

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 3 November 2015

LUDF – focus for 2015/16 Season: Nil-Infrastructure, low input, low N-loss, maximise profit.
Farm system comprises 3.5 cows/ha (peak milked), 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.

Critical issues for the short term

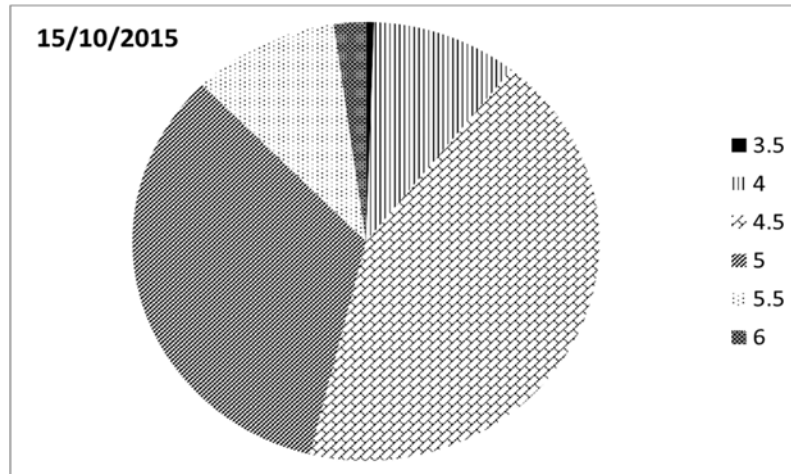
1. Monitor average pasture cover on the milking platform
2. Monitor pasture quality coming through the current grazing to ensure good quality and quantity intakes as mating proceeds (started 25th Oct for milking herd).
3. Make appropriate and timely decisions with regard to mowing or areas out for silage
4. Supplement cows with Magnesium
5. First herd test was done on Thursday 22nd October 2015

Key Numbers - week ending Tuesday 3rd November 2015

Ave Past Cover	2778kgDM/ha	Past Growth Rate	96 kgDM/ha/day
Round length	25.3 days	Ave Supplement used	0 kgDM/cow/day
No Cows on farm	555 (553 milking into the vat)	Ave Soil Temp (week)	11.9 degrees
Ave Milk Production	2.35 kgMS/cow	SCC	153,000

Herd Management

1. There are currently 555 milkers on farm.
2. This week we had 2 new lames.
3. Two herds are being run with 139 cows in the small herd (heifers and lighter cows) and 411 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 as they progress through the first round of mating.
4. Cows in milk were BCS on 15th October 2015. The average BCS for the herd is 4.7. This is a small drop in average BCS from an average of 4.9 one month ago. See graph below for the distribution of condition scores. We are very pleased to see more than ¾ of the herd at a condition score of 4.5 or better. Cows will be BCS scored again in mid November 2015.



5. Magnesium is being supplemented to the calved cows as Mag Chloride in the stock water.
6. All heifer replacements (total 158) are now outside (grazing on the East Block).
7. Another 26 replacement heifers have now been weaned off milk (target weight 80 Kg) these are now on grass and ad- lib meal. Only 19 calves are now left on milk awaiting weaning.

Mating

8. On 10th September, all cows calved at least 10 days were Metrichecked. 24 cows were treated (5% of cows presented to Metricheck).
9. A second Metricheck was done on 12th October 2015 and only one cow of the entire was found to require treatment.
10. 43 non cycling cows (calved 42 days ago or longer) were palpated by the Vet for ovarian activity on Wednesday 28th October 2015. Based on these palpation results, it was decided to not proceed with any intervention (PG or CIDRs) as veterinary opinion was that there appeared to be sufficient ovarian activity present in palpated cows.
11. Mating for the in milk cows started on 25th October 2015
 - a. 222 cows have been mated since PSM (25th October). This is 22.2 cows/day (compared with a target of 23.8 cows/day or 4.29% of eligible cows/day to reach 90% of cows submitted by the end of the first round of AI).
If we continue at this slightly lower daily submission rate, we would have submitted 84% of the herd during the first 3 weeks of mating (lower than our target of 90%).
12. **Mating Plan: Milking herd.**
 - a. 6 weeks AB will be followed by 4 weeks of bulls (the same jersey bulls as are working with the 15 month old heifers now)
 - b. Cows F8 to F16 are being mated to Kiwi Cross proven sire (Daughter proven team)
 - c. Cows F0 to F7 are being mated to Holstein sire (Friesian daughter proven team)
 - d. 12 potential culls cows have been identified and are being mated to Hereford
13. **Mating of 15 Month Old heifers**
 - a. Heifers are currently away grazing at Hororata.
 - b. On Thursday 17th September, R2yr heifers received Selenium injection and Copper bullet plus BVD vaccination and pour on drench.
 - c. Bulls were visually checked pre-mating including measuring scrotum size. All bulls were tested and confirmed BVD negative.
 - d. 8 R2 Jersey Bulls went out with 126 15 Month old heifers on Friday 9th October. The bulls were replaced with a further 8 R2 Jersey Bulls on Thursday 15th October and bulls will continue to be rotated every 6-7 days.

