

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 26th April 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 as head towards planned cover at end of May.**
2. **Focus on pushing cover through the remainder of the autumn (while retaining pasture quality).**
3. **Watch cow BCS and dry off targets to ensure all cows meet BCS targets at calving (min 5 for MA cows and 5.5 for R3yr's)**
4. **Supplement cows with Magnesium**

Key Numbers - week ending Tuesday 26th April 2016

Ave Past Cover	2506 kgDM/ha	Past Growth Rate	31 kgDM/ha/day
Round length	39 days (for 160 ha)	Ave Supplement used (Total year to date*)	3.7 kgDM/cow/day (365kgDM/cow YTD)
No Cows on farm	520	Ave Soil Temp (week)	11.8 degrees
Ave Milk Production	1.72 kgMS/cow	SCC	190,000

** includes silage made on farm and 114 kgDM/cow imported supplement used in early spring*

Herd Management

1. There are currently 520 milkers on farm. 18 cows are on once-a-day milking (lames).
2. This week we had 2 new lame cows and no new case of mastitis.
3. The farm continues to run two herds however with the removal of most cull cows next week, the farm may run a single herd from early May onwards.
4. All cows will be individually body condition scored (BCS) on Wednesday 27th April which will guide dry-off decisions.
5. The BCS information from tomorrows scoring will be used in conjunction with the dry-off rules presented below. These are used on an individual cow basis and assumes the typical time required to get cows to appropriate calving BCS targets.
6. As LUDF has secured high quality winter grazing that has in past years delivered desired gains in CS over the winter, the farm is comfortable with a later end of the date range for the small number of cows that may still be under BCS 4.

Cows (4 years old and older)

Cow Condition	Dry off time (days before Calving)	Date cow need to be dried off (calving date 1-15 August)	Date cow need to be dried off (calving date 15-30 August)
3.5	100	20 April – 5 May	5-15 May
4	80	10-20 May	20 -30 May
4.5	60	NA	NA

Rising 3 year Old

Cow Condition	Dry off time (days before Calving)	Date cow need to be dried off (calving date 1-15 August)	Date cow need to be dried off (calving date 15-30 August)
3.5	120	1-15 April	15-30 April
4	100	20 April -5 May	5-15 May
4.5	80	10-20 May	20 -30 May
5	60	NA	NA

This strategy requires the feeding of appropriate quantities of good quality feed to the cows that are being dried off, i.e. - above maintenance levels.

7. 20 low producing cull cows left the farm on Friday 22nd April. The remainder of the cull cows are booked to leave the farm on 4th May 2016. With current milk production (average 1.7 kgMS/cow) available pasture cover and home-made (lower cost) silage the farm remains comfortable retaining empty cull cows on farm at the current milk price.
8. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
9. All 2015 born heifer replacements (total 155) have now been sent off to grazing. They were vaccinated against BVD and Leptospira on Monday the 7th March. A booster vaccination of BVD-Lepto plus a drench of Selenium was given to them on Monday the 11th of April.
10. The East Block (15 ha) is now destocked to allow pasture cover to accumulate in time for calving.

Growing Conditions

11. The average 9 am soil temperature for the week dropped a further 0.7 degree from last week to reach 11.8°C. The cooler nights are starting to have an impact on the weekly average temperatures. Day temperatures remain around 20 degrees.
12. The farm received approximately 5 mm of rain over the weekend.
13. With the small amount of rain, longer, cooler nights and steady soil moisture levels as below, the decision remains not to apply any further irrigation this season. Daily evapotranspiration rates (ET) are low so there is limited need to apply irrigation to replace ET.
14. The 10 day local weather forecast predicts similar conditions for the coming week with little if any rain forecast.

Figure 1: Soil temperature history for the last 2 weeks

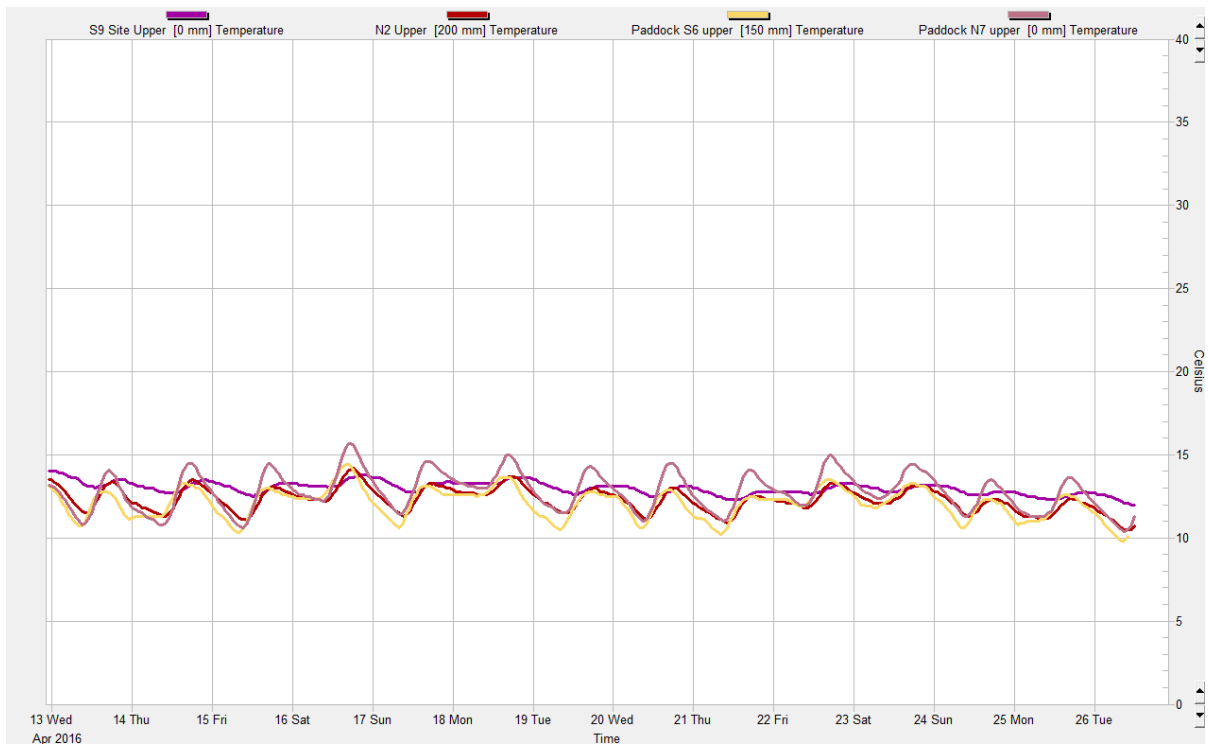
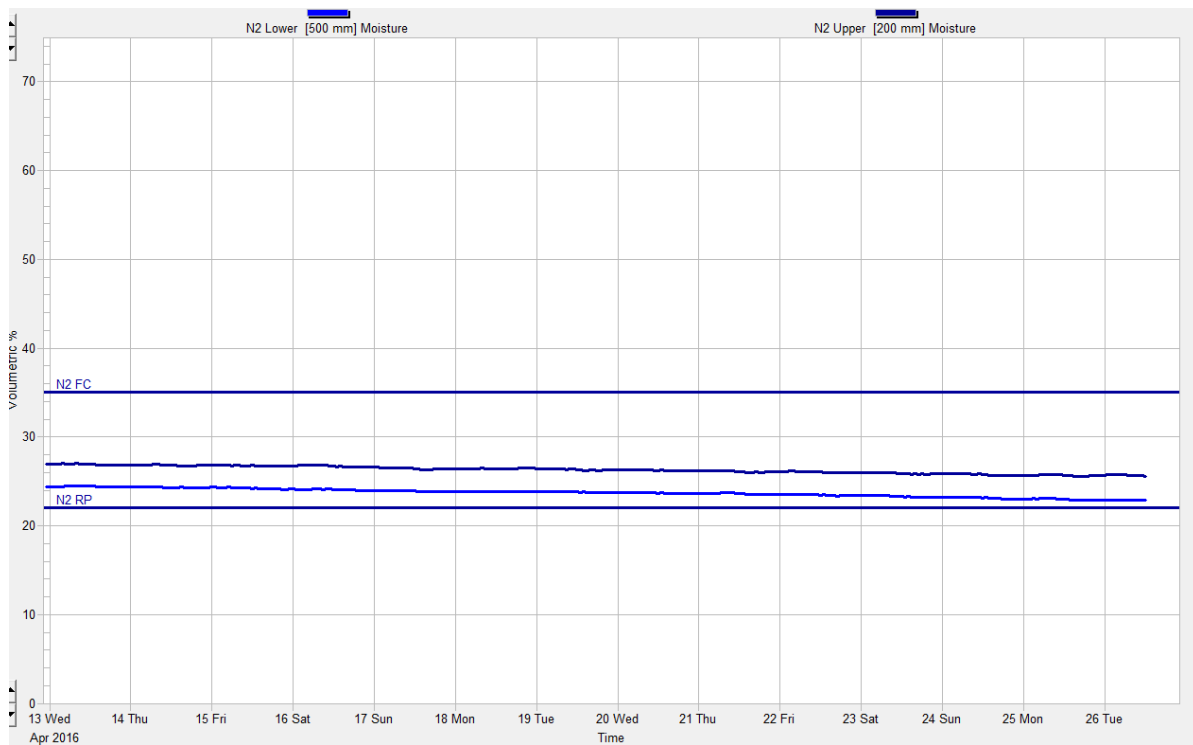


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



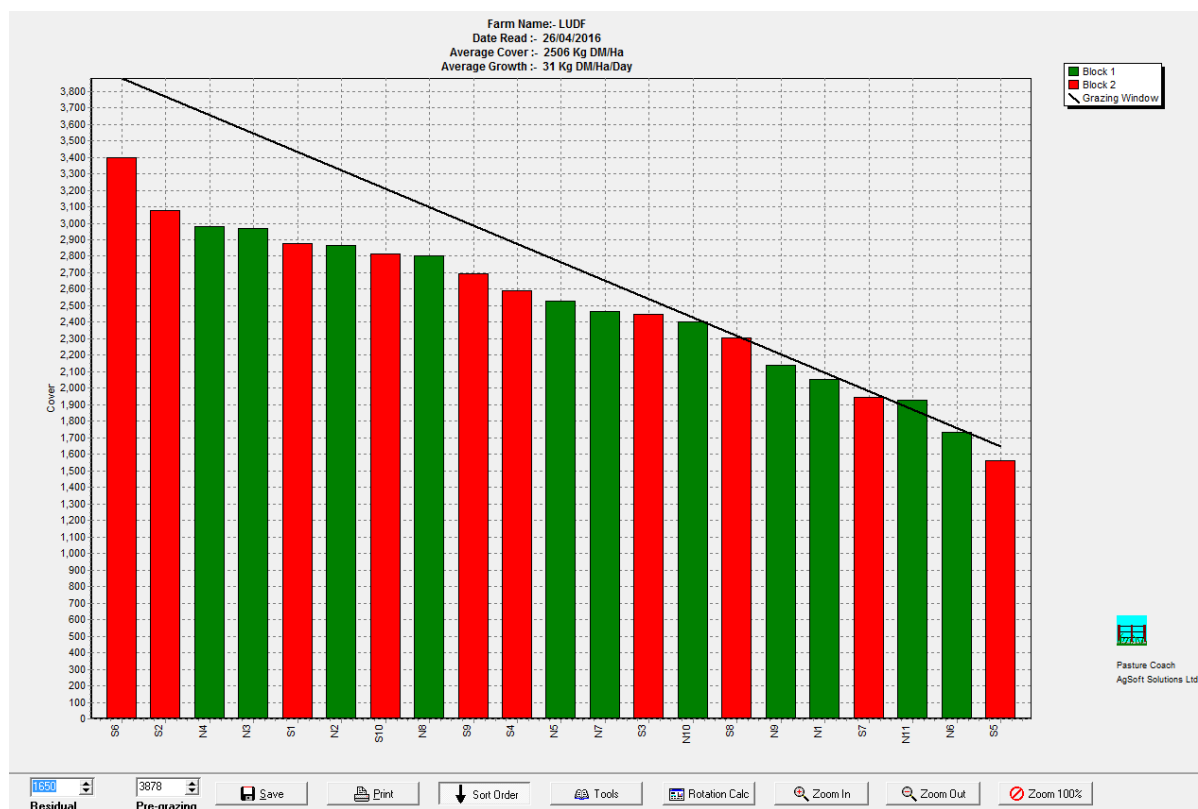
Nitrogen

- Nitrogen fertiliser applications have now finished for this season with the last application of N on 24th March 2016. A total of 179 kgN/ha has been applied season-to-date. This level of nitrogen use has slightly exceeded the target for this season (170 kgN/ha/season) as per the modelled farms N losses through Overseer. The total N-leached as per Overseer model for the season still remains well below Baseline.

