#19 - 07 MARCH 2024

WHAT'S BEEN HAPPENING ON LUDF ?

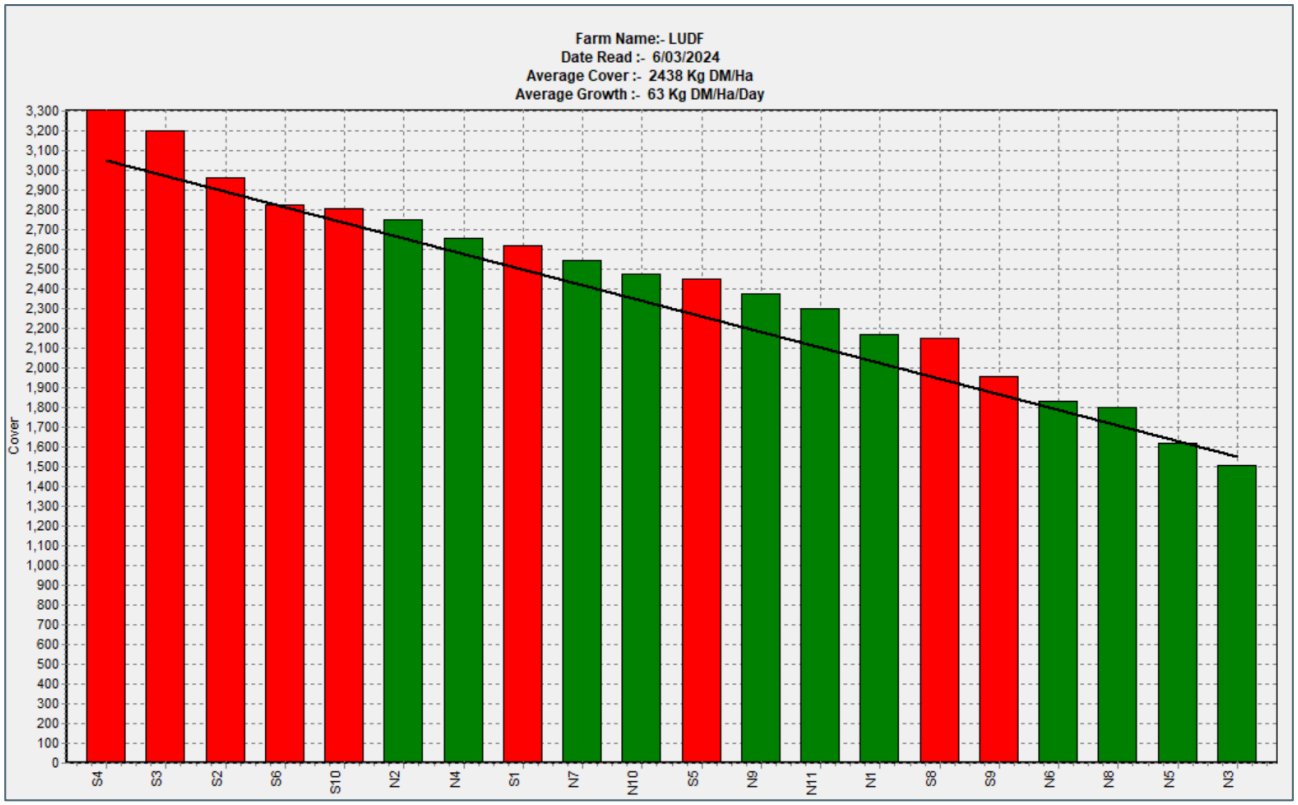
PASTURE & FEED

As we move into autumn our growth sits on demand. Currently pasture growth rate is 63 kg DM/ha, while herd demand is 65 kg DM/ha. Herd intake is currently 17.9 kg DM/cow/day with supplementation levels of been between 6-8 kgs DM/cow/day (silage). APC (Average Pasture Cover) is now 2438, which has increased as we extend our round out for the expected drop in growth rates for the remainder of the season. Our current round length is 29 days, with one paddock still out for regrassing which will be in the round in a fortnight. Pre grazing covers are now sitting at 3050 with a targeted grazing residual of 1550.

