Lincoln University Dairy Farm - Farm Walk notes

Tuesday 26 January 2016

LUDF – focus for 2015/16 Season: Nil-Infrastructure, low input, low N-loss, maximise profit. Farm system comprises 3.5 cows/ha (peak milked), Target 150kgN/ha, 300kgDM/cow imported supplement, plus winter most cows off farm. FWE of less than $1.08 million and Target production of 500kgMS/cow (>100% liveweight in milk production).

Critical issues for the short term

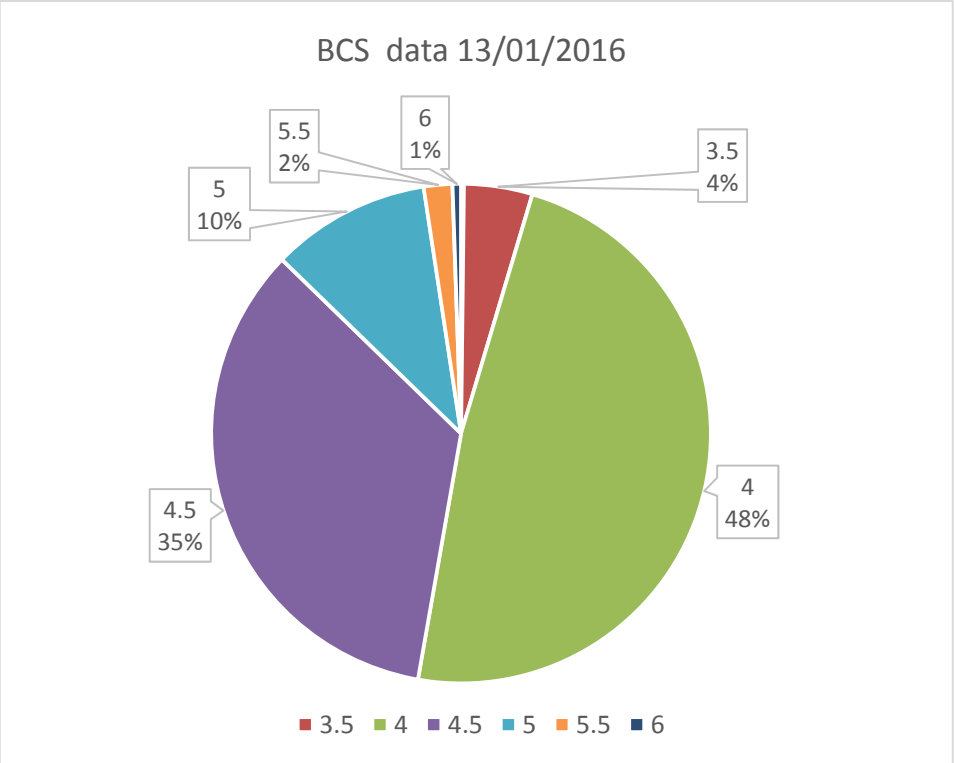
1. **Monitor average pasture cover on the milking platform**
2. **Monitor pasture quality coming through the current grazing to ensure good quality and quantity of feed, with the aim to minimise the rate of drop off peak milksolids production.**
3. **Make appropriate and timely decisions with regard to mowing or areas out for silage**
4. **Supplement cows with Magnesium**
5. **AI and bull mating has now finished**

Key Numbers - week ending Tuesday 26th January 2016

Ave Past Cover	2779 kgDM/ha	Past Growth Rate	126kgDM/ha/day
Round length	26 days (for 160 ha)	Ave Supplement used	0 kgDM/cow/day
No Cows on farm	549 (all cows are milking into the vat)	Ave Soil Temp (week)	18 degrees
Ave Milk Production	1.91 kgMS/cow	SCC	194,000

Herd Management

1. There are currently 549 milkers on farm all milking twice a day.
2. This week we had 5 new lame cows but no new cases of mastitis this week.
3. Cows were BCS on Thursday 14th January 2016. The information is presented below. Average BCS is 4.3, a drop of 0.2 from 4.5 when last being scored on 9th December 2015.



4. The farm is continuing to run two herds. The make-up of these herds changed yesterday (18/01/16) according to the BCS information presented above. The aim of redrafting of the herds is to target preferential feeding of lighter and early calving cows, encouraging as much weight gain as possible and minimising the need to dry off light condition score cows early in the autumn.
5. The small herd has 144 early calving cows with a BCS below 4.5. The large herd has the remainder of the cows (later calving and heavier BCS (405 cows). The small herd continues to be preferentially fed, generally getting the first part of each paddock and not being pushed as much to achieve target grazing residuals
6. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
7. All heifer replacements (total 155) are grazing on the East Block. They received their second / booster 7 in 1 vaccination on Monday 11th January.
8. All calves are on pasture only.
9. Cow liveweight is holding steady (in spite of the reduction in condition score).

Mating

10. 6 weeks AI Mating started on 25th October 2015 and bulls were removed on 5th January (10 weeks mating)
    a. Our 3-week Submission rate was 89%
    b. Our 6 week submission rate was 97.7%
    c. Our 6 week InCalf is 68% as per the most up-to-date version of MINDA
    These results are based on pregnancy scanning 11th January 2016. Later calving cows will be pregnancy tested in early February. More analysis on this will be provided as it becomes available to the management team.
11. **Mating of 15 Month Old heifers**
    a. The 15 month old heifers were run with bulls from 15th October till mid-December and will be pregnancy tested on 1st February.

Growing Conditions

12. The average 9 am soil temperature for the week was 18 degrees (1.9 degrees higher than last week and 0.5 degrees hotter than this same time last season).

13. There has been 8.4 mm of rainfall over the last week.
14. Both North and South pivots have been off for the week, and will continue to be off as long as there is rain in the forecast.