Pasture and Feed Management

16. Fertility patches are becoming a bit more obvious, particularly in paddocks at the top of the wedge where the farm is beginning to graze paddocks that due to past grazing sequences did not receive N after their last grazing. Whereas the use of more nitrogen in late March / early April would have lessened this apparent N requirement, the decision was made back in the summer to use the farms limited total N input at that time when responses were higher and more certain.
17. Estimated pasture growth rates have dropped to 31kgDM/ha/day, compared to last week's growth of 52kgDM/ha/day. Growth rates for the same week last year were 79kgDM/ha/day.
18. Two weeks ago, taking into account weather conditions, growth rates and cow behaviour, it was decided to increase round length to around 39 days by feeding approximately 7 kg DM silage/cow/day. This has now has dropped to 3.7 kgDM/cow/day over the past week as this is all that has been required to hold the round at 39 days for the week.

Figure 3: This week's feed wedge



19. Based on the full farm area of 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 39 days
- A dry matter intake of 18.5 kgDM/cow/day
- 520 cows (for the week ahead)
- A post grazing residual of 1650 kgDM/ha.

Target pregrazing cover is therefore:

$$(\text{Stocking rate} \times \text{Intake from pasture} \times \text{Rotation}) + \text{Optimum residual} = \text{Pre-grazing Cover.}$$

$$(520 \text{ cows} / 160\text{ha} \times 18.5 \text{ kgDM/cow/day} \times 39 \text{ days}) + 1650 = 3994 \text{ kgDM/ha.}$$

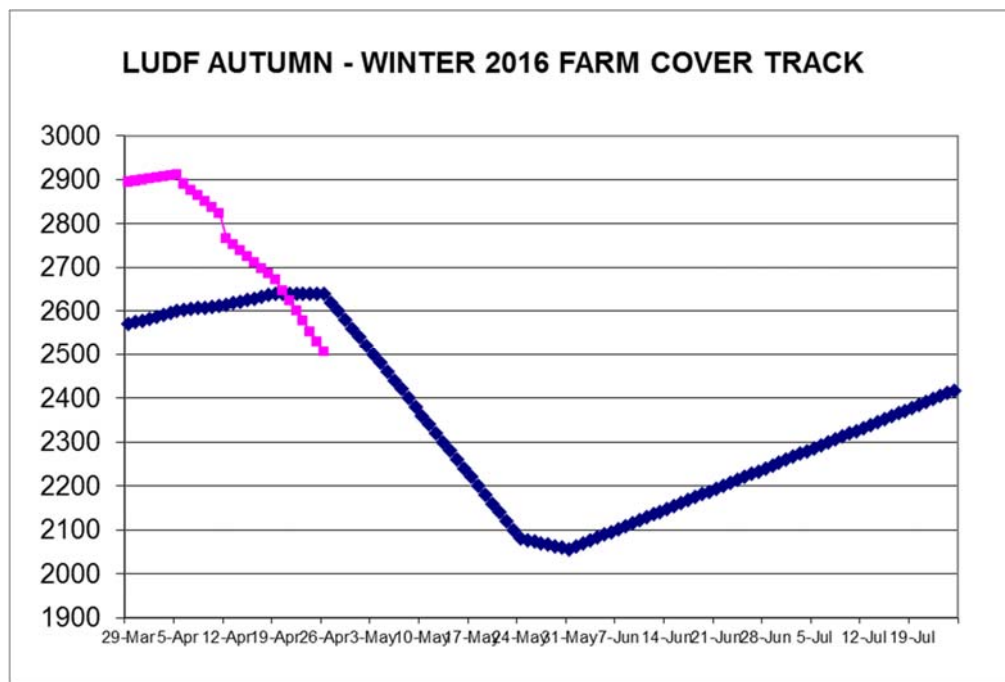
20. In this week's feed wedge the feed deficit increased to 42 tDM total (just over 4 days grazing) and the Average Pasture Cover dropped from 2671kgDM/ha (last week) to 2506 kgDM/ha, a drop of

165kgDM/ha since last week. The decrease in APC, estimated growth rate and silage fed approximately balance as follows:

- a. Daily demand for feed is approx. 60kgDM/ha/day or 9,620kgDM (520 cows x 18.5kgDM).
- b. The farm grew 31 kgDM/ha day for the last 7 days – well below demand
- c. The decline in APC of 165kgDM/ha over a week is equivalent to 23 kgDM/ha/day
- d. Total pasture supply from growth plus drop in APC is therefore:
 - i. 31kgDM pasture growth plus 23kgDM/ha drop in pasture cover.
 - ii. Pasture supply is therefore approx 54kgDM/ha/day.
- e. With demand at 60kgDM/ha/day and supply from pasture at 54kgDM/ha/day, we have a small deficit of around 6kgDM/ha/day.
- f. Silage has been fed at a rate of about 3.7 kgDM/cow/day = 12 kgDM/ha/day.
- g. Total feed offered is therefore approx. 66kgDM/ha/day, indicating some pasture cover may be a little lower than plated.

Given that milk production has not changed and BCS (on observation) appears to have if anything lifted over recent weeks, it would seem this small difference in per ha supply and demand could be associated with plating differences and paddock-to-paddock pasture performance in terms the difference between what the plate meter tells us and what the cows find.

21. Based on a pay-out of \$3.90/kgMS, the feeding of home grown silage to empty cull cows remains profitable, provided the cows don't drop from their current milk production.
22. Year to date, total silage fed per cow is 365 kgDM/cow. Of this, only 114 kgDM/cow is silage brought in from off farm. The remainder of the silage fed (251 kgDM/cow to-date) is relatively cheaper, high quality home grown silage.
23. The farm has a further 6 days of home grown silage available at a rate of 4 kgDM/cow/day. Cull cows are booked to leave the farm on the 4th May (8 days from now).
24. This may induce a small deficit in feed supply and contribute to a faster drop in APC if low growth rates continue for the next week.
25. Below is our autumn pasture cover tracker. The aim of the pasture tracker is to make sure we're on track to gradually drop average pasture cover down to our required target of 2050kgDM/ha at dry off in late May.
26. The pasture tracker indicates that the higher than budgeted average pasture covers on hand through March 2016 have helped us cope with the higher number of cows (including culls) currently still on farm through autumn. As well, having cheap home grown silage on hand has also allowed us to feed our cull cows in a relatively cost effective manner. In contrast last season, during autumn 2015 we started culling cows starting in early March.



27. The recent drop in Actual (pink on graph) average pasture cover to slightly below Target (blue on graph) is manageable at this point in time. Once cull cows depart from the herd on 4th May, the farm should have enough pasture cover (plus growth) to get to around the 20th of May.
28. Our plan is to feed pasture only once the home grown silage has been fed. This corresponds with the planned exit of the cull cows from the farm. For this strategy to succeed, daily pasture growth rates of between 26-30 kgDM/day are required. Long term records of pasture growth rates at LUDF, confirm these growth rates are feasible into May.
29. Note these calculations assume that we don't have to dry cows off on the basis of light BCS (see above).
30. The use of the remaining home-grown silage through this coming week will aim to help the farm more gradually drop the average pasture cover for the coming week (with no rain, and day temperatures of around 15-20 degrees with no frosts in the 10-day forecast)
31. It is important to repeat that carrying these high average pasture covers continues to appear feasible for LUDF on our high quality tetraploid ryegrass pastures. On average diploid paddocks are less able to successfully carry these higher average pasture covers.
32. In today's walk:
 - a. Fertility patches have become more obvious than in previous weeks, making the plating of those paddocks a challenge given the difference between patch and non-patch areas in terms of DM, patches were particularly notable in paddocks S1 and S2.
 - b. No signs of pasture quality losses anywhere else were observed.
33. We are now in the last round of grazing for the farm. We have some strategies available when it comes to ensure paddocks are well cleaned up before dry-off date. We have a group of about 80 cull cows that we can use to tidy paddocks up behind the main herd as required. Also late calving good BCS cows could be used for this. Having these strategies allows us to ensure the farm is well set up to make the best of any winter growth.

Feeding Management for the coming week:

34. For the coming week our aims are to:
 - i. Keep the round to approximately 39 days and maintain the use of remaining homegrown baleage to hold this round and avoid rapid drops in average pasture cover for the next week.

- ii. Potentially reshuffle our herds to have the main herd well fed and not being pushed to hit post grazing residuals), with the culls herd coming behind them to tidy paddocks up.
- iii. Last season, April's pasture growths averaged 56 kgDM/ha/day over the whole month. Historically April seems to be a month of very variable pasture growth rates meaning we'll need to keep a close eye on rotation length, cow behaviour (intake and production) and post-grazing residuals through the coming week. The farm could still achieve some quite high growth rates with the right weather patterns.
- iv. Continue to monitor rate of drop off peak milksolids production (which continues to be remarkably stable over the last 3 weeks) as an important indicator of both feed intake as well as pasture quality.