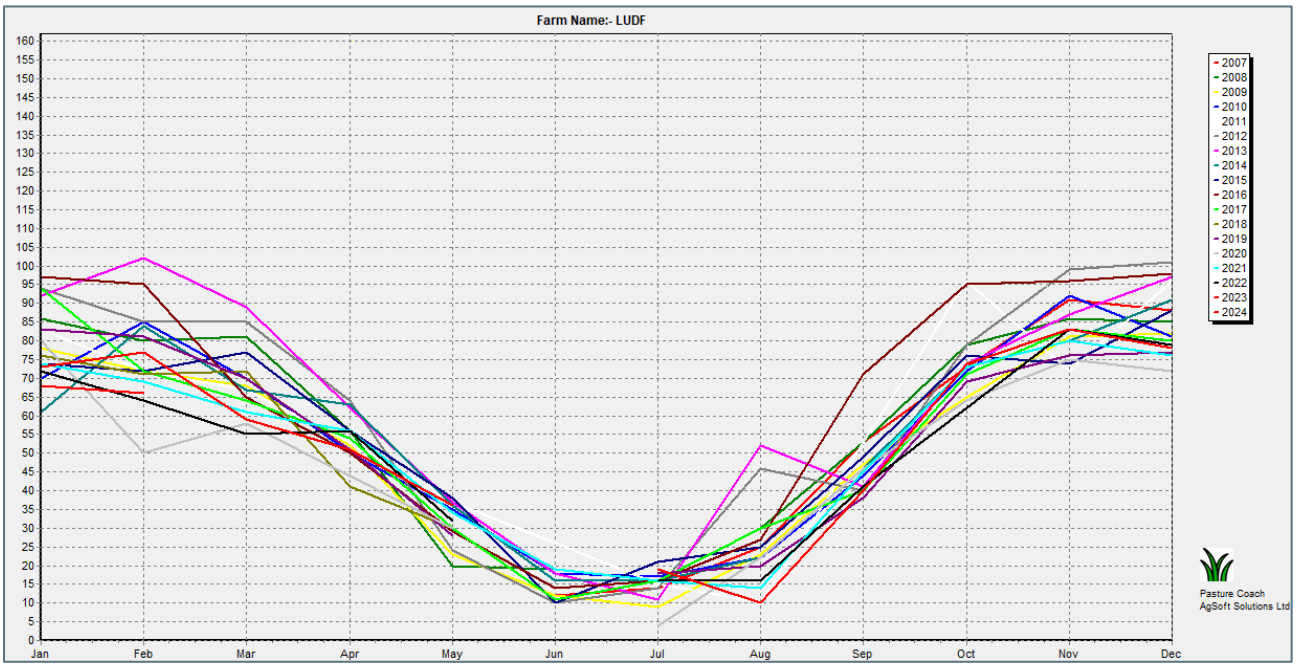
Effect of cross-drilling on density

Pre-grazing cover & supplement

New grass paddock



Feed Wedge



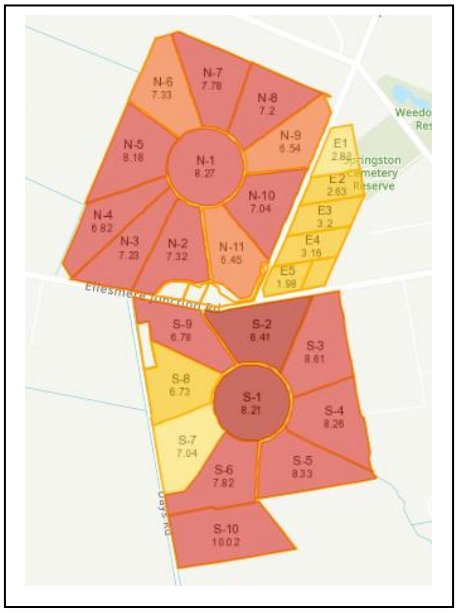
Historical Growth Rates at LUDF

NITROGEN USE

Nitrogen applications have resumed at 22 kg N/ha for followed behind the cows, when timing and rates.