Growing Conditions

14. The average 9 am soil temperature for the week was 11.9 degrees (0.8 degrees higher than last week).
15. Both the North and South blocks received 3 days irrigation from the pivots, making the best of the 8.2 ml of rainfall we had during the week. Corner sprinklers and K line have been running every day and will continue to run to maintain soil moisture levels,
16. There has been 8.2 ml of rain this week.

Figure 1: Soil temperature history for the last 2 weeks

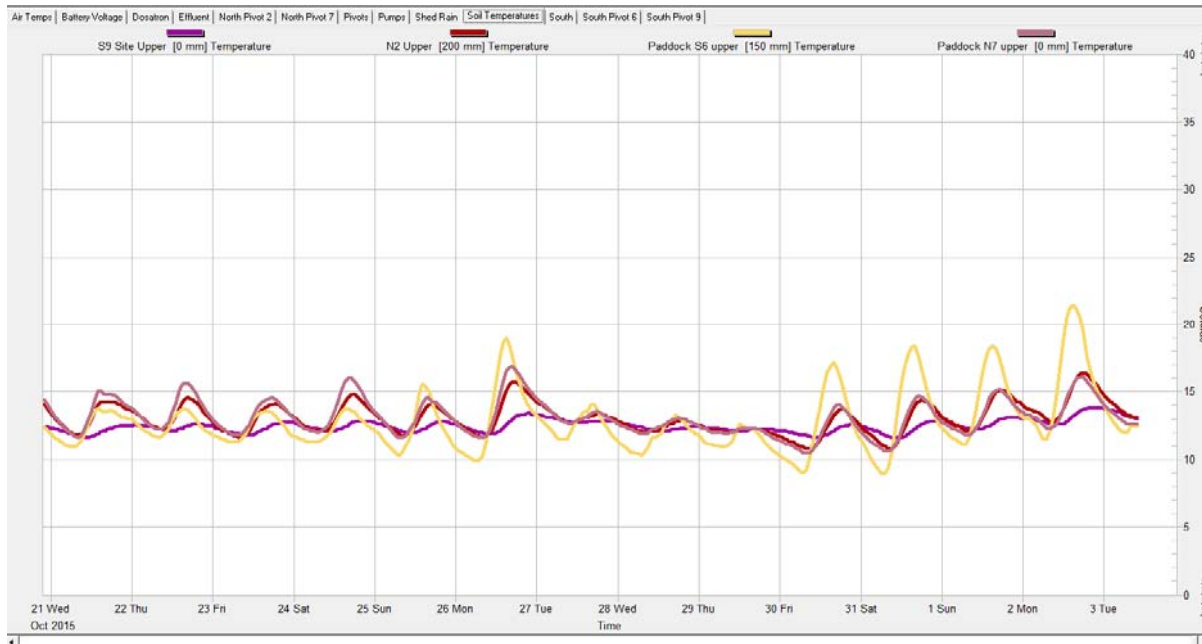
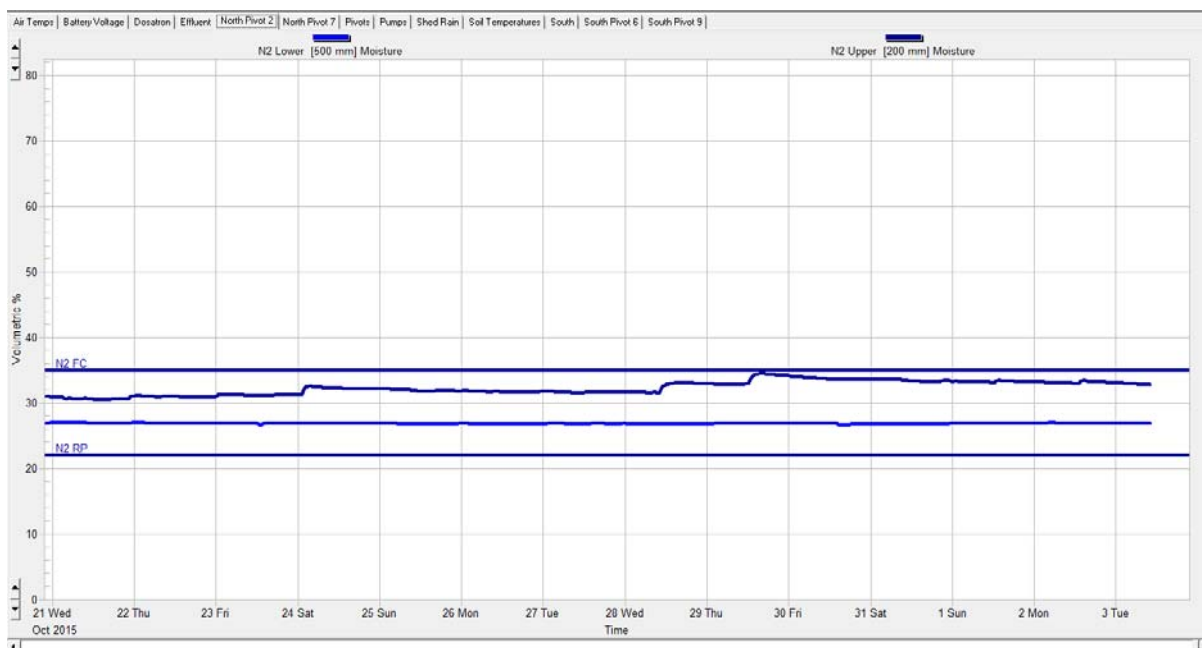