LUDF Weekly report	29-Mar-16	5-Apr-16	12-Apr-16	19-Apr-16	26-Apr-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)	3	2	2	0	0
Culls total to date	18	20	22	22	22
Deaths (Includes cows put down)	0	0	0	0	0
Deaths total to date	12	12	12	12	12
Calved Cows available (Peak Number 560)	545	543	541	541	520
Treatment / Sick mob total	0	2	3	0	0
Mastitis clinical treatment	0	0	1	0	0
Mastitis clinical YTD (tgt below 64 yr end)	91	91	92	92	92
Bulk milk SCC (tgt Avg below 150)	169	153	201	179	183
Lame new cases	6	6	5	3	2
Lame ytd	157	163	168	171	173
Lame days YTD (Tgt below 1000 yr end)	2795	2949	3173	3294	3420
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	528	519	506	522	502
Milking once a day into vat	17	22	32	18	18
Small herd	140	138	136	136	136
Main Herd	371	381	370	370	350
MS/cow/day (Actual kg / Cows into vat only)	1.72	1.65	1.71	1.70	1.72
MS/cow to date (total kgs / Peak Cows	448	458	468	478	491
MS/ha/day (total kgs / ha used)	5.85	5.57	5.78	5.76	5.82
Herd Average Cond'n Score	0.00	0.00	4.20		
Monitor group LW kg WOW early MA calvers	504	504	500	500	
Soil Temp Avg Aquaflex	15.7	14.5	13.7	12.5	11.8
Growth Rate (kgDM/ha/day)	79	73	46	52	31
Plate meter height - ave half-cms	17.1	17.2	16.2	15.5	14.3
Ave Pasture Cover (x140 + 500)	2894	2911	2766	2671	2506
Surplus/[deficit] on feed wedge- tonnes	24	27	4	[34]	[42]
Pre Grazing cover (ave for week)	3608	3647	3861	3735	3186
Post Grazing cover (ave for week)	1650	1650	1650	1650	1650
Highest pregrazing cover	3762	3762	3937	3706	3400
Area grazed / day (ave for week)	4.76	4.81	4.57	4.06	4.15
Grazing Interval	34	33	35	39	39
Milkers Offered/grazed kg DM pasture	12.5	12.5	14.1	11.3	14.8
Estimated intake pasture MJME					
Milkers offered kg DM Grass silage	6	6	4.4	7.3	3.7
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME	220	220	220	220	220
Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)	12	12.2	12.2	12.3	
Pasture % Protein	22.7	23.1	22.6	21.7	

Pasture % DM - Concern below 16%	14.6	14.6	16.0	16.5	
Pasture % NDF Concern < 33	37.3	36.6	37.4	36.6	
Mowed pre or post grazing YTD	236.5	236.5	236.5	236.5	236.5
Total area mowed YTD	312.3	312.3	312.3	312.3	312.3
Supplements fed to date kg per cow (560 peak)	216.2	258.2	288.7	339.5	365.4
Supplements Made Kg DM / ha cumulative	964.35	964.35	964.35	964.35	964.35
Units N applied/ha and % of farm	20units / 16.8%	0	0	0	
Kgs N to Date (whole farm)	179	179	179	179	179
Rainfall (mm)	7.8	1.4	3.4	5	
Aquaflex topsoil rel. to fill point target 60 - 80%	60-80	60-80	50-70	50-70	

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.

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 19th April 2016

LUDF – focus for 2015/16 Season (as set at beginning of 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 as head towards planned cover at end of May.**
2. **Focus on using home made silage now and pushing cover through for the remainder of the autumn (while retaining pasture quality).**
3. **Watch cow BCS and dry off targets to ensure all cows meet BCS targets at calving (min 5 for MA cows and 5.5 for R3yr's)**
4. **Supplement cows with Magnesium**

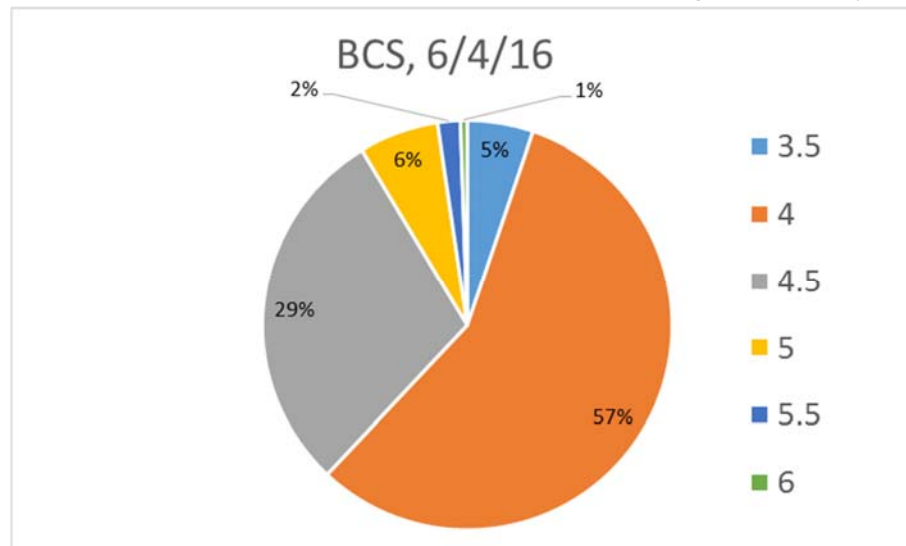
Key Numbers - week ending Tuesday 19th April 2016

Ave Past Cover	2671 kgDM/ha	Past Growth Rate	52 kgDM/ha/day
Round length	39 days (for 160 ha)	Ave Supplement used (Total year to date*)	7.3 kgDM/cow/day (340 kgDM/cow YTD)
No Cows on farm	541	Ave Soil Temp (week)	12.5 degrees
Ave Milk Production	1.70 kgMS/cow	SCC	179,000

** includes silage made on farm and 114 kgDM/cow imported supplement used in early spring*

Herd Management

1. There are currently 541 milkers on farm. 18 cows are on once-a-day milking (lames).
2. This week we had 3 new lame cows and no new case of mastitis.
3. The whole herd was body condition scored on Wednesday 6th April. The average BCS for the whole herd is 4.2 (this has been constant since the end of January). The number of cows below CS 4 has dropped from 38 to 29 over the last 4 weeks. 57% of the herd were scored at BCS 4 and 29% at BCS 4.5 resulting in 86.1% of the herd with a BCS between 4 and 5. The herd will be BCS again the 28th April.



4. The farm continues to run two herds. Since the 18/01/16, the small herd has 138 early calving cows which at the time had BCS below 4.5. These cows are slightly preferentially fed to encourage weight gains by getting the first part of each paddock and not being pushed as much to achieve target grazing residuals. The main herd has the remaining 405 later calving and heavier BCS.
5. The BCS information is used in conjunction with the dry-off rules presented below. These are used on an individual cow basis and assumes the typical time required to get cows to calving BCS targets. As LUDF has secured high quality winter grazing that will result in good CS gain over the winter, the farm is comfortable with later end of the date range for the small number of cows currently under BCS 4. A further whole herd BCS will occur on 28th April which will guide dry-off decisions.

Cows (4 years old and older)

Cow Condition	Dry off time (days before Calving)	Date cow need to be dried off (calving date 1-15 August)	Date cow need to be dried off (calving date 15-30 August)
3.5	100	20 April – 5 May	5-15 May
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4.5	60	NA	NA

Rising 3 year Old

Cow Condition	Dry off time (days before Calving)	Date cow need to be dried off (calving date 1-15 August)	Date cow need to be dried off (calving date 15-30 August)
3.5	120	1-15 April	15-30 April
4	100	20 April -5 May	5-15 May
4.5	80	10-20 May	20 -30 May
5	60	NA	NA

This strategy requires the feeding of appropriate quantities of good quality feed to the cows that are being dried off, ie - above maintenance levels.

6. 20 cull cows have been booked to leave the farm on Friday 22nd April. These cows are all low producing cows with high somatic cell counts. The rest of the cull cows are booked to leave the farm on 4th May 2016. With current high levels of milk production by all cows and the available pasture cover and home made (lower cost) silage we remain comfortable to retain the remaining empty cull cows on farm at the current milk price.
7. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
8. All 2015 born heifer replacements (total 155) have now been sent off to grazing. They were vaccinated against BVD and Leptospira on Monday the 7th March. A booster vaccination of BVD-Lepto plus a drench of Selenium was given to them on Monday the 11th of April.

Growing Conditions

9. The average 9 am soil temperature for the week dropped 1 degree from last week to reach 12.5°C. The cooler nights are starting to have an impact on the weekly average temperatures. Day temperature (maximums) have remained around 20 degrees.
10. There was 5 mm of rain over the last week
11. With the small amount of rain and longer, cooler nights the decision has been made to apply no further irrigation. Note however the soil moisture graph shows soil moisture levels are now close to the low end of the graph. This provides capacity in the soil to absorb rainfall before any drainage will occur, but means available moisture could be close to limiting pasture growth.

Figure 1: Soil temperature history for the last 2 weeks

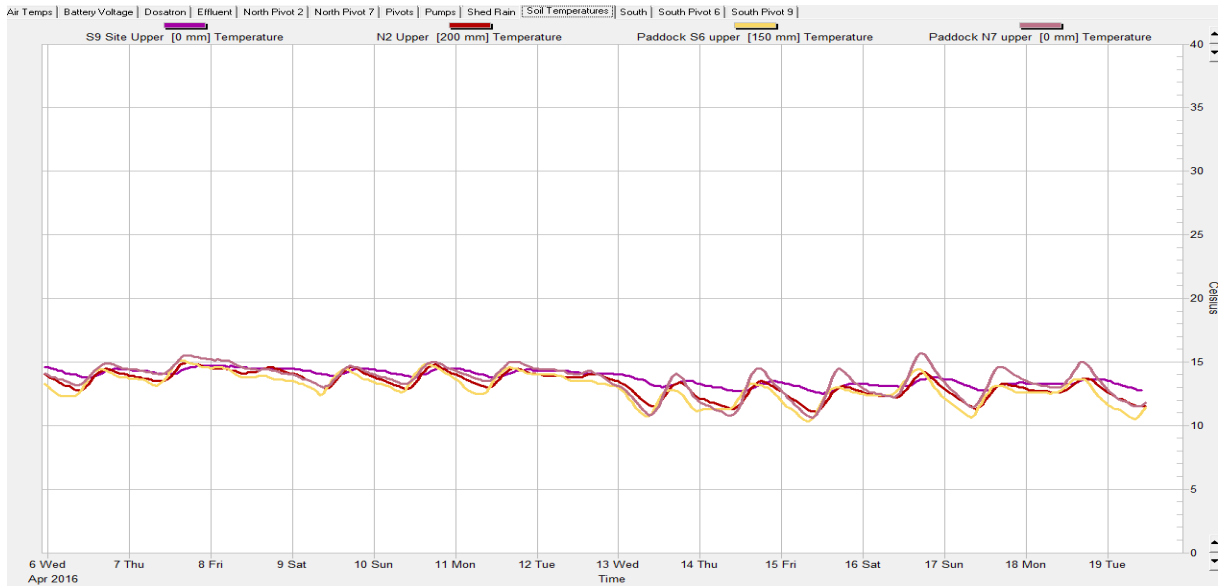
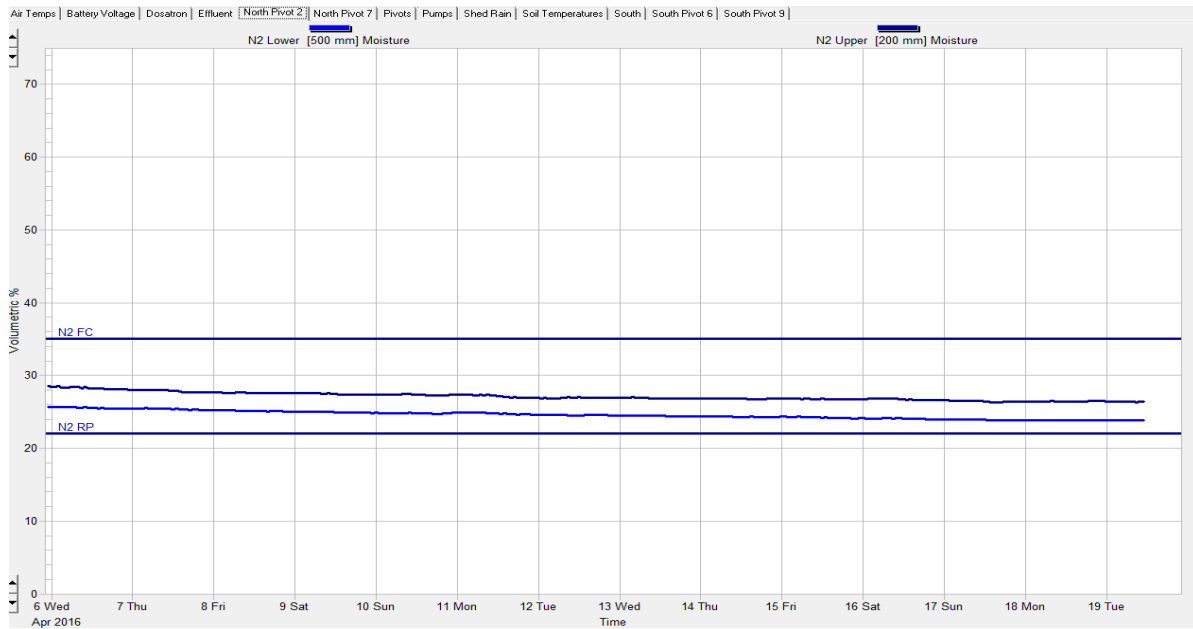