Figure 1: Soil temperature history for the last 2 weeks

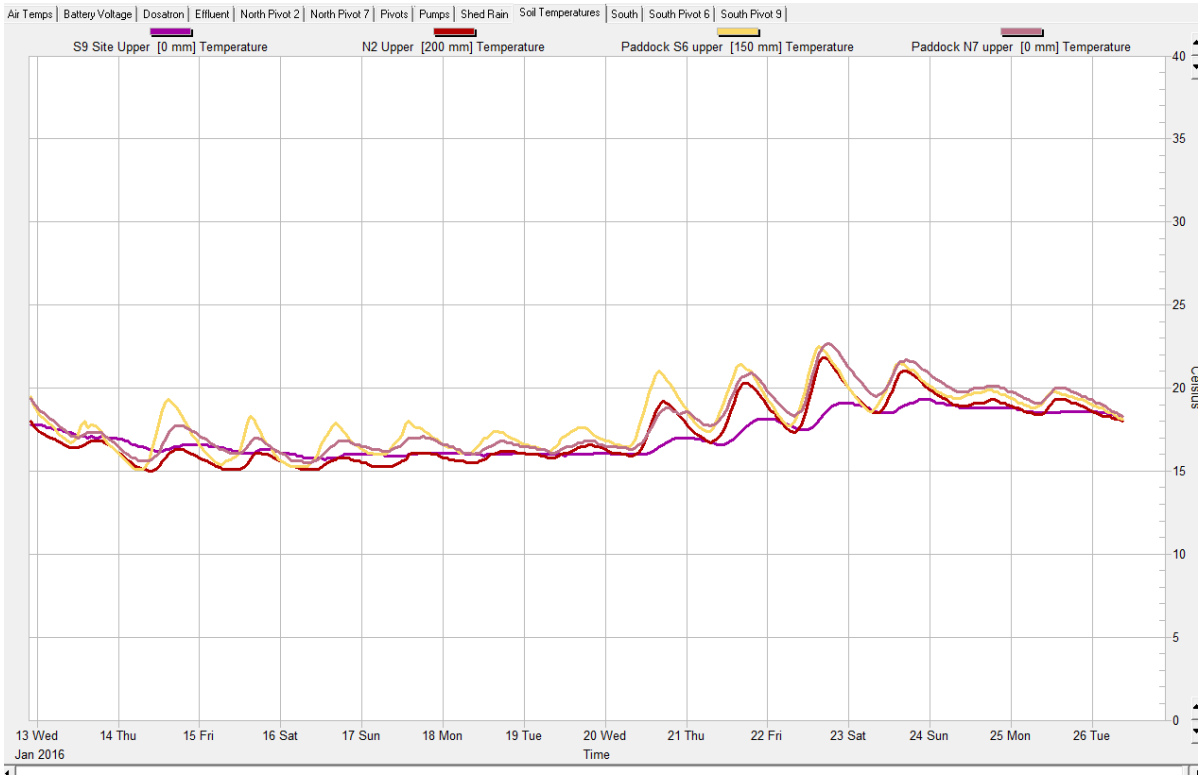
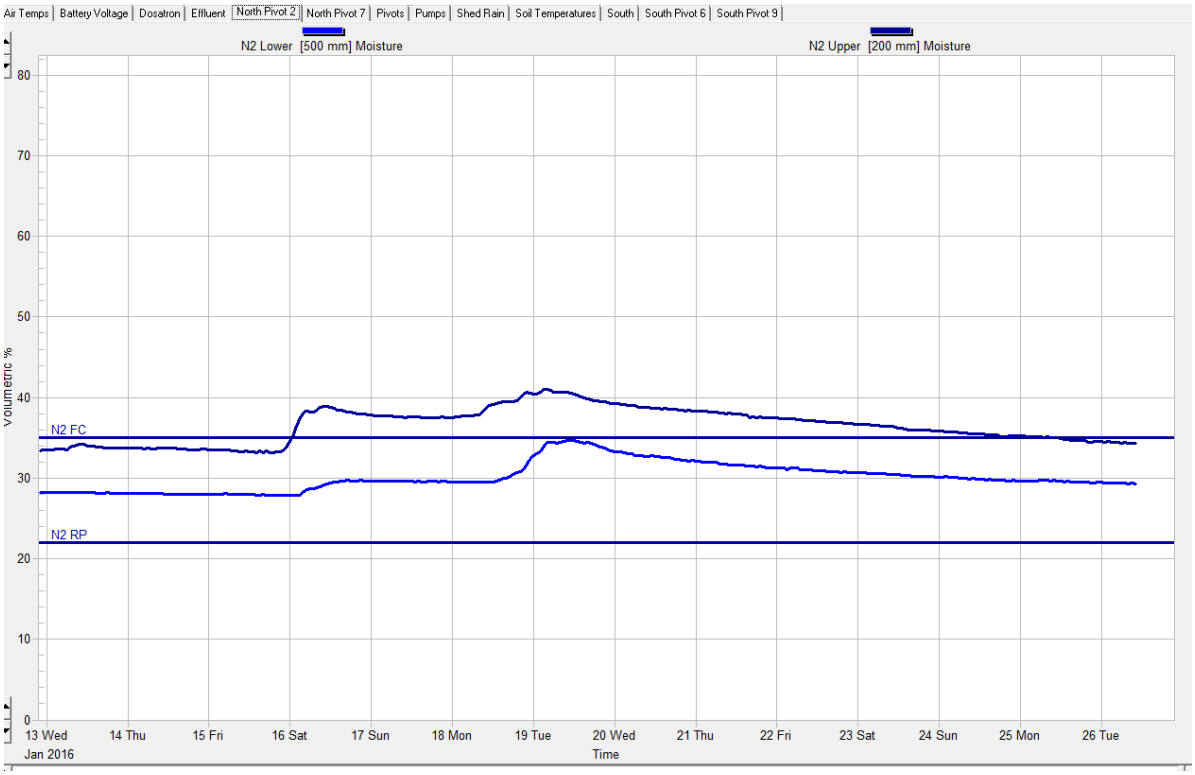


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



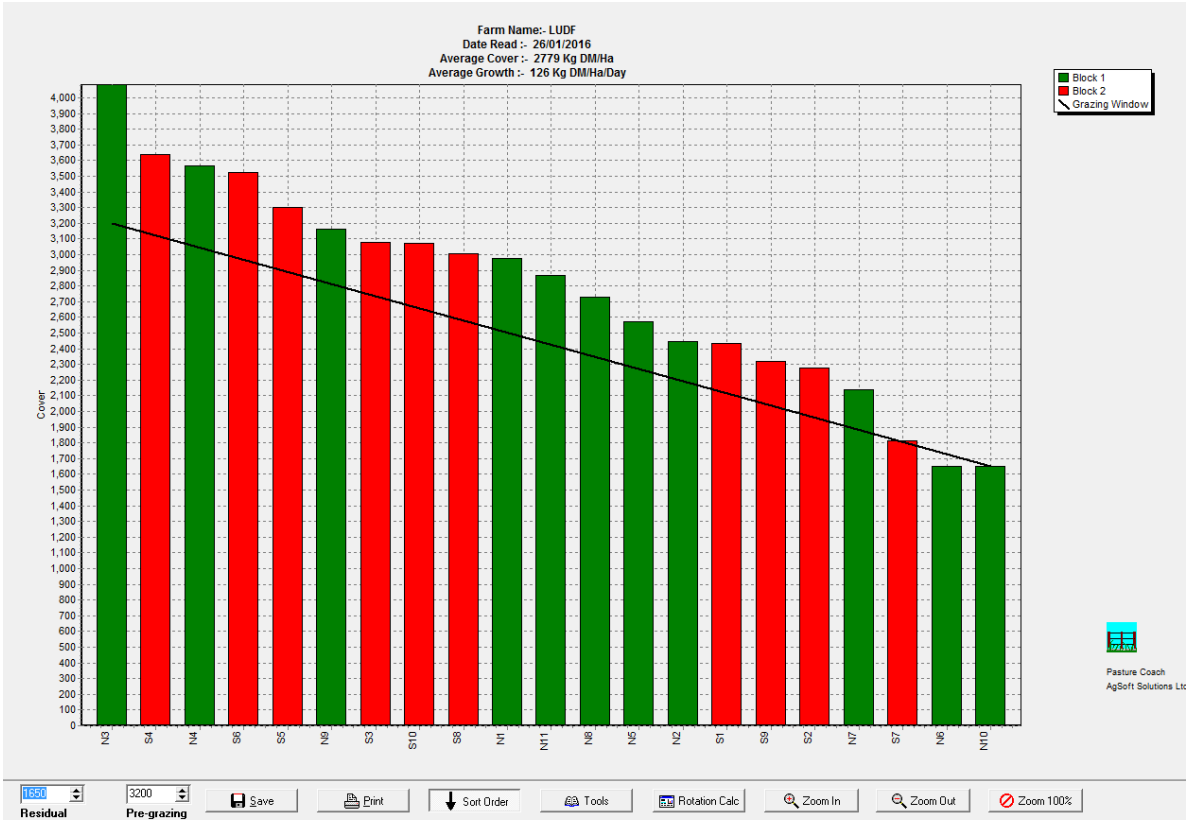
Nitrogen

15. 40 hectares received nitrogen as urea at 25kgN/ha over the last week. Season to date we have used 125kgN/ha.

Pasture and Feed Management

1. 7.5 ha (paddock N6) have been harvested for silage (9.4 tonnes DM total).
2. Our round length this week was: 26 day round for the week (6.56 ha grazed per day) over 160 effective ha of the milking platform, or 22 days round if we take the 7.5 ha harvested for silage off the total area.
3. 5 Ha were topped behind the herd to control a weed challenge on paddock S7 (new grass planted in November).
4. Pasture quality and plating:
   a. Pasture quality remains relatively good even with the high temperatures of the last 4 days. Some seedhead is still apparent potentially due to heat stress of the grass – however this is getting less and less noticeable.
   b. The pregraze mowing and ex baleage areas will be grazed in this coming week. These paddocks are looking leafy and of good quality.
   c. The rising plate meter could be over-estimating some readings due to a drop in the Dry Matter % of the grass. Our tests show a drop from 14.8% to 12% in the last week. This could be due to the latest growth spur observed in the grass as a result of the exceptional growing conditions of the last couple of weeks. Also, the plantain seedhead remain very present which contributes to higher readings.
   d. Fertility patches are evident in a small number of paddocks, contributing to some variation in pasture cover when plating, as well as quality variation across some paddocks.

