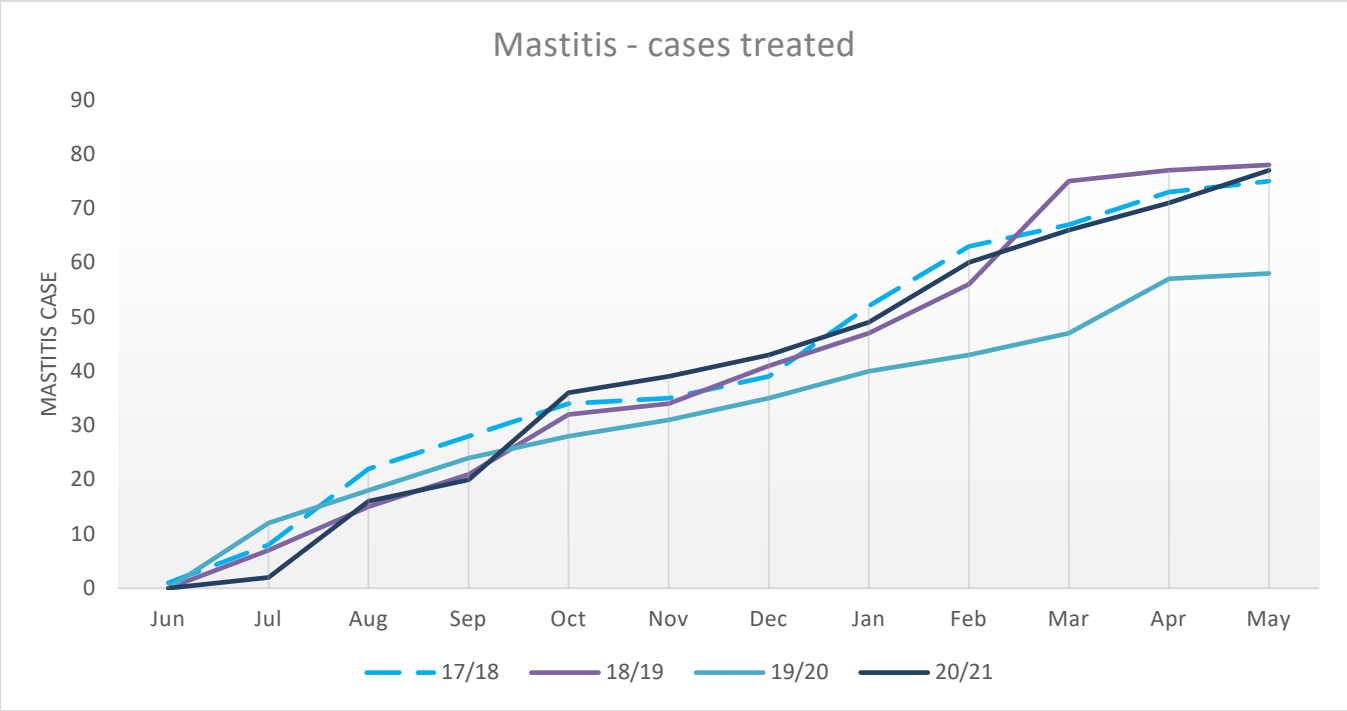
Graphic 2.1: Cumulative number of cows drafted out and treated for lameness:



Mastitis

Early season challenges with the teat sprayer caused an increase in mastitis cases during spring that we struggled to reduce for the remainder of the season. 78 cows were treated for mastitis throughout the year (19% of the herd, compared with 14% last season). Although SCC was lower this year at 144,000, the number of cows treated for mastitis was higher. Thresholds have been lowered for cows receiving Dry cow Therapy (DCT) to 120,000SCC, one or more infections during the year and any cow over 7 years old. We are targeting <10% mastitis.