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



Nitrogen

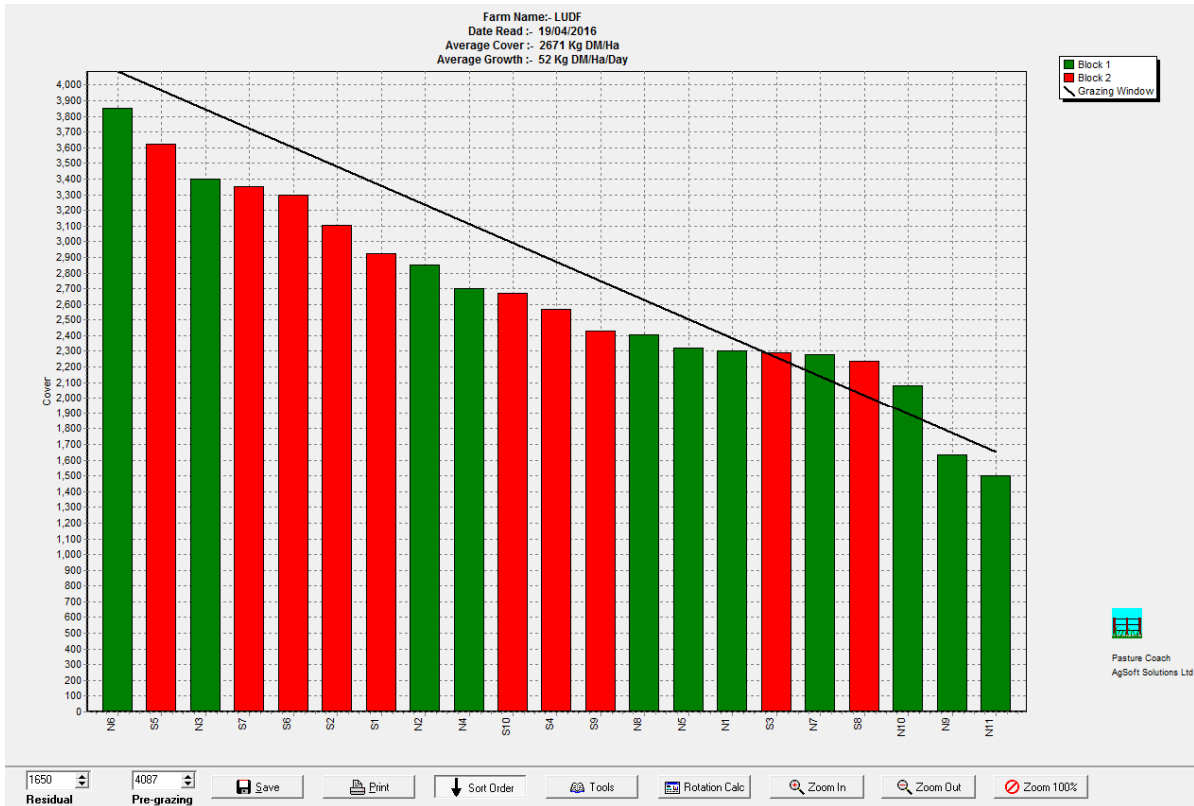
12. Nitrogen fertiliser applications have finished for this season. A total of 179 kgN/ha has been applied season-to-date. This level of nitrogen use has slightly exceeded the target for this season (170 kgN/ha/season) as per the modelled farms N losses through Overseer. The total N-leached as per Overseer model for the season still remains well below Baseline.

Pasture and Feed Management

13. Fertility patches are become a bit more obvious, particularly in paddocks S1 and S2. Whereas the use of nitrogen fertiliser would have improved inter-urine patch growth, the farm has reached its (self-imposed) N-use target and would only expect low response rates to any additional N if it was available.

14. Estimated pasture growth rates have theoretically increased a little to 52kgDM/ha/day, compared to last week's growth of 46kgDM/ha/day. Growth rates for the same week last year were 30kgDM/ha/day.
15. During the week, given the dry mild weather, steady milk production and cows achieving low and consistent postgrazing residuals, continued use of silage resulted in the round length extending out to 39 days (same round length as this time last year, 4.06 ha/day). Slowing the round generated a feed deficit that was managed by increasing the silage fed to an average of 7.3 kgDM/cow/day.

Figure 3: This week's feed wedge



16. In the feed wedge above, the demand line is based on maintaining a 39 day round with 541 cows and an intake of 18.5kgDM/cow/day. This requires a target pregrazing cover of:

$$(\text{Stocking rate} \times \text{Intake from pasture} \times \text{Rotation}) + \text{Optimum residual} = \text{Pre-grazing Cover.}$$

$$(541 \text{ cows} / 160\text{ha} \times 18.5 \text{ kgDM/cow/day} \times 39 \text{ days}) + 1650 = 4089 \text{ kgDM/ha.}$$

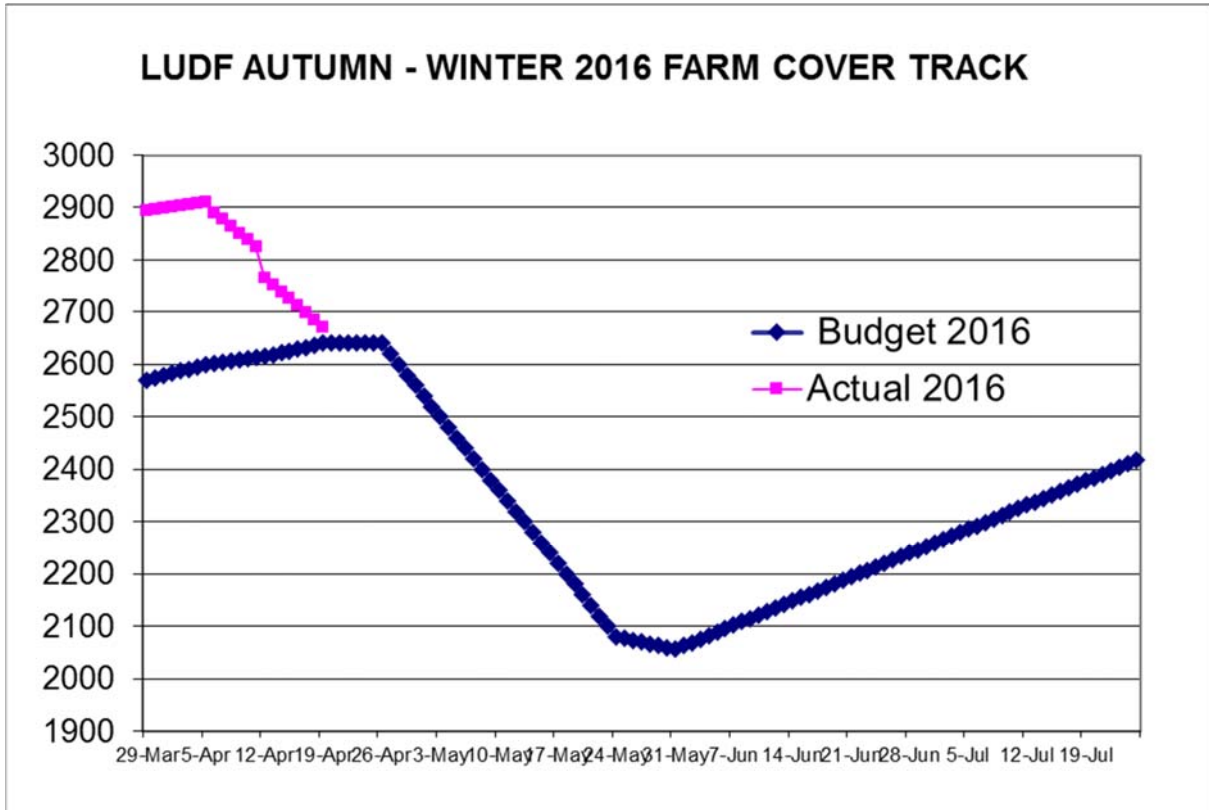
17. In this week's feed wedge the feed deficit increased to 34 tDM total (3 days grazing).
18. The Average Pasture Cover dropped from 2766kgDM/ha (last week) to 2611 kgDM/ha. This is equivalent to approx. 6.5 kgDM/cow/day.
19. The total of silage fed, plus decrease in cover, plus growth rate approximately meets the demand.

- a. Demand = 541 cows/160 ha @ 18.5kgDM/cow/day = 63 kgDM/ha/day
- b. Supply
 - i. Change in APC = $(2766 - 2611) \times 160 / 541 / 7 = 6.5 \text{ kgDM/cow/day}$
 - ii. Growth rate = 52 kgDM/cow/day
 - iii. Average silage fed = 7.3 kgDM/cow/day
 - iv. Total available = 65.8 kgDM/cow/day

20. This supports the increase in silage used through the week.
21. Year to date, silage fed per cow is 340 kgDM/cow. Of this 340kgDM of silage, only 114 kgDM/cow is silage brought in from off farm. The remainder of the silage is relatively cheaper high quality home

grown silage. Based on a pay-out of \$3.90/kgMS, the feeding of home grown silage to empty cull cows remains profitable, provided the cows don't drop from their current milk production.

22. Below is our autumn pasture cover tracker. The aim of the pasture tracker is to make sure we're on track to gradually drop average pasture cover down to our necessary target of 2050kgDM/ha at dry off in late May.
23. The pasture tracker indicates that the higher than budgeted average pasture covers on hand through March 2016 have been used to hold the higher number of cows (including culls) on farm through autumn. As well, having low cost home grown silage on hand has also allowed us to feed our cull cows in a cost effective manner. In contrast, during autumn 2015 the farm had culled most cows in early March.