Figure 3: This week's feed wedge



5. Based on the full farm area 160 ha in the grazing round, the target pregrazing cover and demand line in the feed wedge has been calculated using a target rotation length of 23 days, an intake of 20kgDM/cow/day, 549 cows (for the week ahead) and a post grazing residual of 1650 kgDM/ha. Target pregrazing cover is therefore:

   (Stocking rate x ***Intake from pasture*** x Rotation) + Optimum residual = Pre-grazing Cover.

   (549 cows / 160ha x 20 kgDM/cow/day x 23 days) + **1650** = 3228 kgDM/ha.
6. This expected per cow dry matter intake demand is based on calculations that allow for milk production, a slight increase in liveweight, maintenance requirements and distance walked. (See DairyNZ facts and figures for these details). At LUDF this calculates to approx. 240MJME at present. Feed testing before Christmas suggests pasture was approximately 11.9 MJME, therefore 240MJME requires approximately 20 kgDM / cow / day. This is equivalent to a demand of 69kgDM/ha/day across 160 ha)
7. Average pasture cover has increased from last weeks cover of 2596 kgDM/ha to 2779kgDM/ha even after a paddock was dropped for silage.
8. This increase in average pasture cover is to be expected given the growth rates we are seeing in the past 3 weeks (90 kgDM/ha/day 2 weeks ago, 85 kgDM/ha/day the previous week and 126 kgDM/ha this last week). Our feed demand is around 69 kgDM/ha/day, which explains the steady accumulation of pasture even after harvesting silage.
9. The feed wedge above now shows a surplus of 54,107 kgDM (54 tDM) compared to a surplus of 30.148kgDM the previous week.
10. Comparing growth rates (kgDM/ha/day) to this same month last season see the growth rates below where this years January growth has not declined as it did last year:

Week of January	Week 1	Week 2	Week 3	Week 4
Growth rate season 14-15 (kgDM/ha/day)	70	82	79	68
Growth rate season 15-16 (kgDM/ha/day)	86	90	90	126

Feeding Management for the coming week:

11. Given all of the above, the key decisions for the week ahead:
    a. There is, most likely, room to harvest 2 paddocks for silage. Paddock N3 (first in the wedge) will be harvested for silage as soon as the weather conditions allow. Should this paddock be harvested for silage today, it would take care of 14 tDM of the 54 tDM surplus.
    b. Cows will be grazing paddocks N4 and S4 next. It is expected that they will not take extra time to graze them as N4 is a new pasture paddock (almost 12 months old) and S4 is coming back into the round after being harvested for silage 3 weeks ago. Both paddocks are showing exceptionally good quality grass at this stage.
    c. We will continue to observe closely pasture growth rate and cow behaviour through the week as temperatures are forecasted between 17 and 20 degrees (as well as 3 days of rain), which may cause our daily pasture growth rate to hover around the 100 kgDM/ha/day. Should this happen, we will drop a second paddock for silage as soon as weather allows. Paddocks S3 (weed challenge), S5 (old diploid grass) or S6 (weed challenge and high cover) have been targeted as potential candidates.
    d. We will continue to target a 23 day round (6.95 Ha/day or 48.7 ha /week) across 160 ha. This will be continuously re-evaluated based on the pasture growing conditions.
    e. Continue to monitor rate of drop off peak milksolids production as an important indicator of both cow feed intake as well as pasture quality.

LUDF Weekly report	29-Dec-15	5-Jan-16	12-Jan-16	19-Jan-16	26-Jan-16
Farm grazing ha (available to milkers)	160	160	160	160	160
Dry Cows on farm / East blk /Jackies/other	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0
Culls (Includes culls put down & empties)	0	0	1	0	0
Culls total to date	13	13	14	14	14
Deaths (Includes cows put down)	0	0	0	0	1
Deaths total to date	11	11	11	11	12
Calved Cows available (Peak Number 560)	551	551	550	550	549
Treatment / Sick mob total	5	0	0	0	0
Mastitis clinical treatment	0	0	0	0	0
Mastitis clinical YTD (tgt below 64 yr end)	86	86	86	86	86
Bulk milk SCC (tgt Avg below 150)	168	179	162	174	194
Lame new cases	4	7	14	4	5
Lame ytd	73	80	94	98	103
Lame days YTD (Tgt below 1000 yr end)	758	842	961	1094	1269
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	529	535	530	531	524
Milking once a day into vat	17	16	20	19	25
Small herd	138	139	139	144	140
Main Herd	391	396	376	368	384
MS/cow/day (Actual kg / Cows into vat only)	1.97	1.97	2.00	1.98	1.91
MS/cow to date (total kgs / Peak Cows	281	295	309	322	336
MS/ha/day (total kgs / ha used)	6.73	6.78	6.86	6.80	6.54
Herd Average Cond'n Score				4.30	
Monitor group LW kg WOW early MA calvers	488	488	490	491	483
Soil Temp Avg Aquaflex	15.5	15.9	16.3	16.1	18.0
Growth Rate (kgDM/ha/day)	86	90	90	85	126
Plate meter height - ave half-cms	14.9	15.2	14.3	15.0	16.3
Ave Pasture Cover (x140 + 500)	2579	2631	2507	2596	2779
Surplus/[defict] on feed wedge- tonnes					54
Pre Grazing cover (ave for week)	3326	3464	3191	3347	3366
Post Grazing cover (ave for week)	1600	1750	1650	1650	1650
Highest pregrazing cover	3594	3692	3420	3436	3600
Area grazed / day (ave for week)	7.51	7.75	7.30	6.56	6.11
Grazing Interval	20	21	22	24	26
Milkers Offered/grazed kg DM pasture					
Estimated intake pasture MJME					
Milkers offered kg DM Grass silage					
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME					
Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)					
Pasture % Protein					
Pasture % DM - Concern below 16%					
Pasture % NDF Concern < 33					
Mowed pre or post grazing YTD	162.1	176.9	203.1	214.3	219.3
Total area mowed YTD	195.0	209.8	244.4	255.6	268.1
Supplements fed to date kg per cow (560 peak)	113.8	113.8	113.8	113.8	113.8
Supplements Made Kg DM / ha cumulative	521.7	521.7	642.4	642.4	701.3
Units N applied/ha and % of farm	25units/ 41.7%	0	25units/ 28.9%	25units/ 33.7%	25units/25.6%
Kgs N to Date (whole farm)	103	103	110	119	125
Rainfall (mm)	4.8	52	0.04	17.8	8.4
Aquaflex topsoil rel. to fill point target 60 - 80%	70-80	90-100	70-90	80	60-90

We walk the farm every Tuesday at 9am. Farmers or their managers and staff are always welcome to walk with us. Please call to notify us of your intention and bring your plate meter and gumboots. Phone SIDDC – 03 423 0022.

Peter Hancox, Farm Manager, Natalia Benquet, Charlotte Westwood.

Next LUDF Focus day – 18th February, 10.15 – 1.00pm at LUDF.

Employment opportunities at LUDF:

LUDF will shortly begin recruiting for a 2IC for the 2016-17 Season and a farm assistant. A flexible start date is possible for the farm assistant. Please email hancoxp@lincoln.ac.nz for further information.