Our paddocks currently range from 100-178 kg N/ha. Lower rate paddocks have been out for regrassing and will have targeted applications for new grass into autumn.

Nitrogen Heat Map



PLANTAIN UPDATE

As part of our role as earlier adopters of science and demonstrating how this science can be implemented on farm, we have been embarking on a plantain journey to have environmental solutions for farmers, specifically for N leaching. LUDF has adopted a low environment footprint approach and we have incorporated plantain into our system since 2013, this was done through a mix of plantain, chicory and clover into our pasture. This was due to environmental gains that could be made through using plantain, as evidenced by science (Pinxterhuis et al 2024) and incorporated into tools such as Overseer . Our observations at the time were that plantain did not persist in mixed swards and a decision was made in early 2021 (for the 2021/22 season) to determine if pure sward plantain could be an option for LUDF, and other farmers, that were looking to reduce their N leaching on farm.

Due to our farm system and the challenges that we have observed at LUDF with the pure sward approach, and considering new and emerging science, we have challenged the model and decided to pivot on our plantain plan and to relook at how we can establish and maintain plantain in pasture at LUDF. Recent science has compared establishment methods in existing pasture as a way of maintaining plantain in the sward. Methods being compared include under sowing/direct drilling and over sowing/broadcasting, (Dodd et al 2019 and Bryant et al 2019).

Our revised plantain plan is to determine what proportion of plantain we can establishment into existing swards and use the data collected to determine a strategy for LUDF to maintain plantain in the sward. The objective is to determine establishment rates, longevity at LUDF and to look at future methods and sowing rates to maintain plantain in the sward. Our goal has been to achieve 30% in the diet, however emerging research suggests that the relationship is strong with respect to the percentage of plantain in the sward to N leaching observed; Overseer also recognises this. With this in mind, we now have a short-term goal of achieving 10% in the sward at year 3. We will review this plan annually to ensure we are on track and communicate what we are seeing along with any changes, if any, to the plan or goals of our strategy.

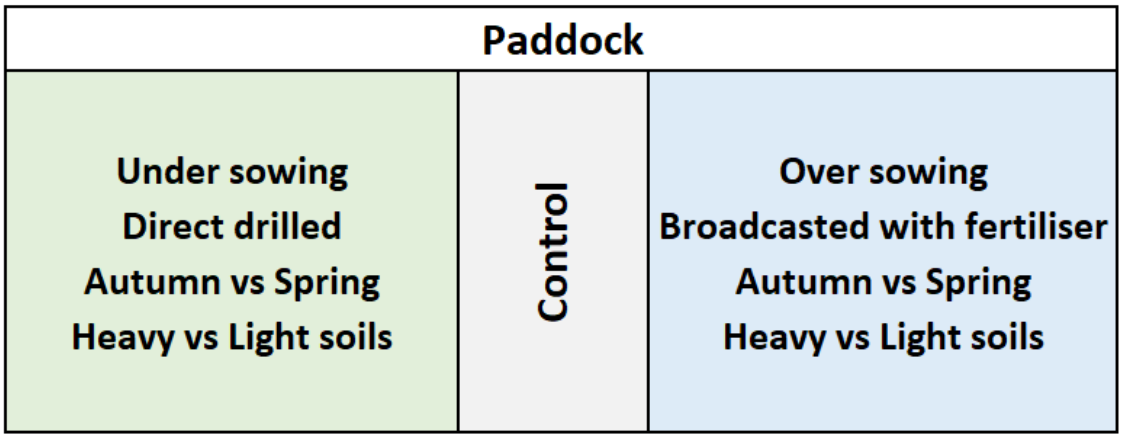
What is the new plan?