24. It remains important to manage the farm in such a way that the average pasture cover doesn't drop more quickly than our tracker targets above. The increase in amount of supplement fed and the slower round length should help in achieving this through the coming week. It is important to repeat that carrying these high average pasture covers continues to appear feasible for LUDF on our high quality tetraploid ryegrass pastures. On average diploid paddocks are less able to successfully carry these higher average pasture covers.
25. In today's walk:
 - a. It was quite clear that the Shogun paddocks have started to show their cooler temperature activity, with growth rates around the 60-70kgDM/ha/day for the week.
 - b. Only in the highest cover paddocks there were signs of minor yellowing at the base in fertility patches only (more than 4 leaf stage on the ryegrass). Remaining paddocks carrying over 3000kgDM/ha all look green to the base.
26. With just over 1 grazing round left in the milking season, it is important to consider the paddocks most able to grow over the winter and avoid carrying high covers into the start of winter on these areas. This contributes to ensuring the farm is well set up for winter and the following spring.

Feeding Management for the coming week:

27. For the coming week our aims are to:

- i. Keep the round to approximately 39 days and maintain the use of baleage to hold this round and avoid rapid drops in average pasture cover for the next week.
- ii. Last season, April's pasture growths averaged 56 kgDM/ha/day over the whole month. Historically April seems to be a month of growth rates that increase and decrease weekly, changing the trends quite fast. This means keeping a close eye on rotation length and cow behaviour (intake and production) through the week. The farm could still achieve some quite high growth rates with the right weather patterns.
- iii. Continue to monitor rate of drop off peak milk solids production (which continues to be remarkably stable over the last 3 weeks) as an important indicator of both feed intake as well as pasture quality.

LUDF Weekly report	22-Mar-16	29-Mar-16	5-Apr-16	12-Apr-16	19-Apr-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)	3	3	2	2	0
Culls total to date	18	18	20	22	22
Deaths (Includes cows put down)	0	0	0	0	0
Deaths total to date	12	12	12	12	12
Calved Cows available (Peak Number 560)	545	545	543	541	541
Treatment / Sick mob total	0	0	2	3	0
Mastitis clinical treatment	0	0	0	1	0
Mastitis clinical YTD (tgt below 64 yr end)	91	91	91	92	92
Bulk milk SCC (tgt Avg below 150)	190	169	153	201	179
Lame new cases	6	6	6	5	3
Lame ytd	151	157	163	168	171
Lame days YTD (Tgt below 1000 yr end)	2676	2795	2949	3173	3294
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	528	528	519	506	522
Milking once a day into vat	17	17	22	32	18
Small herd	140	140	138	136	136
Main Herd	371	371	381	370	370
MS/cow/day (Actual kg / Cows into vat only)	1.76	1.72	1.65	1.71	1.70
MS/cow to date (total kgs / Peak Cows)	435	448	458	468	478
MS/ha/day (total kgs / ha used)	6.00	5.85	5.57	5.78	5.76
Herd Average Cond'n Score	0.00	0.00	0.00	4.20	0.00
Monitor group LW kg WOW early MA calvers	499	504	504	500	500
Soil Temp Avg Aquaflex	15.2	15.7	14.5	13.7	12.5
Growth Rate (kgDM/ha/day)	94	79	73	46	52
Plate meter height - ave half-cms	16.2	17.1	17.2	16.2	15.5
Ave Pasture Cover (x140 + 500)	2767	2894	2911	2766	2671
Surplus/[deficit] on feed wedge- tonnes	1	24	27	4	[34]
Pre Grazing cover (ave for week)	3762	3608	3647	3861	3735
Post Grazing cover (ave for week)	1650	1650	1650	1650	1650
Highest pregrazing cover	3700	3762	3762	3937	3706
Area grazed / day (ave for week)	5.26	4.76	4.81	4.57	4.06
Grazing Interval	30	34	33	35	39
Milkers Offered/grazed kg DM pasture	15.5	12.5	12.5	14.1	11.3
Estimated intake pasture MJME					
Milkers offered kg DM Grass silage	3	6	6	4.4	7.3
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME	220	220	220	220	220

Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)	11.4	12	12.2	12.2	
Pasture % Protein	22.7	22.7	23.1	22.6	
Pasture % DM - Concern below 16%	12.4	14.6	14.6	16.0	
Pasture % NDF Concern < 33	38.5	37.3	36.6	37.4	
Mowed pre or post grazing YTD	236.5	236.5	236.5	236.5	236.5
Total area mowed YTD	312.3	312.3	312.3	312.3	312.3
Supplements fed to date kg per cow (560 peak)	172.5	216.2	258.2	288.7	339.5
Supplements Made Kg DM / ha cumulative	964.35	964.35	964.35	964.35	964.35
Units N applied/ha and % of farm	20units / 20%	20units / 16.8%	0	0	0
Kgs N to Date (whole farm)	176	179	179	179	179
Rainfall (mm)	25.6	7.8	1.4	3.4	5
Aquaflex topsoil rel. to fill point target 60 - 80%	80-90	60-80	60-80	50-70	50-70

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.

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 12th April 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 as head towards planned cover at end of May
2. Monitor pasture quality with the focus on pushing cover through the remainder of the autumn (while retaining pasture quality).
3. Watch BCS and dry off targets to ensure all cows meet BCS targets at calving (min 5 for MA cows and 5.5 for R3yr's)
4. Supplement cows with Magnesium

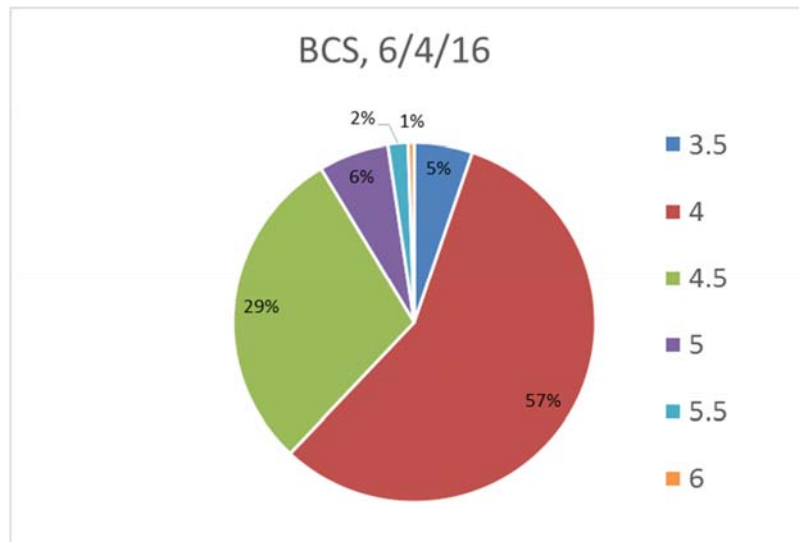
Key Numbers - week ending Tuesday 12th April 2016

Ave Past Cover	2766 kgDM/ha	Past Growth Rate	46 kgDM/ha/day
Round length	35 days (for 160 ha)	Ave Supplement used (Total year to date*)	4.45 kgDM/cow/day (288.7kgDM/cow YTD)
No Cows on farm	541	Ave Soil Temp (week)	13.5 degrees
Ave Milk Production	1.72 kgMS/cow	SCC	201,000

* includes silage made on farm and 114 kgDM/cow imported supplement used in early spring

Herd Management

1. There are currently 541 milkers on farm. 2 cows were culled and sent to the works and 32 cows are on once-a-day milking (lames).
2. This week we had 5 new lame cows and 1 new case of mastitis.
3. The whole herd was body condition scored on Wednesday 6th April. The average BCS for the whole herd is 4.2 (this has been constant since the end of January). The number of cows below CS 4 has dropped from 38 to 29 over the last 4 weeks. 57% of the herd were scored at BCS 4 and 29% at BCS 4.5 resulting in 86.1% of the herd with a BCS between 4 and 5.



4. The farm continues to run two herds. Since the 18/01/16, the small herd has 138 early calving cows which at the time had BCS below 4.5. These cows are slightly preferentially fed to encourage weight gains by getting the first part of each paddock and not being pushed as much to achieve target grazing residuals. The main herd has the remaining 405 later calving and heavier BCS.
5. The BCS information is used in conjunction with the dry-off rules presented below. These are used on an individual cow basis and the typical time required to get cows to calving targets. As LUDF has secured high quality winter grazing that will result in CS gain over the winter the farm is comfortable with later end of the date range for the small number of cows currently under BCS 4. A further whole herd BCS will occur on 28th April which will guide dry-off decisions.

Cows (4 years old and older)

Cow Condition	Dry off time (days before Calving)	Date cow need to be dried off (calving date 1-15 August)	Date cow need to be dried off (calving date 15-30 August)
3.5	100	20 April – 5 May	5-15 May
4	80	10-20 May	20 -30 May
4.5	60	NA	NA

Rising 3 year Old

Cow Condition	Dry off time (days before Calving)	Date cow need to be dried off (calving date 1-15 August)	Date cow need to be dried off (calving date 15-30 August)
3.5	120	1-15 April	15-30 April
4	100	20 April -5 May	5-15 May
4.5	80	10-20 May	20 -30 May
5	60	NA	NA

This strategy requires feeding good quality feed to the cows that are being dried off, ie - above maintenance levels.

6. Cull cows are booked to leave the farm on 4th May 2016. With current high levels of production by all cows and the available pasture cover and home made (lower cost) silage we remain comfortable to retain empty cull cows on farm at the current milk price.
7. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
8. All 2015 born heifer replacements (total 155) have now been sent off to grazing. They were vaccinated against BVD and Leptospira on Monday the 7th March. A booster vaccination of BVD-Lepto plus a drench of Selenium was given to them on Monday the 11th of April.
9. Cow live weight has dropped slightly (4kg) from last week: 506 kg/cow (Whole herd average) and 500 kg/cow (monitor group)

Growing Conditions

10. The average 9 am soil temperature for the week dropped slightly from last week to reach 13.5°C, down 1 degree from last week. The cooler nights are starting to have an impact on week-average temperatures. Day temperatures remain around 20 degrees.
11. There was 3.4 mm of rain over the last week (not counting last night's)
12. With the small amount of rain and longer, cooler nights no irrigation has been applied. However, there has been a slight drop in growth rate, which could be associated to lack of soil moisture