Graphic 2.2: Cumulative number of cows drafted out and treated for mastitis:



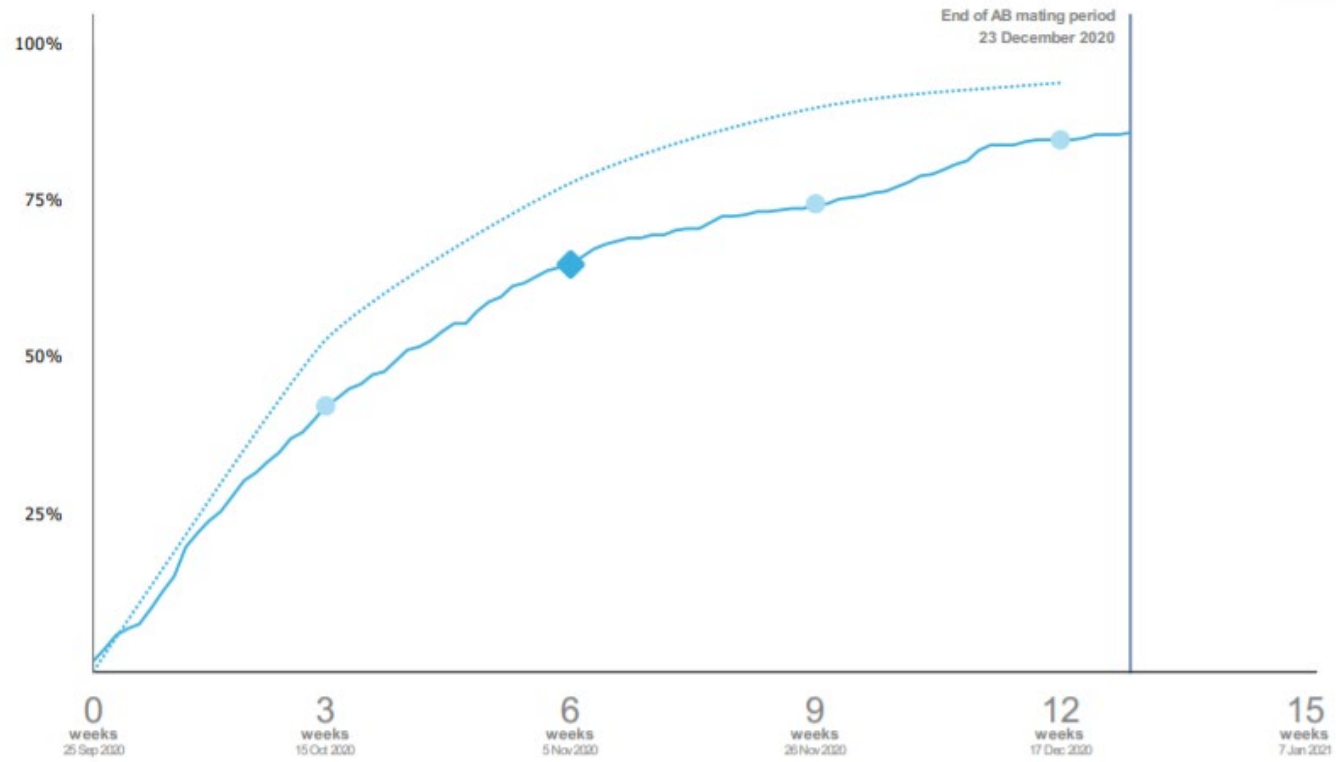
Reproduction

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

Analysis of the data with LIC and Cambridge Vets showed:

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

Graphic 2.3: In-calf rate comparison between years:



In-calf rate

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

Graphic 2.4: Fertility Focus Report for 2020 calving and mating:

Fertility Focus 2020: Seasonal

Owl Farm
Tom Buckley

Report date:	02/03/21
PTPT:	HPTT
Herd Code:	2/1884
No of cows included:	406
These cows calved between:	18/05/20 and 23/11/20
Mating start & end date: (based on AB or pregnancy test data)	25/09/20 - 23/12/20
Next planned start of calving:	04/07/21
Duration of mating:	90 days
Duration of AB period:	90 days

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DairyNZ

LIC

1 Overall herd reproductive performance

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

Your herd	65% (65-67%)
Aim above	78%

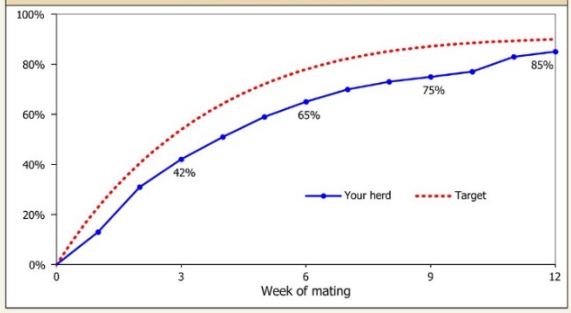
☆

Not-in-calf rate
Percentage of cows not pregnant after 90 days of mating

Your herd	14% (12-14%)
Aim for	9%

☆

% of herd in calf
Cumulative by week of mating



2 Drivers of the 6-week in-calf rate

3-week submission rate
% of cows that were inseminated in the first 3 weeks of mating