We will look to compare, within paddock establishment rates, time taken to reach peak composition, the proportion of plantain, the decline over time, and how and when we should replenish plantain in a mixed sward. We will compare under sowing and over sowing, sowing dates (early autumn and late spring), and also compare lighter and heavier soils. We are also incorporating plantain in our new pastures and will monitor these paddocks also. We will continue to update on this plan as it progresses.

The Plan

Paddock	Area	Soil Type	Treatment	Year 1	Year 2
1	8	Light	DD/BC 24 Autumn	Y	Y
2	8	Light	DD/BC 24 Autumn	Y	
3	8	Light	DD/BC 24 Spring	Y	Y
4	8	Light	DD/BC 24 Spring	Y	
5	8	Heavy	DD/BC 24 Autumn	Y	Y
6	8	Heavy	DD/BC 24 Autumn	Y	
7	8	Heavy	DD/BC 24 Spring	Y	Y
8	8	Heavy	DD/BC 24 Spring	Y	
Total	64				

Paddock Design

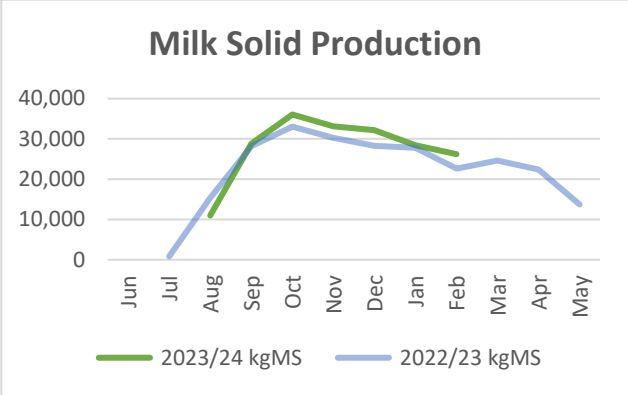


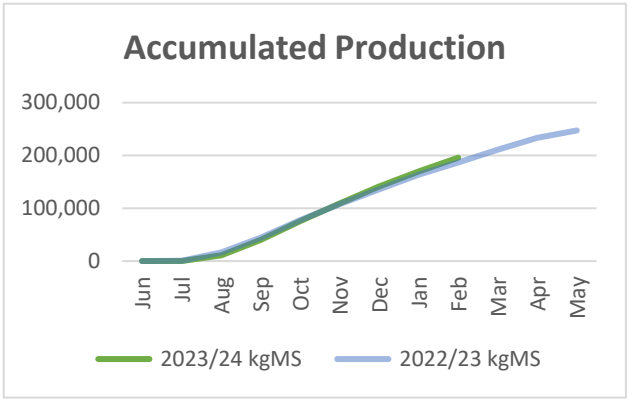
Plantain being under sown into existing pasture