Figure 1: Soil temperature history for the last 2 weeks

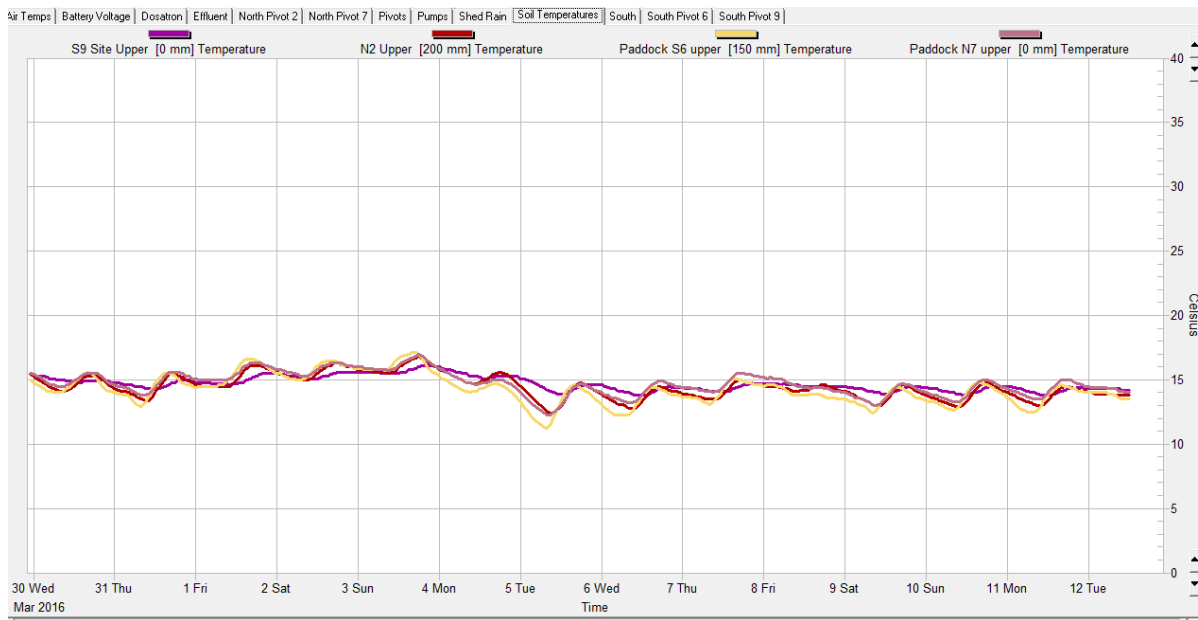
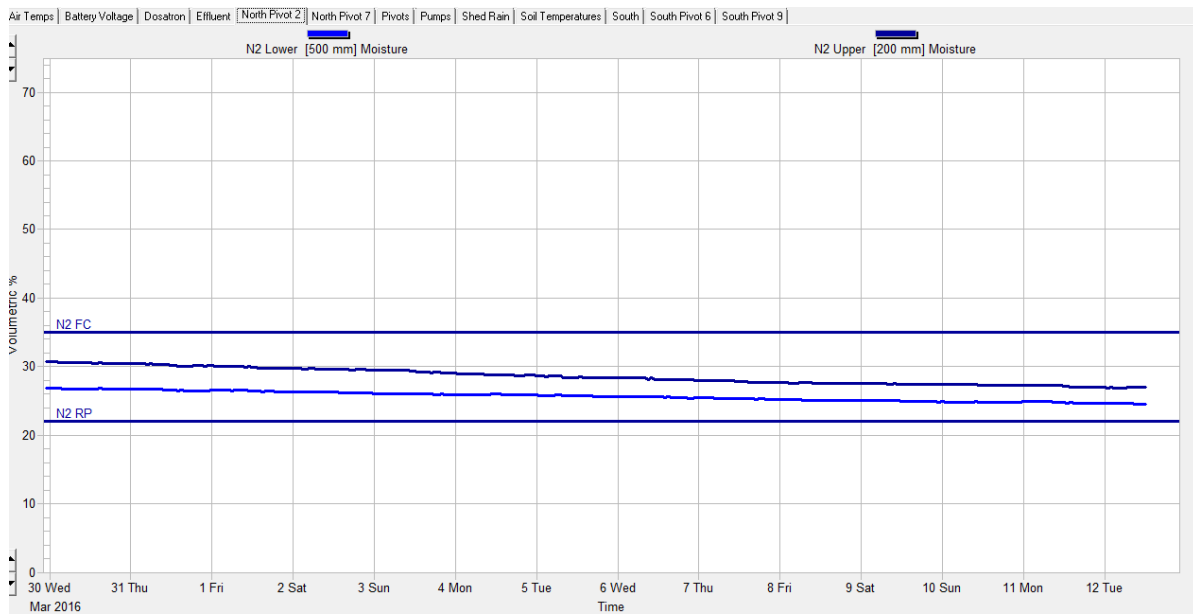


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



13. The levels of moisture in soils seem to be dropping consistently. This could mean that irrigation could be required over the next couple of days to catch up on soil moisture levels. This will be decided after checking what changes last night's rain bring to the soil moisture level graphs.

Nitrogen

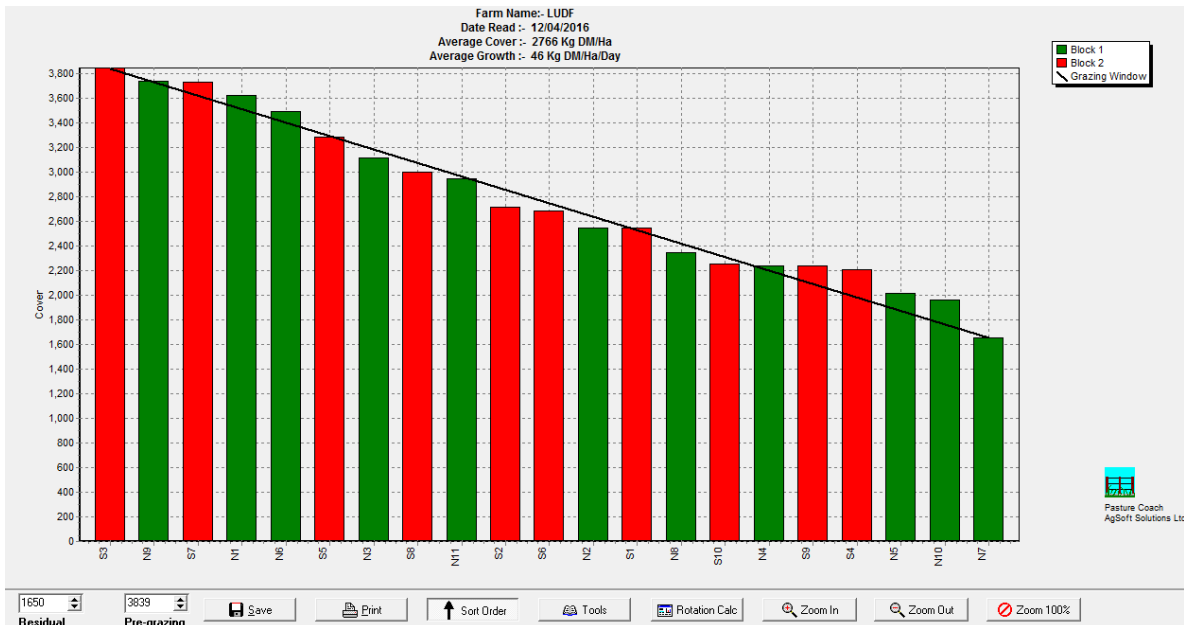
14. The nitrogen applications have now finished for this season. A total of 179 kgN/ha have been applied season-to-date. This level of nitrogen use has slightly exceeded the target for this season (170 kgN/ha/season) as per the modelled farms N losses through Overseer. The total N-leached as per Overseer model for the season still remains well below Baseline.

Pasture and Feed Management

15. There were some fertility patches observed this week in 2 paddocks of the south block.

16. Estimated pasture growth rates have dropped to 46kgDM/ha/day, compared to last weeks growth of 76kgDM/ha/day. Growth rates for the same week last year were 56kgDM/ha/day.

Figure 3: This week's feed wedge



17. Based on the full farm area of 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 35 days
- A dry matter intake of 18.5 kgDM/cow/day
- 541 cows (for the week ahead)
- A post grazing residual of 1650 kgDM/ha.

Target pregrazing cover is therefore:

$$(\text{Stocking rate} \times \text{Intake from pasture} \times \text{Rotation}) + \text{Optimum residual} = \text{Pre-grazing Cover.}$$

$$(541 \text{ cows} / 160\text{ha} \times 18.5 \text{ kgDM/cow/day} \times 35 \text{ days}) + 1650 = 3839 \text{ kgDM/ha.}$$

18. This expected per cow dry matter intake demand is based on calculations that allow for milk production, a little weight gain, maintenance requirements and distance walked. (See DairyNZ facts and figures for these details). At LUDF this remains approximately 220MJME. Feed testing last week suggests pasture quality submitted for analysis was approximately 12 MJME, therefore 220MJME requires approximately 18 kgDM / cow / day. This is equivalent to a demand of 63 kgDM/ha/day across 160 ha.

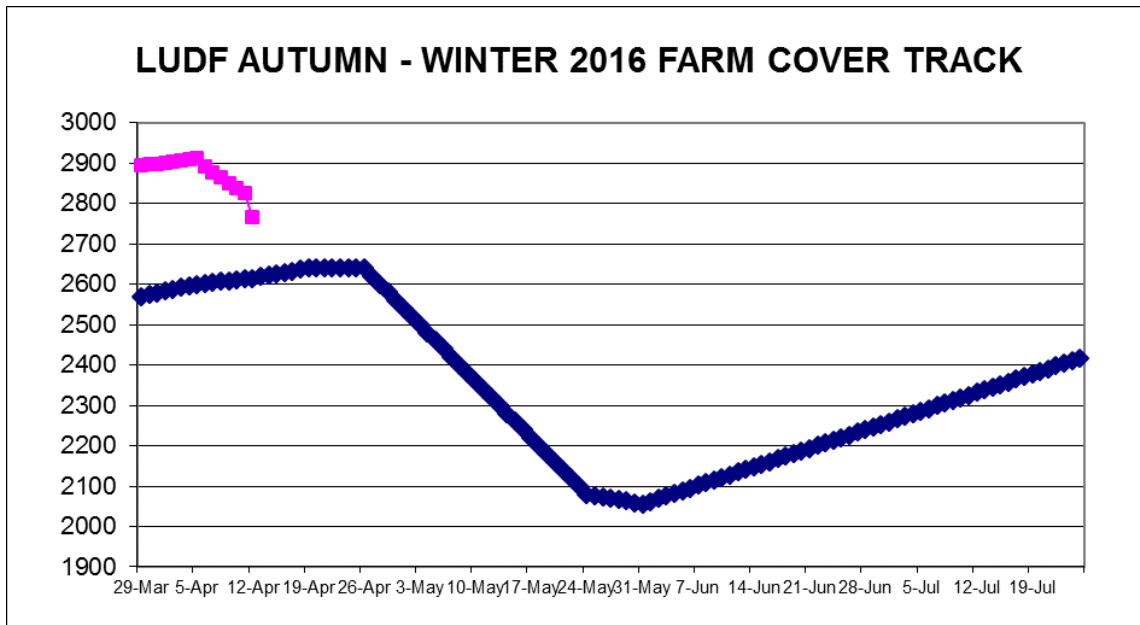
19. Our average round length this week was 35 day round for the week (4.57 ha grazed per day) over 160 effective ha of the milking platform. This is slightly longer than last week, and faster than this same time last season (42.7 days).

20. In last week's feed wedge, there was a surplus (2.5 grazing days) which meant we could have dropped the silage for a couple of days and still remain above the demand line. During the week, though, it has been necessary to feed 4.4 kgDM/cow/day to hold the 35 days round.

21. With this silage fed included in the diet, our Average Pasture Cover dropped from 2911kgDM/ha to 2766 kgDM/ha this week. This would again suggest that the plate meter is overestimating cover and growth rates.