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 19 January 2016

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Critical issues for the short term

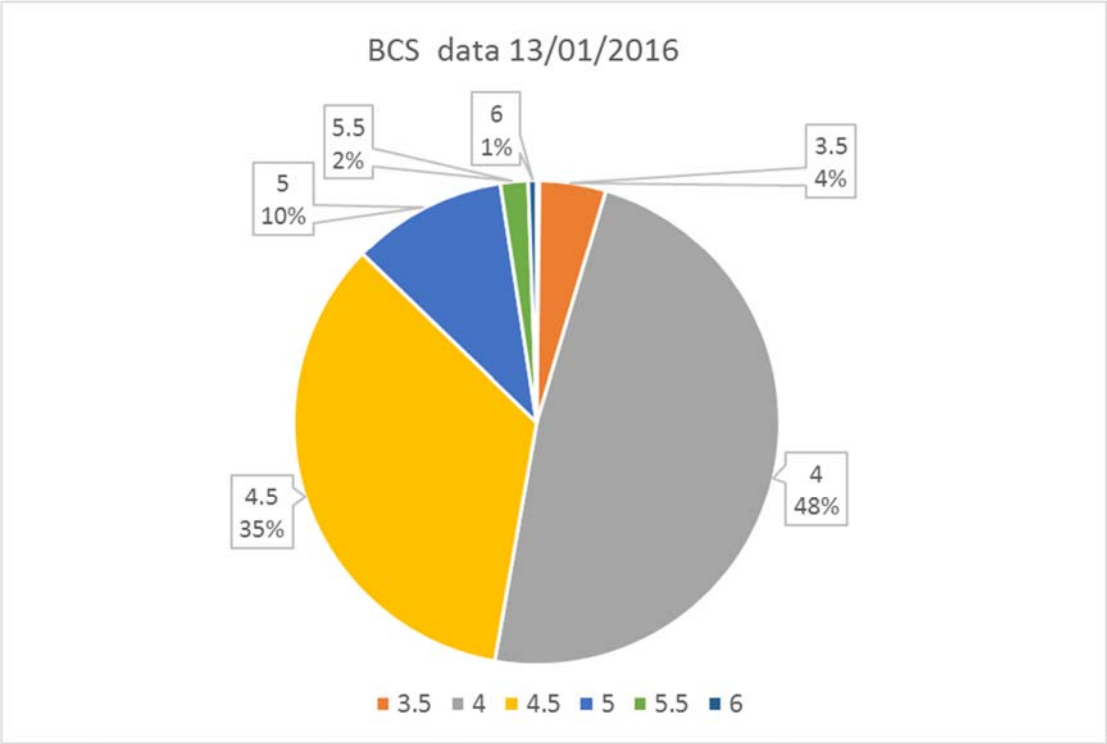
1. **Monitor average pasture cover on the milking platform**
2. **Monitor pasture quality coming through the current grazing to ensure good quality and quantity of feed, with the aim to minimise the rate of drop off peak milksolids production.**
3. **Make appropriate and timely decisions with regard to mowing or areas out for silage**
4. **Supplement cows with Magnesium**
5. **AI and bull mating has now finished**

Key Numbers - week ending Tuesday 19th January 2016

Ave Past Cover	2596 kgDM/ha	Past Growth Rate	85kgDM/ha/day
Round length	24.3 days	Ave Supplement used	0 kgDM/cow/day
No Cows on farm	550 (all cows are milking into the vat)	Ave Soil Temp (week)	16.1 degrees
Ave Milk Production	1.98 kgMS/cow	SCC	174,000

Herd Management

1. There are currently 550 milkers on farm all milking twice a day.
2. This week we had 4 new lame cows but no new cases of mastitis this week.
3. Cows were BCS on Thursday 14th January 2016. The information is presented below. Average BCS is 4.3, a drop of 0.2 from 4.5 when last being scored on 9th December 2015.



4. The farm is continuing to run two herds. The make-up of these herds changed yesterday (18/01/16) according to the BCS information received from last week, and presented above. The aim of redrafting of the herds is to target preferential feeding of lighter and early calving cows, encouraging as much weight gain as possible and minimising the need to dry off light condition score cows early in the autumn.
5. The small herd has 144 early calving cows with a BCS below 4.5. The large herd has the remainder of the cows (later calving and heavier BCS (406 cows). The small herd continues to be preferentially fed, generally getting the first part of each paddock and not being pushed as much to achieve target grazing residuals
6. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
7. All heifer replacements (total 155) are grazing on the East Block. They received their second / booster 7 in 1 vaccination on Monday 11th January.
8. All calves are on pasture only.
9. Cow liveweight is holding steady (in spite of the reduction in condition score).

Mating

10. 6 weeks AI Mating started on 25th October 2015 and bulls were removed on 5th January (10 weeks mating)
    a. Our 3-week Submission rate was 89%
    b. Our 6 week submission rate was 97.7%
    c. Our 6 week InCalf was reported in last week's farm walk notes as 71% based on the Fertility Focus Report run through MINDA Pro version 1. LIC has advised us to instead use the newer updated version of MINDA on the Web. This reports a 6-week InCalf rate of 68% (MINDA version 2.15). This latest version of MINDA would be the most accurate in terms of up-to-date information and the model behind the final report, hence our 6-week-InCalf rate will be reported according to this latest report, at 68%.

       These results are based on pregnancy scanning 11th January 2016. Later calving cows will be pregnancy tested in early February. More analysis on this will be provided as it becomes available to the management team.
11. **Mating of 15 Month Old heifers**

a. The 15 month old heifers were run with bulls from 15th October till mid-December and will be pregnancy tested on the 27th January.

Growing Conditions

12. The average 9 am soil temperature for the week was 16.1 degrees (0.2 degrees lower than last week).
13. There has been 17.8 mm of rainfall over the last week (not including last night's rainfall).
14. Both North and South pivots have irrigated for 3 days this week. All irrigation was turned off as the rain started.

Figure 1: Soil temperature history for the last 2 weeks

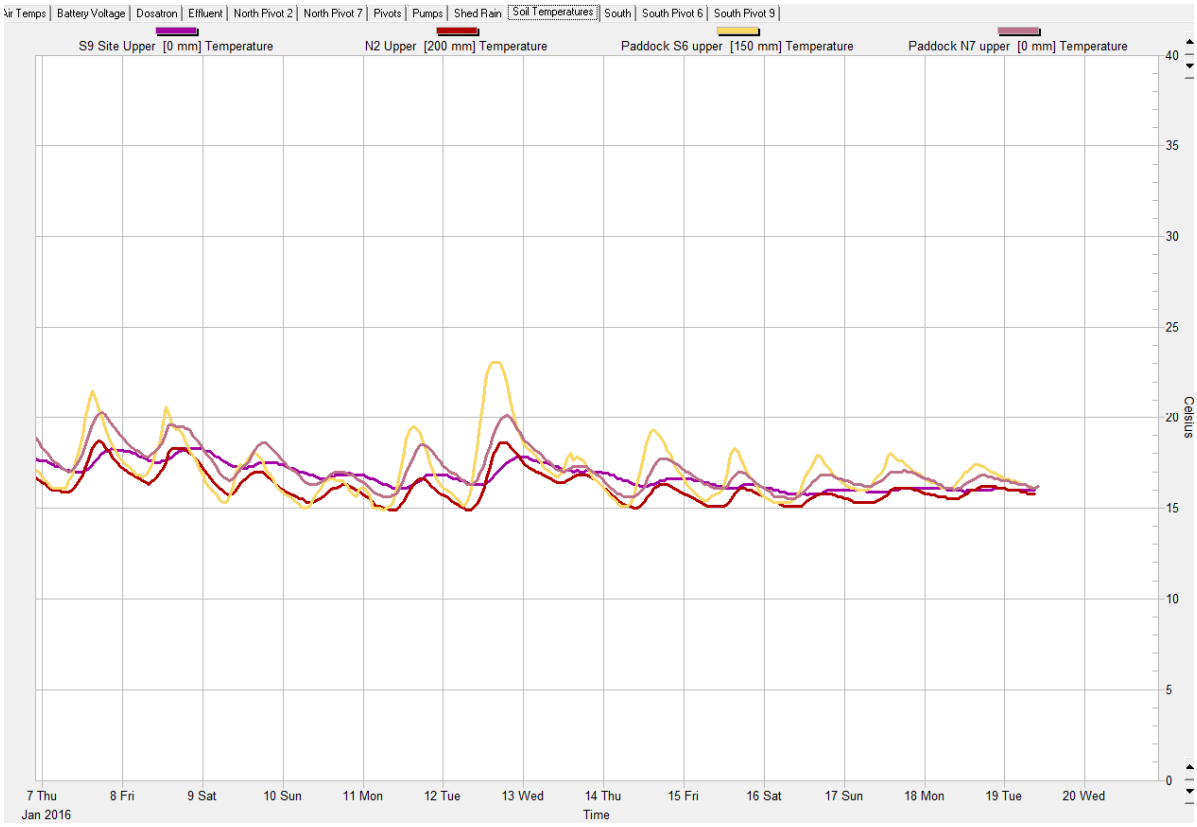
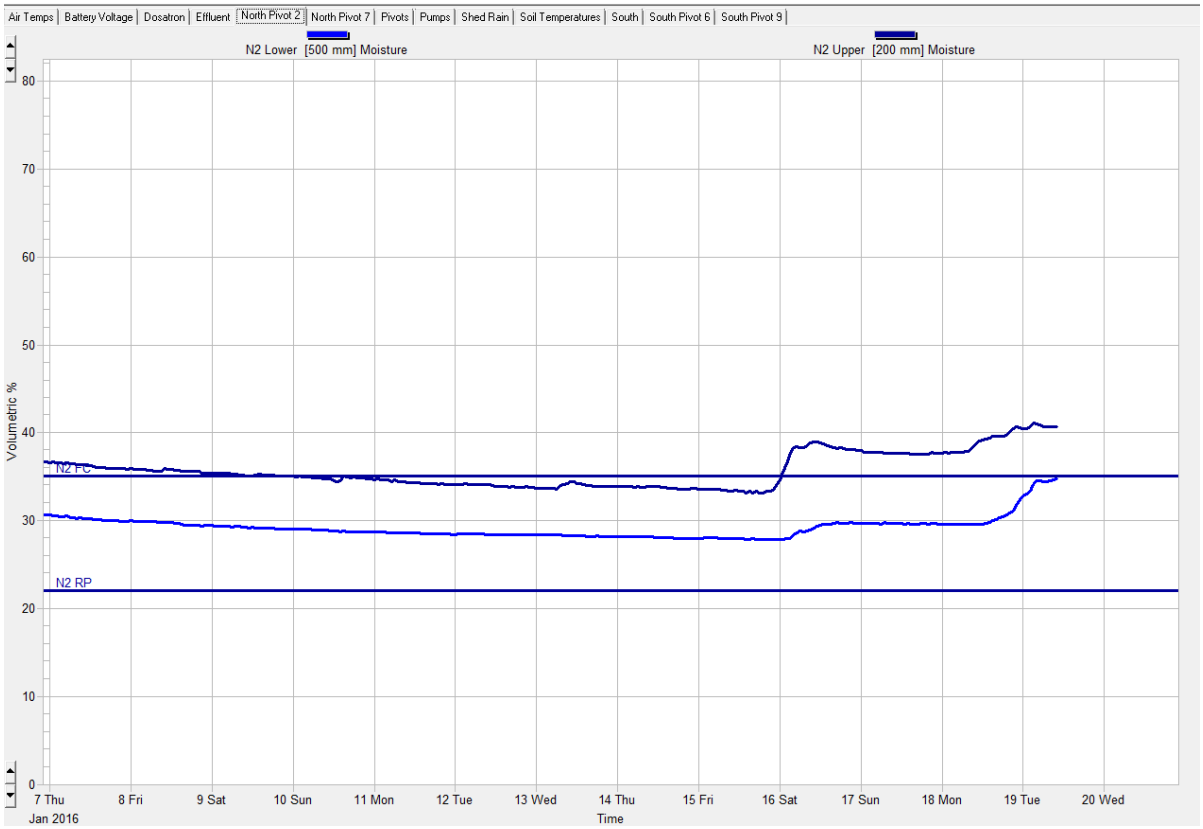