Your herd	88%
Aim above	90%

☆☆☆☆☆

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

Your herd	
Aim above	

Conception rate
% of inseminations that resulted in a confirmed pregnancy

Your herd	47%
Aim above	60%

☆

3 Key indicators to areas for improvement

Calving pattern of first calvers
Well managed heifers get in calf quickly and calve early.

Calved by	Week 3	Week 6
Your herd	80%	95%
Aim above	80%	95%
	☆☆☆☆☆	☆☆☆☆☆

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

Calved by	Week 3	Week 6	Week 9
Your herd	55%	81%	96%
Aim above	67%	88%	98%
	☆	☆	☆☆☆

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

Your herd	73%
Aim above	85%

☆☆☆

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

Your herd	95%
Aim above	90%

☆☆☆☆☆

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

Your herd	91%
Aim above	95%

☆☆☆

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

Treated	By MSD	Wks 1-3	Wks 4-6
Your herd	6%	0%	0%

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

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

Not-in-calf rate

Your herd	14%
Expected	16%

OK

Behind Your Detailed Fertility Focus Report

Report period: Cows calved between 18/05/20 and 23/11/20.
This was the most recent period with sufficient herd records that enabled an analysis to be completed.

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

Level of analysis: Detailed.
Your good record keeping means a detailed analysis was possible for your herd.

Report date:	02/03/21
PTPT:	HPTT
Herd Code:	2/1884
Calvings up to this date requested for analysis:	01/03/21
No of cows included:	406
These cows calved between:	18/05/20 and 23/11/20
Mating start & end date: (based on AB or pregnancy test data)	25/09/20 - 23/12/20

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DairyNZ

LIC

Part A) Herd records cross check

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

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

Part B) Notes on the calculations

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

1 Overall herd reproductive performance

6-week in-calf rate

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

Records available for not-in-calf rate

Recorded pregnant	345
Recorded empty	48
Doubtful/recheck*	0
Culled without pregnancy test	11
No record of cull or pregnancy test	2
Cows analysed	406

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

2 Drivers of the 6-week in-calf rate

3-week submission rate

404 cows had calving dates in the required range and were not culled before day 21 of mating and 88% of these were submitted during the first 21 days of mating.

Non-return rate

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

Conception rate

The conception rate was calculated for 711 AB inseminations on and between 25.09.20 and 23.12.20.

3 Key indicators to areas for improvement

Calving pattern of first calvers

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

Calving pattern of whole herd

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

3-week submission rate of first calvers

76 first calvers had calving dates in the required range and were not culled before day 21 of mating and 95% of these were submitted during the first 21 days of mating.

Heat detection

160 cows at least 4 years old at calving had calved at least 8 weeks before mating start date and were not culled before day 21 of mating and 91% of these were submitted during the first 21 days of mating.

Pre-mating heats

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

Non-cycling cows

404 cows had calving dates in the required range and were not culled before day 21 of mating and 26 of these were identified as being treated for non-cycling.