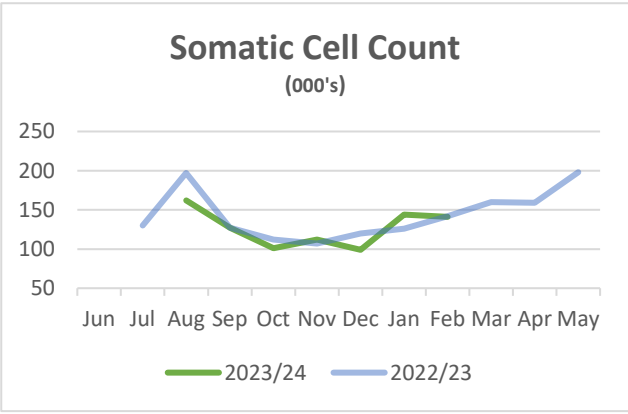
Side by side comparison

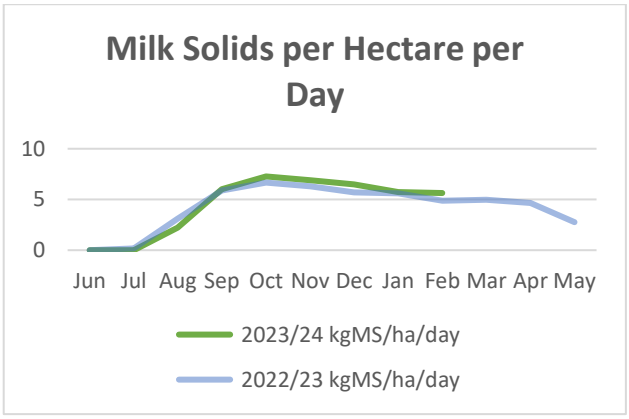
MILK PRODUCTION

Cows are currently producing 1.66 kg MS/cow/day and are tracking ahead of last season (lower production for the region) and are still on target for 264,000 kg MS for the season. For February, we are 12% ahead compared to last February and 5% up STD (season to date).









MATING

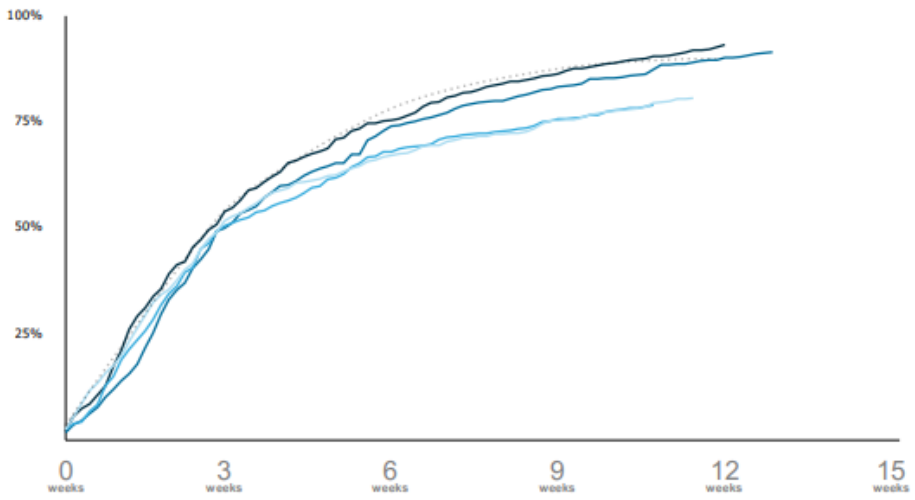
We have completed our final February scan on our herd, and we can report a not in-calf rate of 7%. However, as we scan during mating, our last scan has showed that we have had 2% losses, cows that were confirmed pregnant from earlier scans that are no longer pregnant, so now sit at 9% empty. Final scan for R2 heifers, gave us an empty rate of 5.8%. This is a great result for the farm.

The in-calf rate table shows our last four seasons. You will notice a significant improvement over the last two seasons.

In-Calf Rates for Spring 2023 (BQCY)

In-Calf Rates for Whole Herd

This pregnancy rate graph is based on a combination of early, aged and non-aged pregnancy testing results, so data may be inaccurate.



In-calf rate

	3 Weeks	6 Weeks	9 Weeks	9+ Weeks	Not In-Calf Rate	
Spring 2023	54%	75%	86%	93%	7%	LIC
Spring 2022	50%	74%	83%	91%	9%	LIC
Spring 2021	51%	68%	76%	79%	21%	LIC
Spring 2020	52%	67%	75%	81%	19%	LIC

For those that have been following us for a while will know that we have embarked on a reproduction benchmark project where we compared LUDF to Alderbrook Farm (Liam Kelly). Liam has consistently achieved low not in-calf rates and we wanted to investigate and compare systems.