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



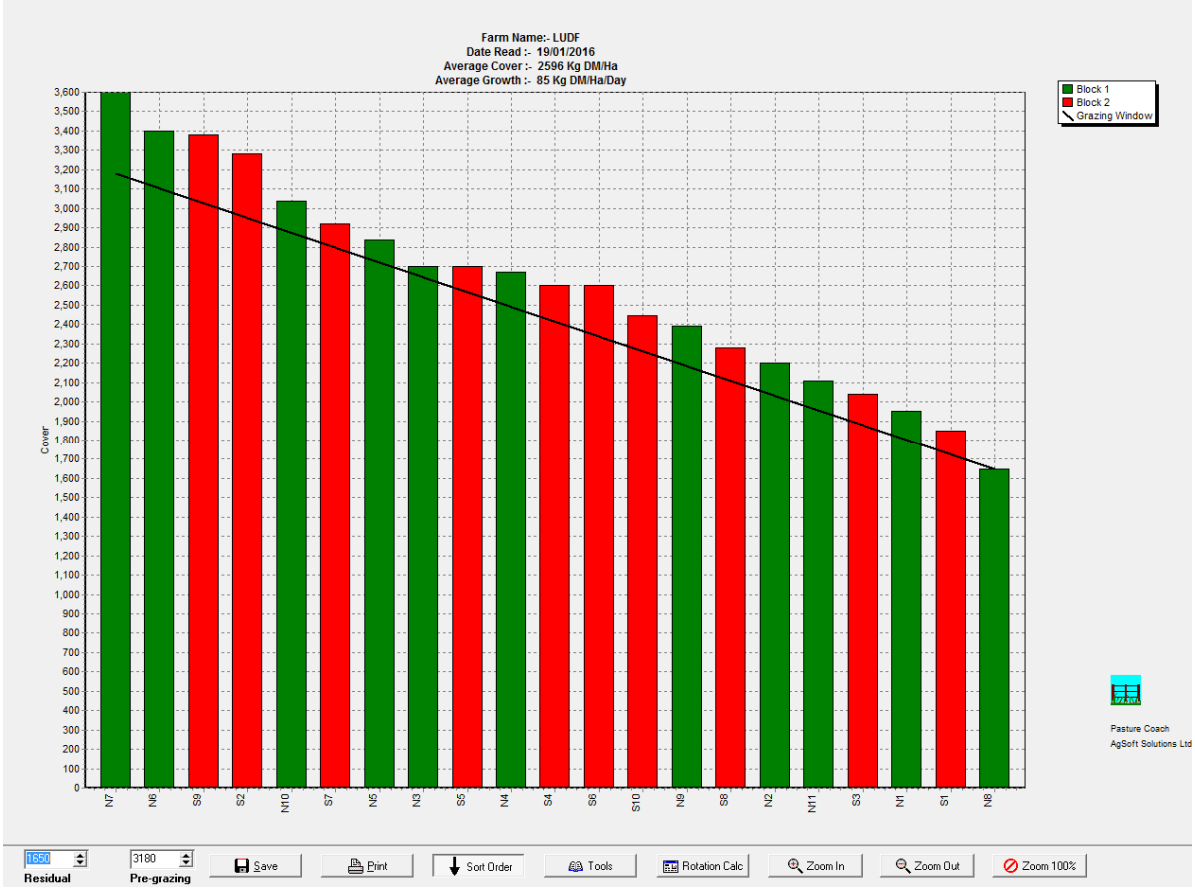
Nitrogen

15. 54 hectares received nitrogen as urea at 25kgN/ha over the last week. Season to date we have used 119kgN/ha.

Pasture and Feed Management

16. 24.3 day round for the week (6.56 ha grazed per day) over 160 effective ha of the milking platform.
17. There was no grass cut for baleage this week.
18. 12.2 Ha has been pregraze mown this week.
19. Pasture quality:
    a. Pasture quality appears relatively good due to recent cool growing conditions. Some seedhead is still apparent on the later heading ryegrass paddocks – however this is getting less and less noticeable.
    b. The pregraze mowing and ex baleage areas are now coming back into the round looking leafy and of good quality.
    c. The rising plate meter could be over-estimating some readings due to the wet conditions during the farm walk today. Also, the plantain seedhead remain very present which contributes to higher readings.
    d. Fertility patches are evident in a small number of paddocks, contributing to some variation in pasture cover when plating, as well as quality variation across some paddocks.

Figure 3: This week's feed wedge



20. Based on the full farm area 160 ha in the grazing round, the target pregrazing cover and demand line in the feed wedge has been calculated using a target rotation length of 23 days, an intake of 20kgDM/cow/day, 550 cows (for the week ahead) and a post grazing residual of 1650 kgDM/ha. Target pregrazing cover is therefore:

    (Stocking rate x ***Intake from pasture*** x Rotation) + Optimum residual = Pre-grazing Cover.

    (551 cows / 160ha x 20 kgDM/cow/day x 23 days) + **1650** = 3234 kgDM/ha.