Performance after week 6

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

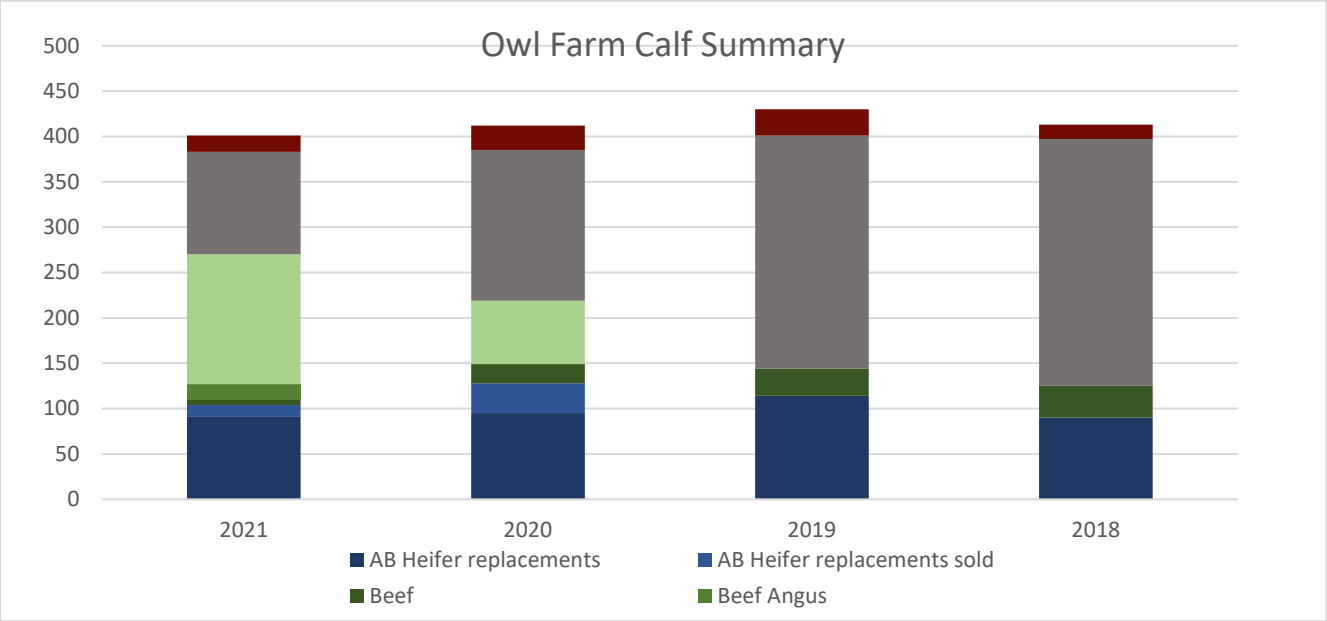
Induced cows

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

Calf fate

Owl Farm uses all AB for mating; in 2019 we started using sexed semen on top BW cows and Wagyu semen to provide bull and heifer calves for a First Light contract. This was extended in the 2020 mating to include heifer synchrony and sexed semen to further reduce the number of bobby calves. Preliminary results show that the 2020 breeding strategy has resulted in 71% purposeful lives for calves.

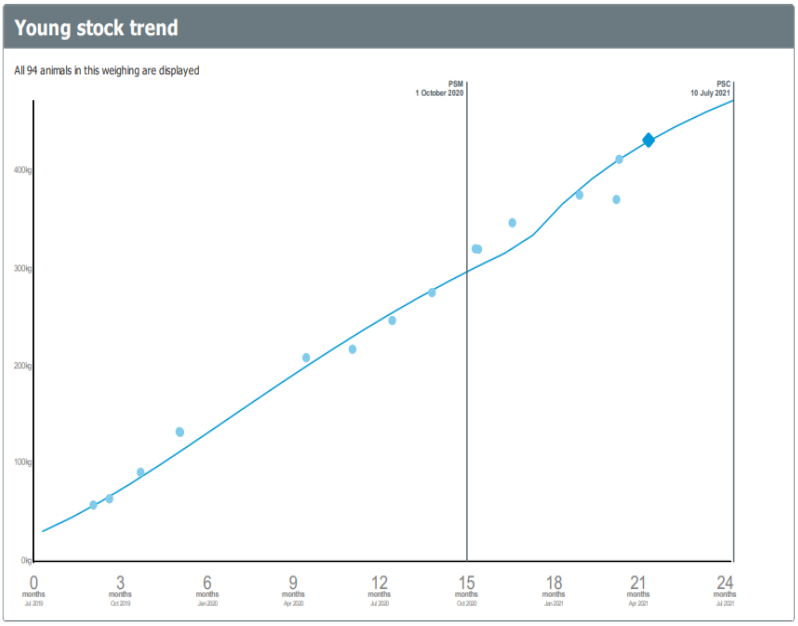
Graphic 2.5: Calf fate summary comparison between years



Youngstock growth rates

Rising 2-year-olds were out at grazing and, with the help of some preferential feeding using purchased supplements, our grazier managed to get the average back on target for liveweight pre-calving.