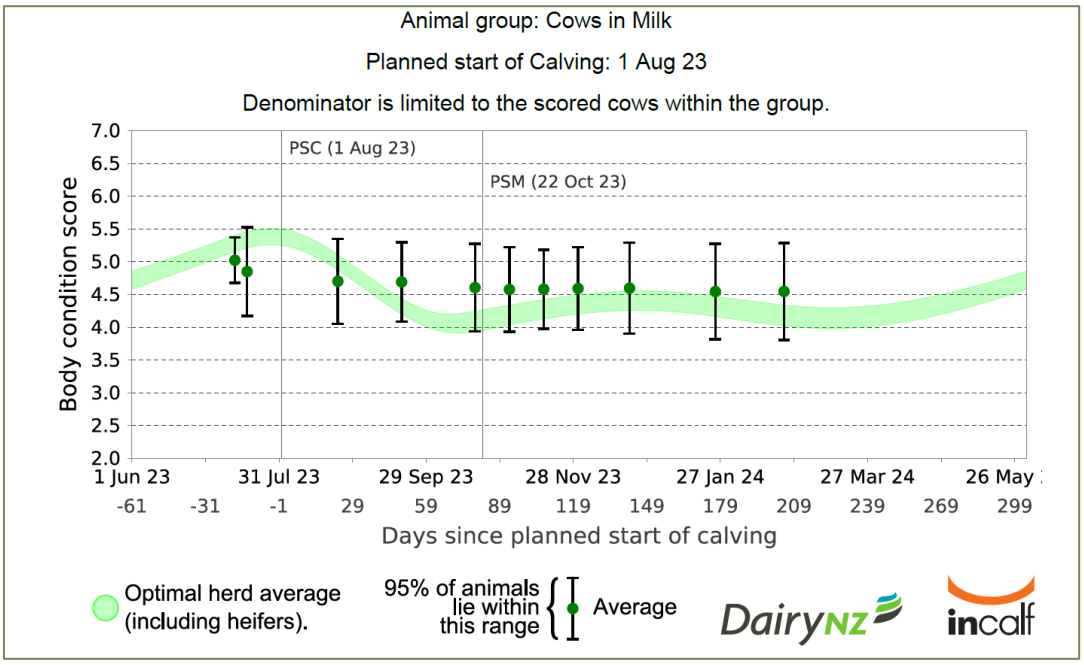
A few things we have done differently:

- 12 week mating with ultra short gestation for the last 2 weeks.
- Once a day at calving – every cow has a minimum of 10 days OAD and must reach a minimum of 450 ruminations minutes before moving to our 10-in-7 milking regime.
- Early N applications – has led to high quality feed early in the season.
- Feeding – ensuring cows were fed high quality feed leading up to and during mating – this is our aim all year round, but we know things can change quickly!
- NEFA tests – to determine and confirm the cows energy balance. NEFA test is a non-esterified fatty acid test that detects when the cows body fat is being mobilised (i.e. is in negative energy balance). Ours have improved this season.
- Early scans to detect and treat phantom cows. This has resulted in more in-calf cows.

- Body Condition Score (BCS) regularly over winter, early lactation and mating to ensure we are on target.

Keys stats:

- 91% submission rate
- 54% conception rate
- 75% 6 week in calf rate
- 9% not in calf rate



EVENT

SIDDC FOCUS DAY – 14 February 2024

We held a very successful and informative SIDDC Focus Day at LUDF on 14 February under a cloudless blue Canterbury day, the topics covered the LUDF farm update, Scope Three, Wellbeing and Plantain, the speakers were:

- Virginia Serra from DairyNZ
- Louise Cook and Sean Spence from Fonterra
- Jack Cocks representing FarmStrong
- Omar Al Marashedeh from Lincoln University

You will find the full handout is available on our website: www.ludf.org.nz/events