21. This expected per cow dry matter intake demand is based on calculations that allow for milk production, a slight increase in liveweight, maintenance requirements and distance walked. (See DairyNZ facts and figures for these details). At LUDF this calculates to approx. 240MJME at present. Feed testing before Christmas suggests pasture was approximately 11.9 MJME, therefore 240MJME requires approximately 20 kgDM / cow / day. This is equivalent to a demand of 69kgDM/ha/day across 160 ha)
22. Average pasture cover has increased from last weeks cover of 2507 kgDM/ha to 2596kgDM/ha. This increase in average pasture cover is to be expected given the growth rates we are seeing in the past 2 weeks (90 kgDM/ha/day previous week and 85 kgDM/ha/day this past week). Our feed demand is around 69 kgDM/ha/day, which explains the slow but steady accumulation of pasture.
23. The feed wedge above now shows a surplus of 30,148 kgDM compared to a surplus of 14,252kgDM the previous week.

Feeding Management for the coming week:

24. Given all of the above, the key decisions for the week ahead:
    a. Paddock N6 has been targeted for silage harvest during this coming week (second paddock in the wedge). This will take care of around 14,600 kgDM of the 30,148 tDM surplus and take care of a small weed challenge in that particular paddock. This leaves the farm in a pasture surplus situation similar to that reported last week.

b. We will continue to observe closely pasture growth rate through the week as high temperatures are forecasted later this week, which may cause a substantial lift in daily pasture growth rate. Should this happen, we will potentially drop a second paddock for silage or use pre-graze mowing to take care of any further surplus developing through the week.

c. We will target a 23 day round (6.95 Ha/day or 48.7 ha /week) across 160 ha. This will be continuously re-evaluated based on the pasture growing conditions.

d. Continue to monitor rate of drop off peak milksolids production as an important indicator of both cow feed intake as well as pasture quality.

LUDF Weekly report	22-Dec-15	29-Dec-15	5-Jan-16	12-Jan-16	19-Jan-16
Farm grazing ha (available to milkers)	160	160	160	160	160
Dry Cows on farm / East blk /Jackies/other	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0
Culls (Includes culls put down & empties)	1	0	0	1	0
Culls total to date	13	13	13	14	14
Deaths (Includes cows put down)	0	0	0	0	0
Deaths total to date	11	11	11	11	11
Calved Cows available (Peak Number 560)	551	551	551	550	550
Treatment / Sick mob total	8	5	0	0	0
Mastitis clinical treatment	7	0	0	0	0
Mastitis clinical YTD (tgt below 64 yr end)	86	86	86	86	86
Bulk milk SCC (tgt Avg below 150)	185	168	179	162	174
Lame new cases	8	4	7	14	4
Lame ytd	69	73	80	94	98
Lame days YTD (Tgt below 1000 yr end)	660	758	842	961	1094
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	527	529	535	530	531
Milking once a day into vat	16	17	16	20	19
Small herd	138	138	139	139	144
Main Herd	389	391	396	376	368
MS/cow/day (Actual kg / Cows into vat only)	2.11	1.97	1.97	2.00	1.98
MS/cow to date (total kgs / Peak Cows	268	281	295	309	322
MS/ha/day (total kgs / ha used)	7.22	6.73	6.78	6.86	6.80
Herd Average Cond'n Score					4.30
Monitor group LW kg WOW early MA calvers	486	488	488	490	491
Soil Temp Avg Aquaflex	0.0	15.5	15.9	16.3	16.1
Growth Rate (kgDM/ha/day)	97	86	90	90	85
Plate meter height - ave half-cms	14.7	14.9	15.2	14.3	15.0
Ave Pasture Cover (x140 + 500)	2554	2579	2631	2507	2596
Surplus/[defict] on feed wedge- tonnes	0	0	0	0	0
Pre Grazing cover (ave for week)	3275	3326	3464	3191	3347
Post Grazing cover (ave for week)	1600	1600	1750	1650	1650
Highest pregrazing cover	3468	3594	3692	3420	3436
Area grazed / day (ave for week)	7.35	7.51	7.75	7.30	6.56
Grazing Interval	21	20	21	22	24
Milkers Offered/grazed kg DM pasture					
Estimated intake pasture MJME					
Milkers offered kg DM Grass silage					
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME					
Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)					
Pasture % Protein					
Pasture % DM - Concern below 16%					
Pasture % NDF Concern < 33					

Mowed pre or post grazing YTD	146.3	162.1	176.9	203.1	214.3
Total area mowed YTD	174.2	195.0	209.8	244.4	255.6
Supplements fed to date kg per cow (560 peak)	113.8	113.8	113.8	113.8	113.8
Supplements Made Kg DM / ha cumulative	470	521.7	521.7	642.4	642.4
Units N applied/ha and % of farm	25units/ 17%	25units/ 41.7%	0	25units/ 28.9%	25units/ 33.7%
Kgs N to Date (whole farm)	92	103	103	110	119
Rainfall (mm)	26.6	4.8	52	0.04	17.8
Aquaflex topsoil rel. to fill point target 60 - 80%	70-90	70-80	90-100	70-90	80

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Lincoln University Dairy Farm - Farm Walk notes

Tuesday 12 January 2016

LUDF – focus for 2015/16 Season: Nil-Infrastructure, low input, low N-loss, maximise profit. Farm system comprises 3.5 cows/ha (peak milked), Target 150kgN/ha, 300kgDM/cow imported supplement, plus winter most cows off farm. FWE of less than $1.08 million and Target production of 500kgMS/cow (>100% liveweight in milk production).

Critical issues for the short term

1. **Monitor average pasture cover on the milking platform**
2. **Monitor pasture quality coming through the current grazing to ensure good quality and quantity of feed, with the aim to minimise the rate of drop off peak milksolids production.**
3. **Make appropriate and timely decisions with regard to mowing or areas out for silage**
4. **Supplement cows with Magnesium**
5. **AI and bull mating has now finished**

Key Numbers - week ending Tuesday 12th January 2016

Ave Past Cover	2507 kgDM/ha	Past Growth Rate	90kgDM/ha/day
Round length	22 days	Ave Supplement used	0 kgDM/cow/day
No Cows on farm	550 (all cows are milking into the vat)	Ave Soil Temp (week)	16.3 degrees
Ave Milk Production	2.0 kgMS/cow	SCC	162,000

Herd Management

1. There are currently 550 milkers on farm. 17 are in the OAD mob as lames.
2. This week we had 14 new lame cows but no new cases of mastitis this week.
3. Two herds are being run with 139 cows in the small herd (heifers and lighter cows) and 396 in the older herd. The small herd continues to be preferentially fed, generally getting the first part of each paddock and not being pushed as much to achieve target grazing residuals. This is to hold current cow condition / maximise the chance of body condition gain for all cows.
4. Cows will be BCS this coming Thursday 14th January 2016.
5. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
6. All heifer replacements (total 155) are grazing on the East Block. They received their second / booster 7 in 1 vaccination on Monday 11th January.
7. All calves are on pasture only.
8. Cow liveweight is holding steady.

Mating

9. Mating of in milk cows started on 25th October 2015
   a. Our 3-week Submission rate was 89%
   b. Our 4-week Submission rate was 95%
   c. Our 6 week submission rate was 97.7%
   d. Our 6 week incalf is 71% (fertility focus report) based on pregnancy scanning yesterday 11th January 2016. More analysis on this will be provided at the coming focus day (18th February).

10. **Mating Plan: Milking herd.** AB finished on 3rd December and bulls have been out with the herd since Friday 4th December. Bulls were removed from the herd 5th January 2015.

11. **Mating of 15 Month Old heifers**
    a. Heifers were naturally mated as there facilities where they are grazing weren't suitable for AI mating.
    b. The mated 15 month old heifers won't be pregnancy tested until the autumn due to lack of suitable yard facilities where they are currently grazing.

Growing Conditions

12. The average 9 am soil temperature for the week was 16.3 degrees (0.4 degrees higher than last week). There has been 0.04mm of rainfall over the last week.

13. The North pivot has been irrigating for four days this week, in contrast to the South Pivot which has been irrigating for three days this week. Corner sprinklers and K line have been on for the last 4 days.