Graphic 2.6: 2019 born heifers

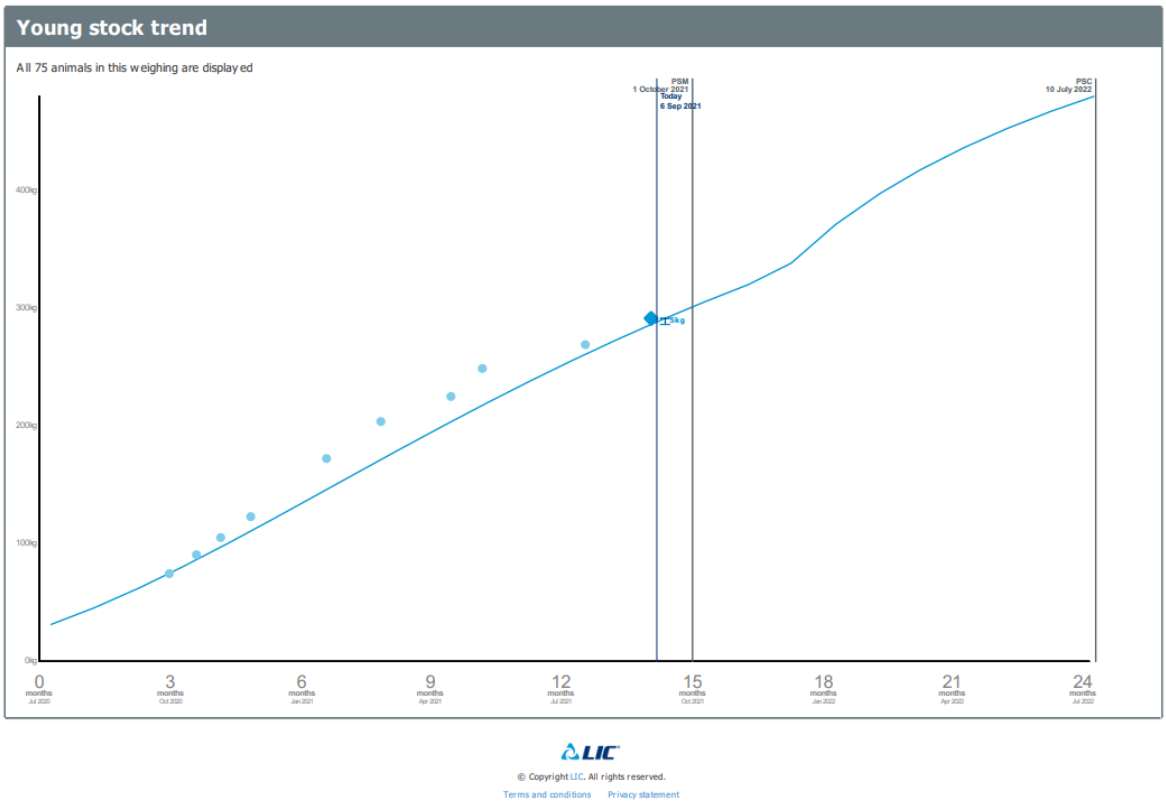


Every calf receives 2L gold colostrum tube feed on arrival at the shed at the morning and 2L again in the afternoon.

Total blood protein tests were taken on random calves to check for adequate intake of good colostrum. 4 out 5 samples came back showing adequate levels to ensure calves get the best start in life. Continued testing was recommended for the 2021 calving along with sampling for Brix levels in colostrum to explore the potential for any change in procedures to be made.

Calves grazed 4.7 ha of chicory on an attached runoff area (managed by our team) from 27th November to 20th April with the addition of PK and grass silage (30 t DM). Calves then grazed new grasses on the dairy platform before heading out to grazing. Excellent liveweight gains were achieved to set them up for success with the grazier.

