

Lincoln University Dairy Farm - Farm Walk notes

Tuesday 1 December 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 we continue through mating.**
3. **Make appropriate and timely decisions with regard to mowing or areas out for silage**
4. **Supplement cows with Magnesium**
5. **Mating started on Sunday 25th October 2015 for the milking herd**

Key Numbers - week ending Tuesday 1st December 2015

Ave Past Cover	2485kgDM/ha	Past Growth Rate	78 kgDM/ha/day
Round length	23 days	Ave Supplement used	0 kgDM/cow/day
No Cows on farm	554 (548 milking into the vat)	Ave Soil Temp (week)	15.3 degrees
Ave Milk Production	2.17 kgMS/cow	SCC	186,000

Herd Management

1. There are currently 554 milkers on farm. 6 are in the sick mob
2. This week we had 6 new lame cows and 2 new mastitis cows
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 second round of mating.
4. Milk production has declined by a total of 7.8% over the past 4 weeks, from 2.35kgMS/cow to 2.17kgMS/cow (approx. 2% per week).
5. Cows were BCS scored on the 12th November. The average BCS was 4.5, 0.2 BC scores below last month
The trend of BCS change is the same as last year, but this years averages are 0.2 BCS above last year.
6. The next herd test is booked for the 10th December.
7. Magnesium is being supplemented to the calved cows as Mag Chloride in the stock water.
8. All heifer replacements (total 158) are now outside (grazing on the East Block).
9. Only 19 calves are now left on milk awaiting weaning.

Mating

10. Mating for the in milk cows started on 25th October 2015
 - a. Up until today, 13 cows have not been mated to AI. There is no veterinary intervention planned for these cows and we hope that these will be bull mated over the coming week or so.
 - b. Our 3-week Submission rate was 89%
 - c. Our 4-week Submission rate was 95%

- d. 13 bulls have arrived on farm 2 days ago.

11. Mating Plan: Milking herd.

- a. We have a further 2 days remaining of AB (slightly shorter than planned) after which we will follow up with a further 4 weeks of bulls (the same jersey bulls as have been 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 Friesian sires (daughter proven team)
- d. 12 potential culls cows have been identified and are being mated to Hereford

12. Mating of 15 Month Old heifers

- a. Heifers are currently away grazing at Hororata.
- b. Thirteen bulls have returned to the farm, a further two bulls remain with the heifers to cover any late returning heifers.
- c. The heifers were weighed on the 30th November and have an average liveweight of around 400kg, 87 kg heavier than target provided by MINDA Weights.

Growing Conditions

- 13. The average 9 am soil temperature for the week was 15.3 degrees (2.2 degrees higher than last week). Some mornings this week have been quite hot. The soil temperature has now gone over last year's temperature by 1 degree when compared to this same time last season. A complete turn of condition from the previous week when soil temperatures were behind the previous year.
- 14. There has been no rain over the last week.
- 15. Both pivots have been irrigating for 7 days. Corner sprinklers and K line have been running every day, shifted twice daily and will continue to run as required to maintain soil moisture levels.
- 16. There will be bucket test done in the north pivot as soon as the wind allows for it.