22. It remains very important to avoid any further fast drops in average pasture cover while the whole we have the whole herd still on farm, which will be until the 4th of May (when our culls are booked to leave the farm).

23. Below is our autumn cover tracker. As can be seen, the higher than budget covers have allowed to cope with the higher number of cows on farm through this March/April period. Whereas last season, we started culling cows from the farm in early March, this season, give the home-made cheap silage we have on hand and the higher covers, we have been able to keep all stock on farm to-date.



24. This season the farm produced 275 kgDM/cow of home made silage. Of this, 174 kgDM/cow have already been fed through autumn, leaving 101 kgDM/cow left to be used. At 5 kgDM/cow/day, the home-made silage would last for another 20 days (first week in May).
25. All of the above would suggest that, given pasture growth doesn't drop dramatically due to weather, and we are able to hold our round while feeding about 5 kgDM/cow in home-made silage, we will be able to hit our target average pasture cover by early May, when our cull cows are booked to leave the farm. This would allow us to drop our demand and allow for the grazing down of the average pasture cover in a controlled manner till the end of season in late May.
26. It is important to repeat that carrying these high average pasture covers continues to appear feasible on our high quality tetraploid ryegrass pastures. In today's walk:
- It was quite clear that the Shogun paddocks have started to show their cooler temperature activity, with growths around the 60-70kgDM/ha/day for the week.
 - Only in the highest cover paddocks there were signs of minor yellowing at the base in fertility patches only (more than 4 leaf stage on the ryegrass). Remaining paddocks carrying over 3000kgDM/ha all look green to the base.
 - On average diploid paddocks are less able to successfully carry these higher average pasture covers.
27. With just over 1 round left in the milking season, it is important to start strategizing around which paddocks must be grazed by when to ensure the farm is well set up for winter and the following spring.

Feeding Management for the coming week:

28. For the coming week our aims are to:
- Keep the round to 35 days and maintain the use of baleage to hold this round and avoid severe drops in average pasture cover for the next 2 weeks.

- ii. Last season, April's pasture growths averaged 56 kgDM/ha/day over the whole month. Historically April seems to be a month of growth rates that increase and decrease weekly, changing the trends quite fast. This means keeping a close eye on rotation length and cow behaviour (intake and production) through the week. The farm could still achieve some quite high growth rates with the right weather patterns.
- iii. Continue to monitor rate of drop off peak milksolids production (which continues to be remarkably stable over the last 3 weeks) as an important indicator of both feed intake as well as pasture quality.
- iv. Not accumulate so much pasture that we lose quality in the base of higher cover paddocks before winter. As discussed previously, we continue to see the tetraploid ryegrass paddocks holding pasture quality very well at higher pasture covers compared to diploid paddocks.

LUDF Weekly report	15-Mar-16	22-Mar-16	29-Mar-16	5-Apr-16	12-Apr-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	3	3	2	2
Culls total to date	15	18	18	20	22
Deaths (Includes cows put down)	0	0	0	0	0
Deaths total to date	12	12	12	12	12
Calved Cows available (Peak Number 560)	548	545	545	543	541
Treatment / Sick mob total	2	0	0	2	3
Mastitis clinical treatment	1	0	0	0	1
Mastitis clinical YTD (tgt below 64 yr end)	91	91	91	91	92
Bulk milk SCC (tgt Avg below 150)	222	190	169	153	201
Lame new cases	4	6	6	6	5
Lame ytd	145	151	157	163	168
Lame days YTD (Tgt below 1000 yr end)	2557	2676	2795	2949	3173
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	513	528	528	519	506
Milking once a day into vat	33	17	17	22	32
Small herd	138	140	140	138	136
Main Herd	375	371	371	381	370
MS/cow/day (Actual kg / Cows into vat only)	1.76	1.76	1.72	1.65	1.71
MS/cow to date (total kgs / Peak Cows	424	435	448	458	468
MS/ha/day (total kgs / ha used)	6.01	6.00	5.85	5.57	5.78
Herd Average Cond'n Score	4.20	0.00	0.00	0.00	4.20
Monitor group LW kg WOW early MA calvers	497	499	504	504	500
Soil Temp Avg Aquaflex	14.7	15.2	15.7	14.5	13.7
Growth Rate (kgDM/ha/day)	60	94	79	73	46
Plate meter height - ave half-cms	16.1	16.2	17.1	17.2	16.2
Ave Pasture Cover (x140 + 500)	2751	2767	2894	2911	2766
Surplus/[deficit] on feed wedge- tonnes		1	24	27	4
Pre Grazing cover (ave for week)	3575	3762	3608	3647	3861
Post Grazing cover (ave for week)	1650	1650	1650	1650	1650
Highest pregrazing cover	3841	3700	3762	3762	3937
Area grazed / day (ave for week)	5.77	5.26	4.76	4.81	4.57
Grazing Interval	28	30	34	33	35
Milkers Offered/grazed kg DM pasture	18.5	18.5	18	18	18.5
Estimated intake pasture MJME					
Milkers offered kg DM Grass silage	3	3	6	6	4.4
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME	220	220	220	220	220
Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)		11.4	12	12.2	12.2
Pasture % Protein		22.7	22.7	23.1	22.6

Pasture % DM - Concern below 16%		12.4	14.6	14.6	16.0
Pasture % NDF Concern < 33		38.5	37.3	36.6	37.4
Mowed pre or post grazing YTD	236.5	236.5	236.5	236.5	236.5
Total area mowed YTD	312.3	312.3	312.3	312.3	312.3
Supplements fed to date kg per cow (560 peak)	149.3	172.5	216.2	258.2	288.7
Supplements Made Kg DM / ha cumulative	964.35	964.35	964.35	964.35	964.35
Units N applied/ha and % of farm	20units / 20%	20units / 20%	20units / 16.8%	0	0
Kgs N to Date (whole farm)	171	176	179	179	179
Rainfall (mm)	0.04	25.6	7.8	1.4	3.4
Aquaflex topsoil rel. to fill point target 60 - 80%	60-80	80-90	60-80	60-80	50-70

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.

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 5th April 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 as head towards planned cover at end of May
2. Monitor pasture quality with the focus turning to pushing cover ahead into the autumn (while retaining pasture quality).
3. Supplement cows with Magnesium

Key Numbers - week ending Tuesday 5th April 2016

Ave Past Cover	2911 kgDM/ha	Past Growth Rate	73 kgDM/ha/day
Round length	33.3 days (for 160 ha)	Ave Supplement used (Total year to date*)	6.13 kgDM/cow/day (258.2kgDM/cow YTD)
No Cows on farm	543	Ave Soil Temp (week)	14.5 degrees
Ave Milk Production	1.65 kgMS/cow	SCC	153,000

* includes silage made on farm and 114 kgDM/cow imported supplement used in early spring

Herd Management

1. There are currently 543 milkers on farm. 2 cows were culled and sent to the works and 22 cows are on once-a-day milking (lames).
2. This week we had 6 new lame cows and no new cases of mastitis.
3. The whole herd will be body condition scored again on Wednesday 6th April.
4. The farm continues to run two herds. The make-up of these herds changed on the 18/01/16 according to the BCS information from the mid-January condition scoring.
 - a. 138 early calving cows with BCS below 4.5 make up the small herd, which is preferentially fed to encourage weight gains by getting the first part of each paddock and not being pushed as much to achieve target grazing residuals
 - b. The large herd has the remainder of the cows (later calving and heavier BCS, 405 cows).
5. Empty cows and culls remain on farm and in milk at this stage. Cull cows are booked to leave the farm on 4th May 2016. With current high levels of production by all cows and the available pasture cover and home made (lower cost) silage we remain comfortable to retain empty cull cows on farm at the current milk price.
6. Magnesium is being supplemented to the milking herd as Mag Chloride in the stock water.
7. All 2015 born heifer replacements (total 155) are grazing on the East Block. Silage is now being fed to calves at 1.5kgDM/head/day to push some pasture cover forward. Calves were vaccinated against BVD and Leptospira on Monday the 7th March. A booster vaccination of BVD-Lepto plus a drench of Selenium will be given to them on Monday the 11th of April. They will be weighed at the same time and be sent off grazing afterwards.
8. The incalf R2 heifers were leptovaccinated, blood samples were collected to check for BVD, Neospora and Selenium status. While heifers were clear of BVD and Neospora, Selenium levels were low so we have treated them with a Selenium injection last week to hold Selenium status up until calving.

9. Bloods were collected for the same tests two weeks ago from empty MA in milk cows that had been scanned as in calf early but have now lost their pregnancies. Tests were clear for BVD and Neospora, and Selenium levels were adequate for in milk cows.
10. Cow live weight has remained the same from last week: 510 kg/cow (Whole herd average) and 504 kg/cow (monitor group)

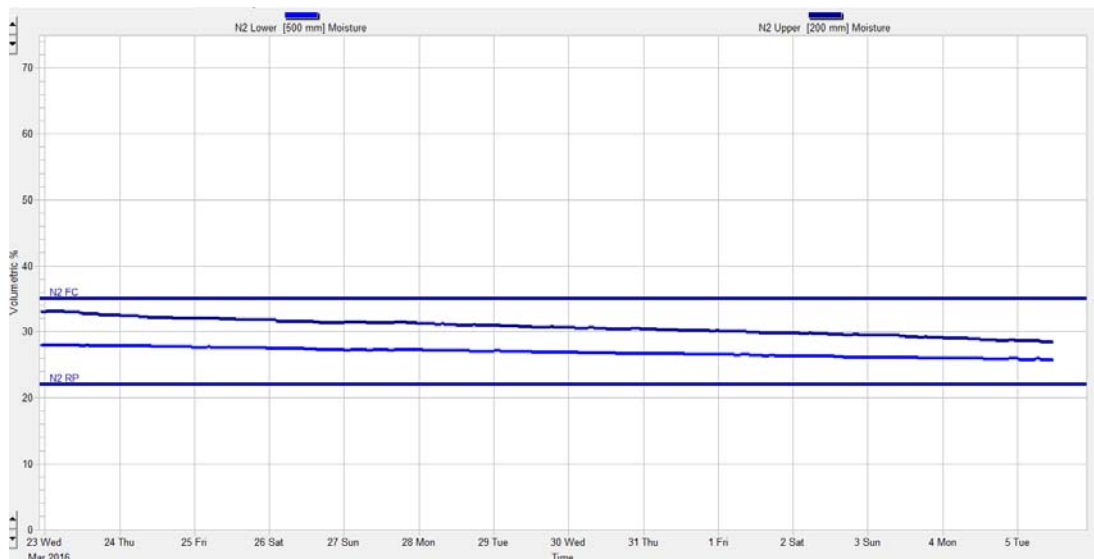
Growing Conditions

11. The average 9 am soil temperature for the week dropped slightly from last week to reach 14.5°C, down 1.2 degrees from last week. The cooler nights are starting to have an impact on week-average temperatures. The higher day temperatures (around and sometimes above 20 degrees) are still promoting good growth rates of pastures over the last week.
12. There was 1.4 mm of rain over the last week.
13. With the small amount of rain and longer, cooler nights no irrigation has been required over the last 7 days.

Figure 1: Soil temperature history for the last 2 weeks



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



14. The levels of moisture in soils seem to be dropping consistently. However, with the morning dew and the high covers, the soils does not look dry and pasture growths don't seem to be suffering. Not irrigating at this stage also helps in case there is a significant rainfall event during autumn. At this stage there is no plans to engage irrigation again, however, we will remain vigilant of the moisture level meters.