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



Nitrogen

17. 30 ha have received Urea (rate: 25 kgN/ha) this week. Cumulative use of N season to date is 62kgN/ha.

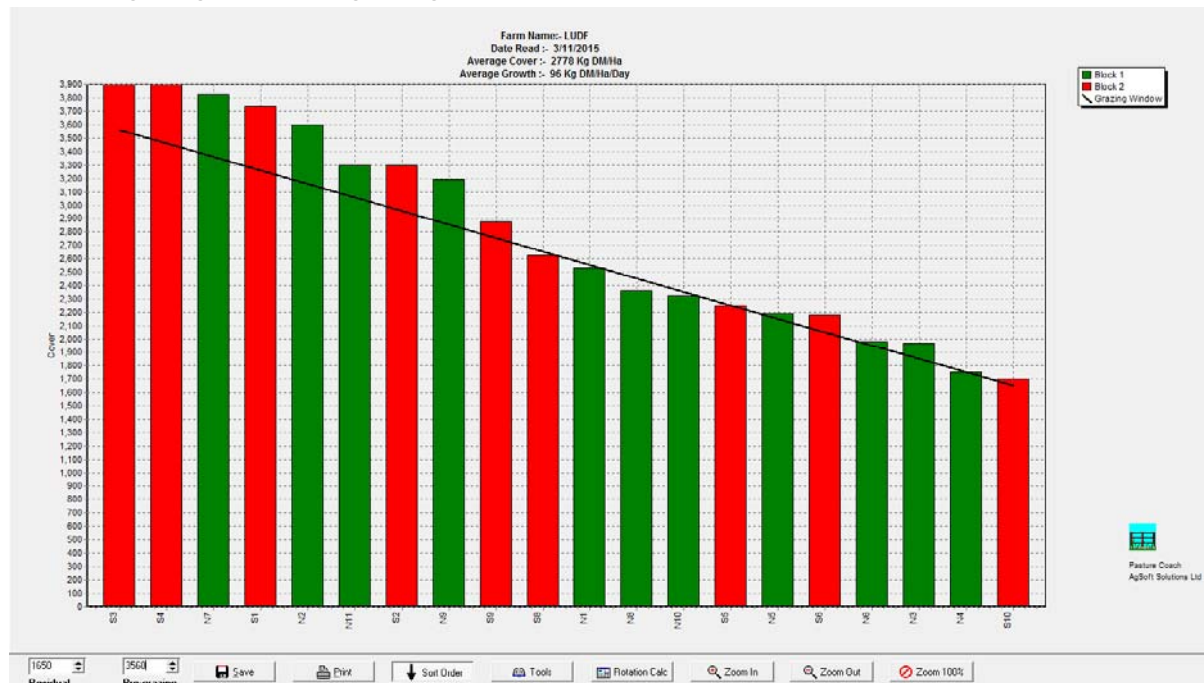
Phosphate

18. Due to the forecast payout we are only targeting application of phosphate to paddocks with low Olsen P values (less than 30 to 34). Based on this, 7 paddocks have now received Superphosphate at a rate of 500 kg /Ha.
19. Ongoing maintenance superphosphate will be reviewed again based on dairy payout and superphosphate pricing later in the season.