Figure 1: Soil temperature history for the last 2 weeks

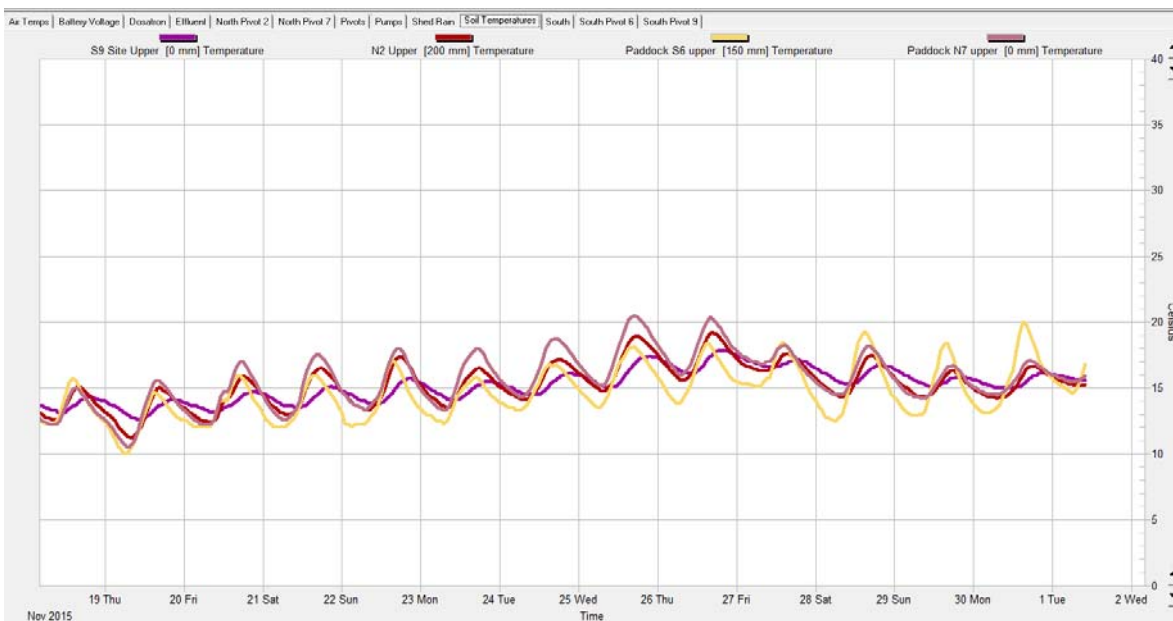
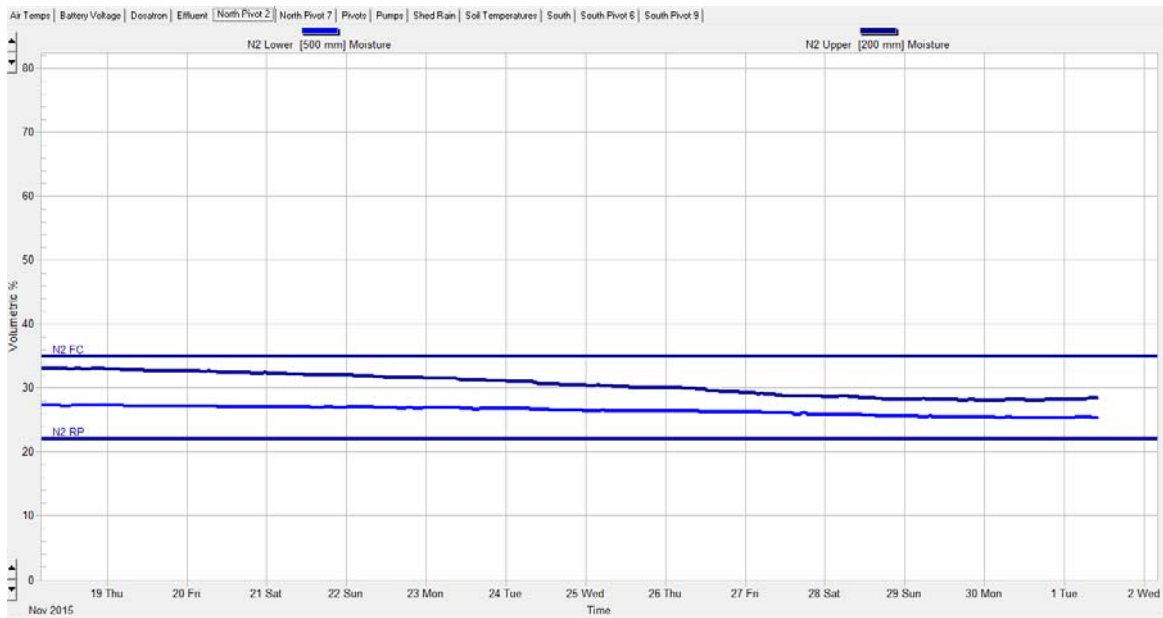


Figure 2: Soil moisture history for the last 2 weeks (Paddock N2).



17. As per the graphs above, over the last week, the temperature and wind has contributed to a substantial evapotranspiration loss, potentially even overnight. As a result, the Aquaflex soil moisture readings have continued to drop despite irrigating full time.
18. This is likely to have influenced not only pasture growth but also the way that the grass has responded to drier than normal conditions, potentially promoting more seed head production. This pasture appears more upright and stemmy at the base, which could mean the plate meter has overestimated the DM readings.

Nitrogen

19. 33.3 ha have received 25kgN/ha to recently grazed paddocks.