Graphic 2.7: 2020 born heifers



Shade and shelter

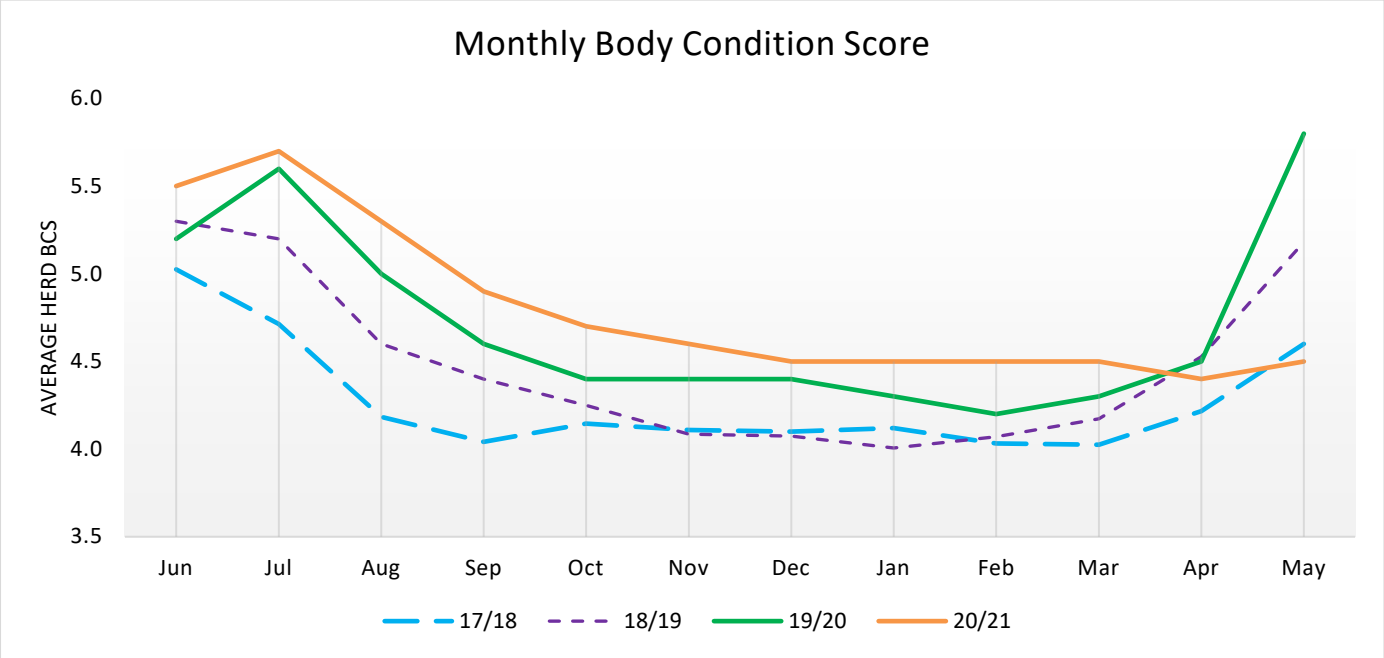
We use temperature and humidity data, along with respiration rates, to identify conditions that cause discomfort and heat stress during the summer. With approximately 105 days that exceeded cows' comfort and risked milk production, we have strategies in place to reduce the stress of producing milk under these conditions. Just before Christmas we switched to a regime of three milkings in two days, once any high SCC cull cows were removed from the herd. Sprinklers were then used at the 11am and 6pm milkings to cool the cows, and paddocks with shade offered after the 5am milking to help during these hot humid days. Crop paddocks were all chosen with shade options close by to provide shade after eating. Extra troughs were installed in the races to offer access to water during peak periods of the day.

Spore counts and serum zinc levels are measured to manage the impacts of spore counts on facial eczema. Zinc is administered via the Dosatron, with an allowance for zinc boluses in the financial budget ($11k) if needed to protect cows. Diet is planned to reduce the intake of spores.

Body Condition Score (BCS)

All cows receive a BCS from a certified assessor at PSC, PSM and then in November, February, March and May. Cows calved at 5.7 average (higher than target) this season and mobilised a lot of body condition in early lactation and during mating, with high milk production and subsequent BCS loss through to the end of October. Using the DairyNZ BCS dry off calculator, cows are dried off based on their calving date and BCS to achieve targets at calving. Cows returned to BCS 5 by mid-June 2021.

Graphic 2.8: BCS data



Tail audit

Our vet carried out our first tail audit in July 2020 during BCS assessments. Seven cows (1.7%) had tail abnormalities and only one had a change of status at the August assessment. We carry out this assessment prior to calving and prior to mating each year alongside our BCS process. The results give us assurance that our handling and infrastructure is providing the best outcome for cow welfare.