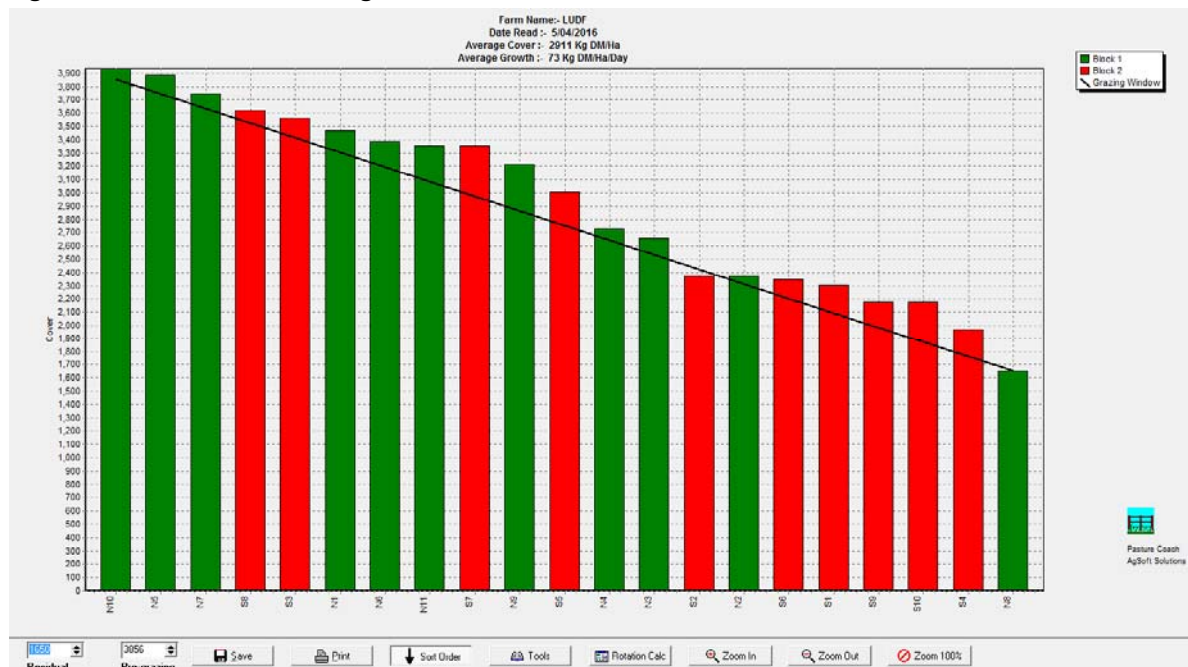
Nitrogen

15. The nitrogen applications have now finished for this season. A total of 179 kgN/ha have been applied season-to-date. This level of nitrogen use has slightly exceeded the target for this season (170 kgN/ha/season) as per the modelled farms N losses through Overseer. The total N-leached as per Overseer model for the season still remains well below Baseline.
16. The strategic decision to use Nitrogen until now has helped the farm increase covers while still getting good responses. This has helped with pushing the round length out and set the farm covers up for the rest of autumn and winter.

Pasture and Feed Management

17. There were only minimal fertility patches observed this week.
18. Estimated pasture growth rates have dropped to 73kgDM/ha/day, compared to last weeks growth of 79kgDM/ha/day. Growth rates for the same week last year were 60kgDM/ha/day.

Figure 3: This week's feed wedge



19. Based on the full farm area of 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 35 days
 - A dry matter intake of 18.5 kgDM/cow/day
 - 545 cows (for the week ahead)
 - A post grazing residual of 1650 kgDM/ha.

Target pregrazing cover is therefore:

$$(\text{Stocking rate} \times \text{Intake from pasture} \times \text{Rotation}) + \text{Optimum residual} = \text{Pre-grazing Cover.}$$

$(545 \text{ cows} / 160\text{ha} \times 18.5 \text{ kgDM/cow/day} \times 35 \text{ days}) + 1650 = 3855 \text{ kgDM/ha}$.

20. This expected per cow dry matter intake demand is based on calculations that allow for milk production, a little weight gain, maintenance requirements and distance walked. (See DairyNZ facts and figures for these details). At LUDF this remains approximately 220MJME. Feed testing last week suggests pasture quality submitted for analysis was approximately 12 MJME, therefore 220MJME requires approximately 18 kgDM / cow / day. This is equivalent to a demand of 63 kgDM/ha/day across 160 ha.
21. Our average round length this week was 33.3 day round for the week (4.81 ha grazed per day) over 160 effective ha of the milking platform. This is slightly shorter than last week, and slightly faster than this same time last season (35.7 days).
22. In last week's feed wedge, there was a clear deficit to be covered through the week. This has been achieved by feeding 6 kgDM/ cow silage for the whole 7 days.
23. This week's feed wedge shows that the temporary feed deficit has now been covered by the accumulation of pasture on farm which currently shows an average pasture cover of 2911 kgDM/ha (Our APC has moved from 2767 kgDM/ha (on 22/03/2016) to 2894 kgDM/ha (on 29/03/2016) and to 2911 kgDM/ha at today's walk).
24. Pasture coach estimates a current feed surplus of about 27 TDM (about 2.5 days grazing). This surplus that is now built should allow LUDF to reduce or drop the supplement and still remain at a 35 day-round.
25. It is important to note that given the pasture growth achieved in the last 3 weeks, the process of accumulating this pasture should have been faster (demand has remained about 64-63 kgDM/ha/day and pasture growth rates have been 94 kgDM/ha/day; 79 kgDM/ha/day and 73 kgDM/ha/day for the past 3 weeks respectively). This would suggest that the plate meter continues to overestimate our cover (and growth rates), hence any estimated surplus could be lower than reported by Pasture Coach.
26. Carrying these high average pasture covers continues to appear feasible on our high quality tetraploid ryegrass pastures. In today's walk:
 - a. It was quite clear that the Shogun paddocks have started to show their cooler temperature activity, with growths around the 100kgDM/ha/day for the week.
 - b. Only in the highest cover paddocks there were signs of minor yellowing at the base in fertility patches only (more than 4 leaf stage on the ryegrass). Remaining paddocks carrying over 3000kgDM/ha all look green to the base.
 - c. On average diploid paddocks are less able to successfully carry these higher average pasture covers.
27. Pasture Quality:
 - a. Cooler night temperatures are continuing to help us maintain good pasture quality with almost no stem and seedhead present on the ryegrass and plantain remaining.
 - b. Pasture quality tests have shown an increase in the ME levels to around 12.2 MJME/kgDM
28. With just under 2 rounds left in the milking season, it is important to start strategizing around which paddocks must be grazed by when to ensure the farm is well set up for winter and the following spring.

Feeding Management for the coming week:

29. For the coming week our aims are to:
 - i. Keep the round to 35 days enabling the previously applied Nitrogen fertiliser to help build pasture cover, while soil temperatures are still high enough to have reasonable growth rates.
 - ii. Maintain the use of baleage only if required to hold 35-day round.

- iii. Historically April seems to be a month of growth rates that increase and decrease weekly, changing the trends quite fast. This means keeping a close eye on rotation length and cow behaviour (intake and production) through the week. The farm could still achieve some quite high growth rates (as have occurred historically) with the right weather patterns.
- iv. Continue to monitor rate of drop off peak milksolids production (which continues to be remarkably stable over the last 3 weeks) as an important indicator of both feed intake as well as pasture quality.
- v. Not accumulate so much pasture that we lose quality in the base of higher cover paddocks before winter. As discussed previously, we continue to see the tetraploid ryegrass paddocks holding pasture quality very well at higher pasture covers compared to diploid paddocks.

LUDF Weekly report	8-Mar-16	15-Mar-16	22-Mar-16	29-Mar-16	5-Apr-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	3	3	2
Culls total to date	15	15	18	18	20
Deaths (Includes cows put down)	0	0	0	0	0
Deaths total to date	12	12	12	12	12
Calved Cows available (Peak Number 560)	548	548	545	545	543
Treatment / Sick mob total	0	2	0	0	2
Mastitis clinical treatment	0	1	0	0	0
Mastitis clinical YTD (tgt below 64 yr end)	90	91	91	91	91
Bulk milk SCC (tgt Avg below 150)	208	222	190	169	153
Lame new cases	10	4	6	6	6
Lame ytd	141	145	151	157	163
Lame days YTD (Tgt below 1000 yr end)	2326	2557	2676	2795	2949
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	515	513	528	528	519
Milking once a day into vat	33	33	17	17	22
Small herd	138	138	140	140	138
Main Herd	377	375	371	371	381
MS/cow/day (Actual kg / Cows into vat only)	1.75	1.76	1.76	1.72	1.65
MS/cow to date (total kgs / Peak Cows)	410	424	435	448	458
MS/ha/day (total kgs / ha used)	5.98	6.01	6.00	5.85	5.57
Herd Average Cond'n Score	0.00	4.20	0.00	0.00	0.00
Monitor group LW kg WOW early MA calvers	493	497	499	504	504
Soil Temp Avg Aquaflex	16.0	14.7	15.2	15.7	14.5
Growth Rate (kgDM/ha/day)	89	60	94	79	73
Plate meter height - ave half-cms	16.1	16.1	16.2	17.1	17.2
Ave Pasture Cover (x140 + 500)	2751	2751	2767	2894	2911
Surplus/[deficit] on feed wedge- tonnes	33		1	24	27
Pre Grazing cover (ave for week)	0	3575	3762	3608	3647
Post Grazing cover (ave for week)	1650	1650	1650	1650	1650
Highest pregrazing cover	3552	3841	3700	3762	3762
Area grazed / day (ave for week)	5.69	5.77	5.26	4.76	4.81
Grazing Interval	28	28	30	34	33
Milkers Offered/grazed kg DM pasture	18.5	18.5	18.5	18	18
Estimated intake pasture MJME	220				
Milkers offered kg DM Grass silage		3	3	6	6
Silage MJME/cow offered					
Estimated intake Silage MJME					
Estimated total intake MJME	220	220	220	220	220
Target MJME Offered/eaten (includes 6% waste)					
Pasture ME (pre grazing sample)	11.8		11.4	12	12.2
Pasture % Protein	18.8		22.7	22.7	23.1
Pasture % DM - Concern below 16%	15.5		12.4	14.6	14.6

Pasture % NDF Concern < 33	39.6		38.5	37.3	36.6
Mowed pre or post grazing YTD	236.5	236.5	236.5	236.5	236.5
Total area mowed YTD	312.3	312.3	312.3	312.3	312.3
Supplements fed to date kg per cow (560 peak)	129.9	149.3	172.5	216.2	258.2
Supplements Made Kg DM / ha cumulative	964.35	964.35	964.35	964.35	964.35
Units N applied/ha and % of farm	25units / 35.2%	20units / 20%	20units / 20%	20units / 16.8%	0
Kgs N to Date (whole farm)	167	171	176	179	179
Rainfall (mm)	0	0.04	25.6	7.8	1.4
Aquaflex topsoil rel. to fill point target 60 - 80%	50-70	60-80	80-90	60-80	60-80

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.