Pasture and Feed Management

20. The milkers continue to be fed only pasture.
21. 5.1 ha have been pre-graze mown this week (areas that had not been done previously before due to weather conditions).
22. Paddock S7 (7.6 ha) remains out of the grazing rotation following regrassing. The newly sown pasture has started to come through and is expected to take another 4-5 weeks until it is back into the round.
23. With this regrassed paddock out of the grazing round, the farm has 152.4 ha available for grazing by the milking herd.
24. The areas targeted for baleage last week have now been harvested (2 ha of the back of paddock N7 and the East block)
25. Last week's feed wedge showed the farm was almost on target for APC and round length. The round length achieved during the week, though, was 23 days whereas the target was 25 days, suggesting the herd did not find as much pasture in each paddock as recorded by the plate meter last week. While some of this feed was clearly high quality regrowth (as the last few paddocks that had been pre-graze mown in the previous round), which could support higher daily intakes, the small decline in milk

production, relatively stable liveweight and small decrease in average pasture cover supports the likelihood of over estimation of pasture cover last week.

26. Pasture quality:

- On observation, quality of the pasture to be grazed over the coming week – 2 weeks appears on average good although some stem is obvious at the base of the sward in many paddocks.
- Some paddocks felt “crunchy” underfoot, even when the quality looks good.
- Although seed head appearance seems to have been well managed by the pre-graze mowing in some paddocks, where the pre-graze mowing was done before seed head emergence started, hardening of the stems is very noticeable.
- The hybrid grasses seem to have responded to the dry weather by becoming more upright and harder at the base.
- The pasture quality tests could explain some of these changes when they are received later in the week, however were not available today.

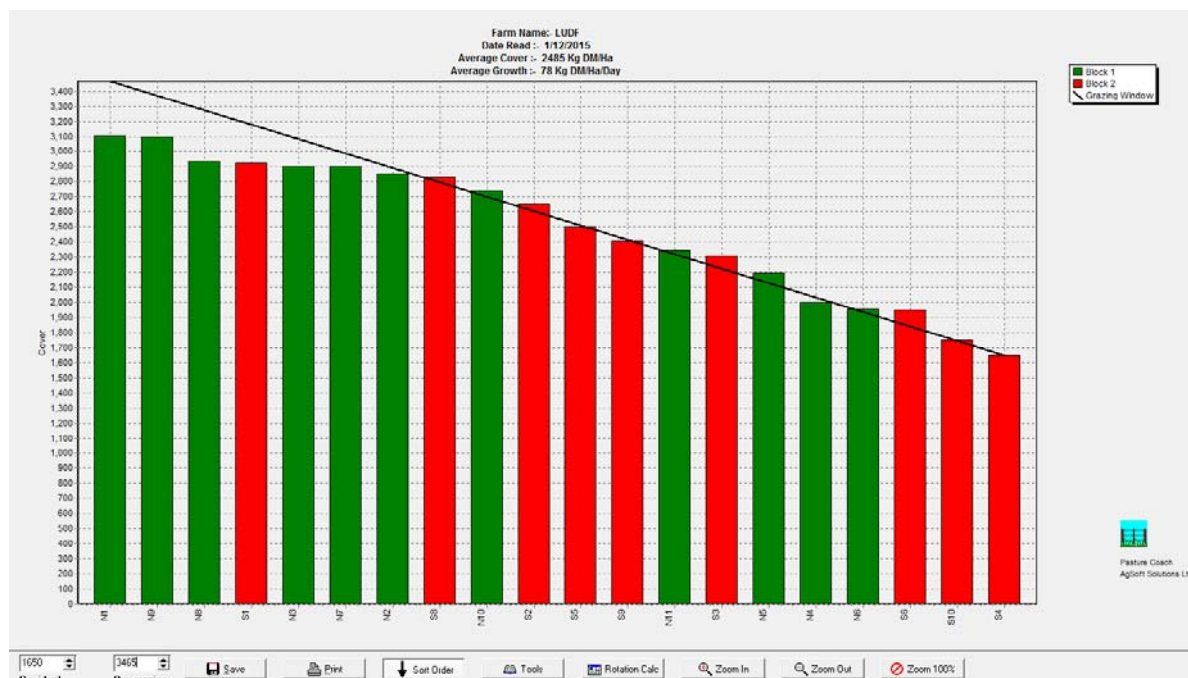
27. Based on the reduced area (152.4 ha with one paddock out for regrassing), the target pregrazing cover and demand line in the feed wedge continue to be calculated using a target rotation length of 25 days, an intake of 20kgDM/cow/day (slight reduction from last week to account for the higher pasture quality), 554 cows (for the week ahead) and a post grazing residual of 1650 kgDM/ha. Target pregrazing cover is therefore:

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

$$(554 \text{ cows} / 152.4\text{ha} \times 20 \text{ kgDM/cow/day} \times 25 \text{ days}) + 1650 = 3465\text{kgDM/ha.}$$