Pasture and Feed Management

20. The milkers continue to be fed only pasture.
21. Some pastures are now showing some signs of ryegrass flowering (increasing stem development in the base of the sward). This could mean that our plate meter could be over estimating paddock covers (see further discussion below).
22. Pasture quality remains acceptable to the base of the sward (all green with no dead matter at the bottom). However within clumping fertility patch areas, there is some yellowing at the base. As well, some seed head is now emerging within fertility patches in some paddocks. We will continue to monitor seed head development and pasture quality. Our latest feed test results (see table at end of report) from late October show that MJME and crude protein levels have fallen slightly over the last week, as well as NDF levels increasing. We're noticing a 'hardening off' of pasture under our feet during this weeks farm walk.
23. 30.4 ha have been mown in front of the cows (out of 42.3 ha grazed this week) to help with maintaining good quality pasture regrowth in the next grazing round. Utilisation of the mown pasture appears at this stage to be very good.
24. Paddock S7 (area 7.6 ha) has been dropped out of the grazing rotation last week for regrassing. It has been sprayed and harvested for silage but not yet cultivated. This leaves us 152.4 ha available for the grazing by the milking herd.
25. Average demand for the past week across the milking platform has been approximately 76 kgDM/ha/day, based on an average of 555 calved cows on the 152.4 ha available over the last week, and cows offered pasture at 21 kgDM/cow /day (see below).
 - a. Although estimated pasture growth rate was 96kgDM/ha/day for the week and demand is approx. 76 kg DM/ha/day, APC has only increased by a minimal amount, as last week's APC included S7 which has subsequently been harvested for silage and removed from the grazing round for pasture renovation.
 - b. Total herd feed demand is expected to be stable as all cows have calved and cows are producing 2.35 kgMS/cow/day (a small drop from the previous 2.45-2.47 kgMS/cow/day over the last 7 weeks) Based on this reduced area, our demand line in the feed wedge is calculated using a target rotation length of 25 days, an intake of 21kgDM/cow/day (slight increase from last week to account for the slightly lower pasture quality), 555 cows (for the week ahead) and a post grazing residual of 1650 kgDM/ha. Target pregrazing cover is therefore:
$$(\text{Stocking rate} \times \textit{Intake from pasture} \times \text{Rotation}) + \text{Optimum residual} = \text{Pre-grazing Cover.}$$
$$(555 \text{ cows} / 152.4\text{ha} \times 21 \text{ kgDM/cow/day} \times 25 \text{ days}) + 1650 = 3560\text{kgDM/ha.}$$
26. This expected dry matter intake 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. 250-260MJME. Recent feed testing suggests pasture is approximately 12.1MJME, therefore 260MJME requires approximately 20.5 – 21.5 kgDM/cow/day.

Figure 3: This week's feed wedge – Note that this wedge does not include paddock S7 that is currently out of the grazing round for regassing:



27. The feed wedge demonstrates a small surplus of 25tDM across 152.4ha at present.
28. The cover on the top paddock on the high end of the wedge is around 4000 kgDM/ha. This is above the targeted 3560kgDM/ha however cows are continuing to clean up pasture offered well – making us suspect that there is not quite as much pasture on offer as what the rising plate meter is telling us.
29. Considering:
 - a. The low DM% obtained from the pasture tests this week (12.5%),
 - b. The fact that at this time of year the seed head starts coming through the stems, hence holding the plate meter higher than earlier in the grazing round,
 - c. The fact that most (over 80%) of the paddocks are tetraploid ryegrasses, which under our current grazing management appear to hold quality better at higher pre-grazing covers than paddocks containing 100% diploid ryegrasses
30. It remains possible that kgDM/ha assessments from the plate meter are measuring more feed in front of cows than what the cows are finding.
31. We will continue to monitor cow behaviour (how settled they are from their daily allocation of pasture) as well as post-grazing residuals and round length to provide us with feedback as to the likely accuracy of the pre-grazing pasture covers as measured by the rising plate meter.