Figure 1: Soil temperature history for the last 2 weeks

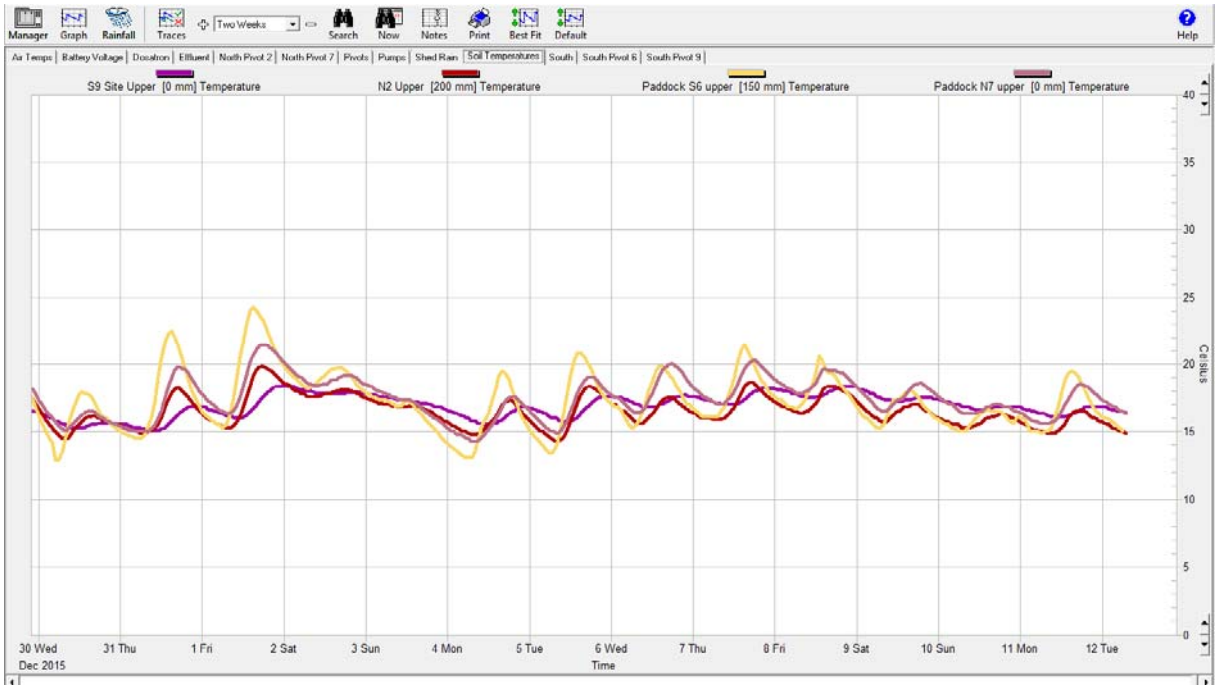
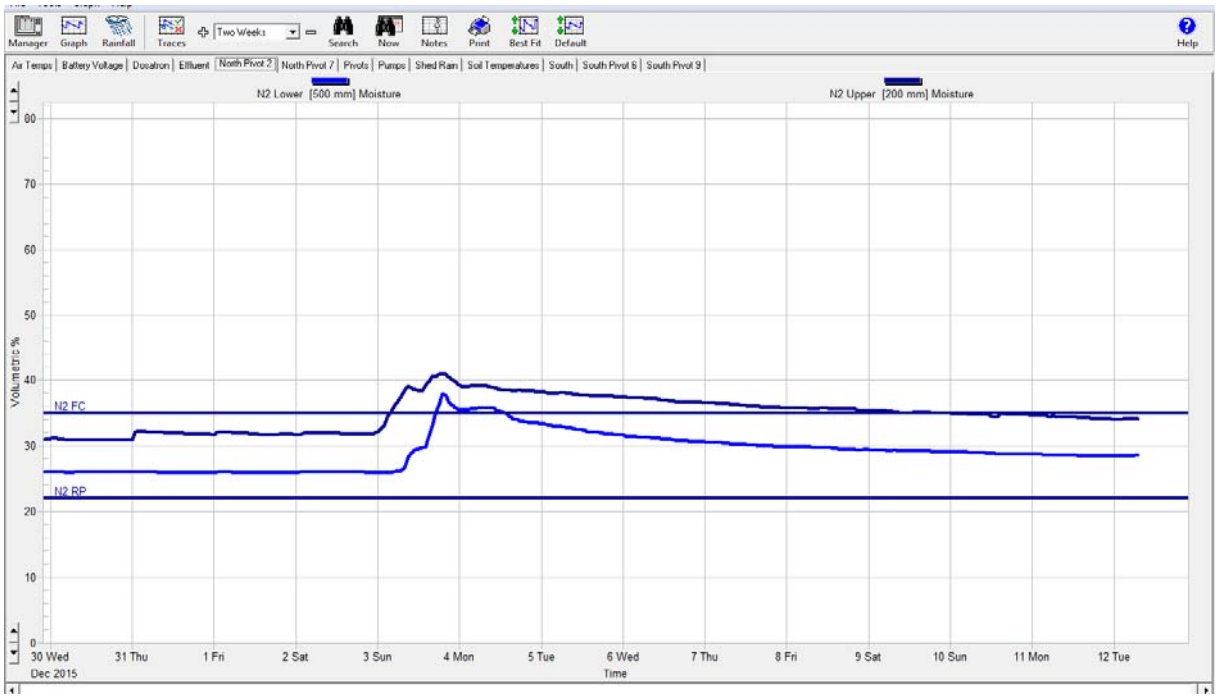


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



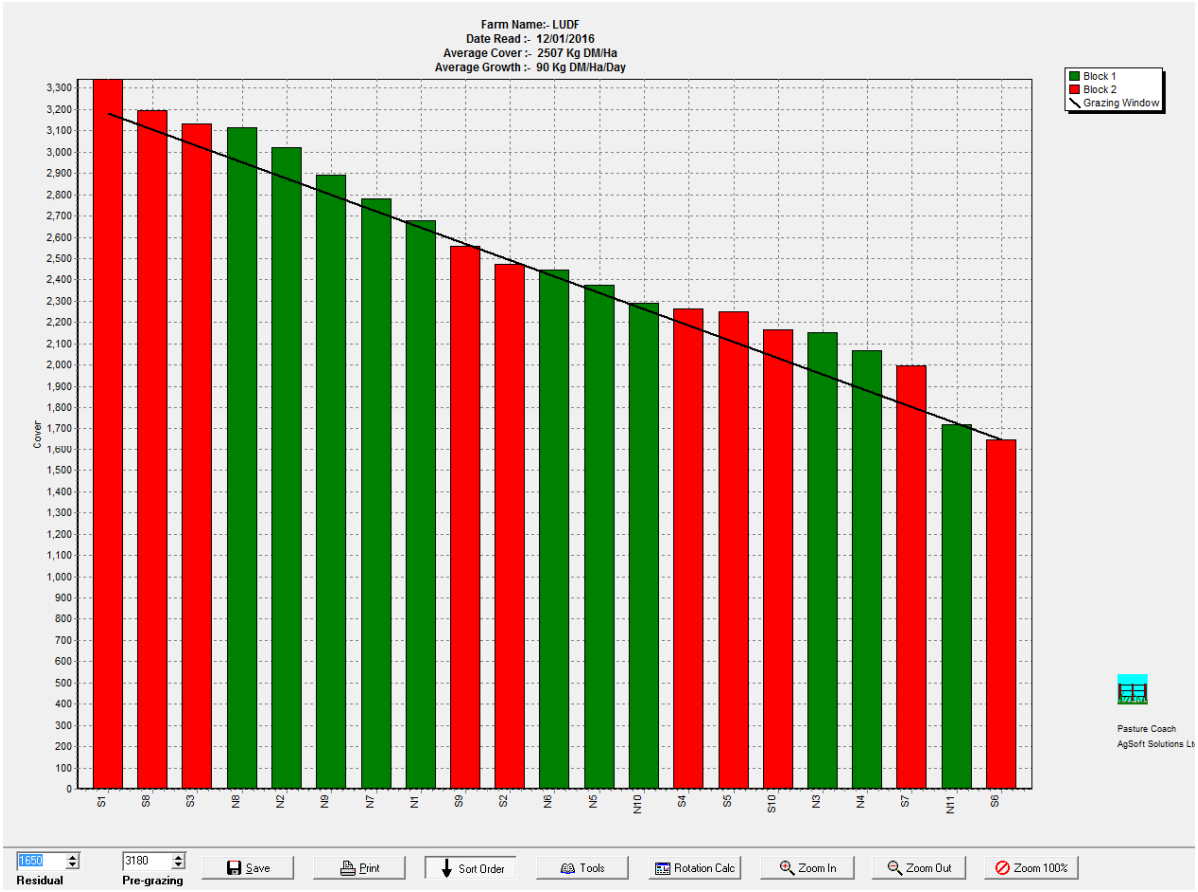
Nitrogen

14. 46.3 hectares received nitrogen as urea at 25kgN/ha over the last week. Season to date we have used 110kgN/ha.