28. 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. 240MJME at present. Feed testing two weeks ago suggests pasture was approximately 12.3MJME, therefore 240MJME requires approximately 20 kgDM / cow / day. (73kgDM/ha/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 regrassing:



29. The wedge above shows a small (8 tonne DM) deficit for this coming round. With the current growth rates and weather forecast, it is estimated that the shortage could be overcome in probably about 4-5 days of growth rates in excess of daily herd demand for pasture.
30. The highest paddocks are currently plating at 3100kgDM/ha, whereas the target pregrazing is 3465 kgDM/ha, so we have a current per ha deficit of 365 kgDM/ha if we hold our current 25 day grazing round. On the 6.1 ha/day (25 days round on 152.4ha), this is 2 tonnes DM/day deficit. With 554 cows in milk, this means a requirement to feed about 4 kgDM/cow/ha silage for a 3-4 days.

Feeding Management for the coming week:

31. Given all of the above, the key decisions for the week ahead:
- We will continue to target a 25 day round (6.1 Ha/day or 42.6 ha /week) across 152.4 ha. This will be continuously re-evaluated according to what the weather brings.
 - Given the current feed deficit, we will be feeding around 4 kgDM/cow/day of silage for a few days until the growth allows the pasture to catch up with demand.

LUDF Weekly report	3-Nov-15	10-Nov-15	17-Nov-15	24-Nov-15	1-Dec-15
Farm grazing ha (available to milkers)	152.4	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	0	0	0
Culls total to date	11	11	11	11	11
Deaths (Includes cows put down)	0		0	0	1
Deaths total to date	9	9	9	9	10
Calved Cows available (Peak Number 560)	555	555	555	555	554
Treatment / Sick mob total	0	0	5	8	6
Mastitis clinical treatment	0	0	5	6	2
Mastitis clinical YTD (tgt below 64 yr end)	62	62	67	73	75
Bulk milk SCC (tgt Avg below 150)	153	173	220	216	186
Lame new cases	2	4	5	22	6
Lame ytd	15	19	24	24	52
Lame days YTD (Tgt below 1000 yr end)	32	79	100	135	310
Other/Colostrum	0	0	0	0	0
Milking twice a day into vat	550	552	447	542	518
Milking once a day into vat	5	3	3	5	29
Small herd	139	139	139	139	139
Main Herd	411	413	411	403	379
MS/cow/day (Actual kg / Cows into vat only)	2.35	2.28	2.21	2.21	2.17
MS/cow to date (total kgs / Peak Cows)	161	176	192	207	222
MS/ha/day (total kgs / ha used)	8.12	7.85	7.58	7.60	7.45
Herd Average Cond'n Score	0.00	0.00	4.40	0.00	0.00
Monitor group LW kg WOW early MA calvers	480	486	0	485	487
Soil Temp Avg Aquaflex	11.9	12.2	12.5	13.1	15.3
Growth Rate (kgDM/ha/day)	96	66	67	70	78
Plate meter height - ave half-cms	16.3	16.0	14.4	14.5	14.2
Ave Pasture Cover (x140 + 500)	2778	2744	2516	2536	2485
Surplus/[deficit] on feed wedge- tonnes	0	0	0	0	0
Pre Grazing cover (ave for week)	3504	3828	3791	3424	3387
Post Grazing cover (ave for week)	1600	1600	1600	1600	1600
Highest pregrazing cover	3582	3900	4000	3610	3500
Area grazed / day (ave for week)	6.03	5.70	3.80	5.25	6.62
Grazing Interval	25	27	40	29	23
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)	12.0	11.8	11.7	12.3	0.0
Pasture % Protein	16.6	17.5	19.3	17.5	0.0
Pasture % DM - Concern below 16%	12.5	12.0	13.3	15.4	0.0
Pasture % NDF Concern < 33	38.8	38.7	40.7	32.7	0.0
Mowed pre or post grazing YTD	69.2	103.6	119.9	119.9	125.0
Total area mowed YTD	76.8	111.2	137.5	137.5	144.6
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	100.6	100.6	297.5	297.5	319.06
Units N applied/ha and % of farm	25units/18.7 %	25units/19.1%	25units/19.3%	0	25units/20.8%
Kgs N to Date (whole farm)	62	66	71	71	76
Rainfall (mm)	8.2	4.6	8.4	0.02	0
Aquaflex topsoil rel. to fill point target 60 - 80%	60-80	50-80	50-80	50-80	40-70

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.