Feeding Management for the coming week

32. Given all of the above, the key decisions for the week ahead:
 - a. We will continue to hold a 25 day round (6.1 Ha/day or 42.6ha /week) across 152.4 ha. This will be continuously re-evaluated according to what the weather brings.
 - b. Mowing will continue this week as required to ensure targeted intake of pasture occurs in a timely basis and residuals are maintained to ensure high pasture quality next grazing round. This seems to have worked well this week by allowing us to keep the round at 25.3 days (target was 25).
 - c. Monitoring cow behaviour and how long it takes them to eat the allocated area will be key this week. If cows do take too long to clean up the 6.1 ha allocated to them daily, then there

may be a decision made to skip a paddock and harvest it for silage. Silage harvest opportunities will be reassessed during the week if required or again at next Tuesdays farm walk.

LUDF Weekly report	6-Oct-15	13-Oct-15	20-Oct-15	27-Oct-15	3-Nov-15
Farm grazing ha (available to milkers)	160	160	160	160	152.4
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	1	1	1	0
Culls total to date	9	10	11	11	11
Deaths (Includes cows put down)	1	3	0	0	0
Deaths total to date	6	9	9	9	9
Calved Cows available (Peak Number 560)	550	555	555	555	555
Treatment / Sick mob total	4	5	3	5	0
Mastitis clinical treatment	3	4	0	5	0
Mastitis clinical YTD (tgt below 64 yr end)	53	57	57	62	62
Bulk milk SCC (tgt Avg below 150)	158	219	197	190	153
Lame new cases	0	0	0	2	2
Lame ytd	15	15	15	15	15
Lame days YTD (Tgt below 1000 yr end)	30	30	30	32	32
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	539	545	552	549	550
Milking once a day into vat	0	0	0	2	5
Small herd	141	139	139	139	139
Main Herd	398	406	413	412	411
MS/cow/day (Actual kg / Cows into vat only)	2.45	2.42	2.47	2.44	2.35
MS/cow to date (total kgs / Peak Cows)	94	111	128	144	161
MS/ha/day (total kgs / ha used)	8.07	8.23	8.43	8.40	8.12
Herd Average Cond'n Score	0.00	0.00	4.7	0.00	0.00
Monitor group LW kg WOW early MA calvers	478	480	479	485	480
Soil Temp Avg Aquaflex	10.4	11.0	11.4	11.1	11.9
Growth Rate (kgDM/ha/day)	70	56	91	0	96
Plate meter height - ave half-cms	15.1	14.3	15.5	0.0	16.3
Ave Pasture Cover (x140 + 500)	2610	2496	2673	2763	2778
Surplus/[deficit] on feed wedge- tonnes	0	0	23	14	25
Pre Grazing cover (ave for week)	3300	3476	3368	3433	3504
Post Grazing cover (ave for week)	1650	1650	1650	1600	1600
Highest pregrazing cover	3590	3680	3620	3576	3582
Area grazed / day (ave for week)	5.61	5.60	5.38	6.05	6.03
Grazing Interval	29	29	30	26	25
Milkers Offered/grazed kg DM pasture	0.0	0.0	0.0	0.0	0.0
Estimated intake pasture MJME	0	0	0	0	0
Milkers offered kg DM Grass silage	0	0	0	0	0
Silage MJME/cow offered	0	0	0	0	0
Estimated intake Silage MJME	0	0	0	0	0
Estimated total intake MJME	0	0	0	0	0
Target MJME Offered/eaten (includes 6% waste)	0	0	0	0	0
Pasture ME (pre grazing sample)	12.4	0.0	12.1	0.0	12.0
Pasture % Protein	21.9	0.0	20.3	0.0	16.6
Pasture % DM - Concern below 16%	16.3	0.0	16.4	0.0	12.5
Pasture % NDF Concern < 33	36.6	0.0	36.9	0.0	38.8
Mowed pre or post grazing YTD	0.0	0.0	0.0	0.0	69.2
Total area mowed YTD	0.0	0.0	0.0	0.0	76.8
Supplements fed to date kg per cow (560 peak)	93.3	93.3	93.3	93.3	93.3
Supplements Made Kg DM / ha cumulative	0	0	0	0	100.6
Units N applied/ha and % of farm	25units/24.5%	25units/25.6%	25units/19.1%	25units/23%	25units/18.7%

Kgs N to Date (whole farm)	39	45	51	56	62
Rainfall (mm)	0	0	0	0.6	8.2
Aquaflex topsoil rel. to fill point target 60 - 80%	70-100	50-70	50-70	60-80	60-80

Pasture walks are on a weekly basis 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.