Pasture and Feed Management

15. 21.9 day round for the week (7.3 ha grazed per day) over 160 effective ha of the milking platform.
16. Paddock S4 (8.27ha) was cut for baleage this week, 19.3 tonne DM was harvested = 2.33 tDM/ha. This was harvested largely to control a dock weed challenge.
17. 26.25 Ha has been pregraze mown this week.
18. Paddock S7 (7.6 ha) is back in the grazing round following regrassing. It had its first grazing this week
19. Pasture quality:
    a. Pasture quality appears relatively good due to recent cool growing conditions. Some seedhead is apparent on the later heading ryegrass paddocks – however this is not as extensive as during late December.
    b. The pregraze mowing and ex baleage areas are now coming back into the round looking leafy and of good quality.
    c. The rising plate meter is over-estimating a small number of paddocks due to the ongoing presence of plantain seedhead, and for ryegrass paddocks with seedhead that have not yet been mown.
    d. Fertility patches are evident in a small number of paddocks, contributing to some variation in pasture cover when plating, as well as quality variation across some paddocks.
    e. The hybrid ryegrass (Shogun) areas that late last year appeared of somewhat poorer quality than the perennial areas are at last under good control with limited seed head evident. The base of these paddocks are leafy, with less evidence of heavier stems that were present during the last two to three grazing rounds.

Figure 3: This week's feed wedge



20. Based on the full farm area 160 ha in the grazing round, the target pregrazing cover and demand line in the feed wedge has been calculated using a target rotation length of 23 days, an intake of 20kgDM/cow/day, 550 cows (for the week ahead) and a post grazing residual of 1650 kgDM/ha. Target pregrazing cover is therefore:

    (Stocking rate x ***Intake from pasture*** x Rotation) + Optimum residual = Pre-grazing Cover.

    (551 cows / 160ha x 20 kgDM/cow/day x 23 days) + **1650** = 3234 kgDM/ha.

    Note that this calculation has changed slightly from before Christmas, recognising a slightly lower post grazing residual during these last week's farm walk (down from our previous calculations of 1750 kgDM/ha). This reflects the presence of good quality leaf to the base of the pasture sward, compared with the stemmy, heavier base of the sward present before Christmas.
21. This expected per cow dry matter intake demand is based on calculations that allow for milk production, a slight increase in liveweight, maintenance requirements and distance walked. (See DairyNZ facts and figures for these details). At LUDF this calculates to approx. 240MJME at present. Feed testing before Christmas suggests pasture was approximately 11.9 MJME, therefore 240MJME requires approximately 20 kgDM / cow / day. This is equivalent to a demand of 69kgDM/ha/day across 160 ha)
22. Average pasture cover has decreased from last weeks cover of 2631 kgDM/ha to 2507kgDM/ha. This drop in average pasture cover is to be expected after harvesting the silage and pre-graze mowing.
23. The feed wedge above shows a surplus of 14,252kgDM (just over one days feed).
24. With pasture growth rates of around 90kgDM/ha/day outpacing our current daily demand of just under 70kgDM/ha/day means we will need to continue reassess the potential for an ongoing small pasture surplus. With a couple of paddocks earmarked for pre-graze mowing when possible, this should help us control any small surplus of pasture should daily growth rates continue to exceed feed demand by the cows.

Feeding Management for the coming week:

25. Given all of the above, the key decisions for the week ahead:
    a. We will target a 23 day round (6.95 Ha/day or 48.7 ha /week) across 160 ha. This will be continuously re-evaluated based on the pasture growing conditions.
    b. Continue to monitor rate of drop off peak milksolids production as an important indicator of both cow feed intake as well as pasture quality.

LUDF Weekly report	15-Dec-15	22-Dec-15	29-Dec-15	5-Jan-16	12-Jan-16
Farm grazing ha (available to milkers)	160	160	160	160	160
Dry Cows on farm / East blk /Jackies/other	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0	0/0/0/0
Culls (Includes culls put down & empties)	1	1	0	0	1
Culls total to date	12	13	13	13	14
Deaths (Includes cows put down)	1	0	0	0	0
Deaths total to date	11	11	11	11	11
Calved Cows available (Peak Number 560)	552	551	551	551	550
Treatment / Sick mob total	5	8	5	0	0
Mastitis clinical treatment	4	7	0	0	0
Mastitis clinical YTD (tgt below 64 yr end)	79	86	86	86	86
Bulk milk SCC (tgt Avg below 150)	163	185	168	179	162
Lame new cases	7	8	4	7	14
Lame ytd	61	69	73	80	94
Lame days YTD (Tgt below 1000 yr end)	548	660	758	842	961
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	533	527	529	535	530
Milking once a day into vat	14	16	17	16	20
Small herd	139	138	138	139	139
Main Herd	394	389	391	396	376
MS/cow/day (Actual kg / Cows into vat only)	2.11	2.11	1.97	1.97	2.00
MS/cow to date (total kgs / Peak Cows	253	268	281	295	309
MS/ha/day (total kgs / ha used)	7.23	7.22	6.73	6.78	6.86
Herd Average Cond'n Score	4.50				
Monitor group LW kg WOW early MA calvers	488	486	488	488	490
Soil Temp Avg Aquaflex	14.9	0.0	15.5	15.9	16.3
Growth Rate (kgDM/ha/day)	86	97	86	90	90
Plate meter height - ave half-cms	16.0	14.7	14.9	15.2	14.3
Ave Pasture Cover (x140 + 500)	2734	2554	2579	2631	2507
Surplus/[defict] on feed wedge- tonnes	0	0	0	0	0
Pre Grazing cover (ave for week)	3462	3275	3326	3464	3191
Post Grazing cover (ave for week)	1600	1600	1600	1750	1650
Highest pregrazing cover	3468	3468	3594	3692	3420
Area grazed / day (ave for week)	6.97	7.35	7.51	7.75	7.30
Grazing Interval	22	21	20	21	22
Milkers Offered/grazed kg DM pasture					
Estimated intake pasture MJME					
Milkers offered kg DM Grass silage					
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME					
Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)	11.9				
Pasture % Protein	18.2				
Pasture % DM - Concern below 16%	15.1				
Pasture % NDF Concern < 33	38.3				
Mowed pre or post grazing YTD	132.3	146.3	162.1	176.9	203.1
Total area mowed YTD	151.9	174.2	195.0	209.8	244.4
Supplements fed to date kg per cow (560 peak)	113.8	113.8	113.8	113.8	113.8

Supplements Made Kg DM / ha cumulative	319.06	470	521.7	521.7	642.4
Units N applied/ha and % of farm	25units 26.3%	25units/ 17%	25units/ 41.7%	0	25units/ 28.9%
Kgs N to Date (whole farm)	88	92	103	103	110
Rainfall (mm)	19.2	26.6	4.8	52	0.04
Aquaflex topsoil rel. to fill point target 60 - 80%	60-90	70-90	70-80	90-100	70-90

We will be walking the farm every Tuesday at 9am for the rest of the season.

Farmers or their managers and staff are always welcome to walk with us. Please call to notify us of your intention and bring your plate meter and gumboots. Phone SIDDC – 03 423 0022.

Peter Hancox, Farm Manager, Natalia Benquet, Charlotte Westwood.

Next LUDF Focus day – 18th February, 10.15 – 1.00pm at LUDF.