FOCUS DAY

LUDF
Lincoln University Dairy Farm

5 March 2025

10.00am – 1.00pm

SN37581

SIDDC
South Island Dairying Demonstration Centre

LOWDOWN at LUDF

Peter Hancox (LUDF)
Antoinette Archer (SIDDC)

- **Season to Date**: Milk production, pasture and feed, mating results and cow condition
- **Looking ahead**: Autumn feed management, dry off strategy and winter feed plan
- **Financials:** Snapshot of the season to date and planning for next season

AUTUMN MANAGEMENT PLAN

Ants Roberts (Ravensdown)
Bernardita Saldias (Farmright)

- **Smart inputs, better outputs**: Optimising farm soil fertility for productive, nutritious pastures and efficient use of N fertiliser to fill the feed gaps
- **Feed Management**: Balancing autumn feed, cow condition and drying off strategies to set up for next season

BEYOND THE BOTTOM LINE

John Donkers (DFMS)
Frazer Weir (BDO)

- **Turn your plans into profit**:
  - ◊ Dissecting the budget process
  - ◊ Valuing variance reports
  - ◊ Why reforecasting is important
  - ◊ Planning for profit and tax
- **Farmer Panel**: Insights from our farmer panel

Register on the day from 10.00am for 10.30am start
Lincoln University Dairy Farm, Lincoln
Parking: Entrance off Ellesmere Junction Rd
Refreshments & Light Lunch provided
E. office@siddc.org.nz
T. 03 423-0022 or M. 0272 724 069

www.siddc.org.nz

Welcome to Lincoln University Dairy Farm (LUDF).

The farm is a fully operational, commercial dairy farm with a number of potential hazards for both visitors and staff. Many of the potential hazards cannot be eliminated while also providing access to visitors, therefore, all staff and visitors MUST watch for potential hazards and act with caution.

Hazard Summary: Look, think, act.

The following chart provides a reminder of the types of hazards at LUDF. Watch for these and any other hazards that may be on the farm today.

People: • Uninformed/ill-prepared visitors may be the greatest risk	**Animals:** • **You are in their space**	**Milking shed:** • Moving rotary platform • Confined animals • Chemicals
Eyes / Ears: • Water / oil / milk / chemical splashes • Welding flashes • Loud machinery		**Touch:** • Hot/cold surfaces, hot water, chemical burns • Electric fences – treat them as high voltage power sources
On-farm machinery and tools • Chainsaws, hand tools etc. generate noise, fragments	**Potential slips/trips:** • Uneven surfaces occur across the farm • Fences • Drains • Underpass • Effluent pond	**Vehicles:** • Contractors and farm equipment – **act as though they can't see you** – keep out of their way • Centre Pivot takes precedence over your plan

ARE YOU TRAINED FOR WHAT YOU ARE ABOUT TO DO? If not, STOP.

If you are uncertain how you should act or proceed, stop and contact the farm manager, other farm staff or your host.

By entering this farm, you are acknowledging your receipt of this hazard summary and your agreement to take personal responsibility to watch out for potential hazards and act in such a manner as to protect yourself and any others also on-farm.

SIDDC FOCUS DAY

March 5th 2025

10:15am – 1:00pm

Lowdown on LUDF

- Season to date: Milk Production, Pasture and Feed, Mating Results and Cow Condition.
- Looking ahead: autumn feed management, dry off strategy and winter feed plan.
- LUDF Financials: snapshot of the season and planning for next season.

Autumn Management Plan

Smart inputs, better outputs: Ants Roberts, Ravensdown

- Optimising farm soil fertility for productive, pastures and efficient use of N to fill the gaps

Feed Management: Berni Saldias, FarmRight

- Balancing autumn feed, cow condition and drying off strategies to set up for next season

Beyond the Bottom Line

Turn your plans into profit: John Donkers, DFMS and Frazer Weir, BDO NZ

- Dissecting the budget process
- Valuing variance reports
- Why reforecasting is important
- Planning for profit and tax

Famer Panel

- Insights from our farmer panel

Contact us: Ph: 03 423 0022 www.siddc.org.nz www.ludf.org.nz **With thanks to our sponsors:**

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SIDDC

Lincoln University Dairy Farm (LUDF) is a demonstration farm developed by the South Island Dairy Demonstration Centre (SIDDC). This industry-funded partnership of seven leading dairy sector organisations collaborate to promote the sustainable development of South Island dairying via demonstration activities, research, education and training of farmers. The current partners of SIDDC are:

Strategic Objective at LUDF

To maximise sustainable profit embracing the whole farm system through:

- Increasing productivity
- Without increasing the farm's total environmental footprint
- While operating within definable and acceptable animal welfare targets; and
- Remaining relevant to Canterbury (and South Island) dairy farmers by demonstrating practices achievable by leading and progressive farmers.

Focus for 2024/25 Season:

Nil-Infrastructure, low input, low N-loss, optimise profit.

Current farm system:

- 3.5 cows/ha (560 peak milked).
- Target up to 190kg N/ha synthetic fertiliser.
- 450kgDM/cow imported supplement with cows wintered off farm.
- Cost control - FWE budget of $5.50/kg MS - $1.464M.
- Target production 475 kg MS/cow (100% liveweight in milk production less 6% with 10 in 7 milking).

Current research projects on the farm

Flexible Milking Project

- 10 milkings in 7 days all season – incorporating OAD milking for transition cows (10 days).
- Fourth season implementing a 10 in 7 flexible milking regime.
- Prediction was 6% drop in MS production.
- Last season we achieved a 6.2% drop over our three-year TAD average, whilst our three-year average for 10 in 7 was 8.3% compared to our TAD average.
- We have completed a benchmark of like farms over this period, and this shows our drop was in line with the regional drop. This was 5.2% over the three seasons 10 in 7, compared to the previous three seasons TAD.
- Challenge it to maintain a 6% (or less) drop year on year.
- Profitability aim is to remain the same due to lower costs. Though labour demand, less animal health and shed costs, better cow condition, targeted winter feeding levels on BCS and improved mating results.
- Profitability will be challenged during higher payout years due to drop 6% drop in production.

Plantain Grazing Project

- Aim for a minimum of 10% of the diet, with a target of 30% of the diet, in plantain via a mixed sward.
- To assess composition over time through direct drilling and broadcast with a spring and autumn sowing date.
- To result in decrease in N loss in OverseerFM from 26 kg N/ha/yr to 23 kg N/ha/yr for expected composition when direct drilled and 22 kg N/ha/yr for expected composition when broadcasted.

Mating Benchmarking Project

- Continued focus on our reproductive performance by focusing on:
- Transition cows – milk cows OAD cows for first 10 days of lactation, or until rumination criteria is met, with increase silage allocation during this period. In turn this should improve BCS loss over this period.
- Body condition score (BCS) targets for dry off and targeted winter feeding to achieve planned start of calving BCS targets, aiding in planned start of mating BCS.
- Early scanning based on data via wearables to implement our phantom cow strategy, see reproduction project for more information.
- Use of short gestation semen to allow a longer mating period (12 weeks), whist achieving a shorter calving period.

Lowdown on LUDF

Season to date:

- Pasture and Feed
- Milk Production
- Mating Results
- Cow Condition.

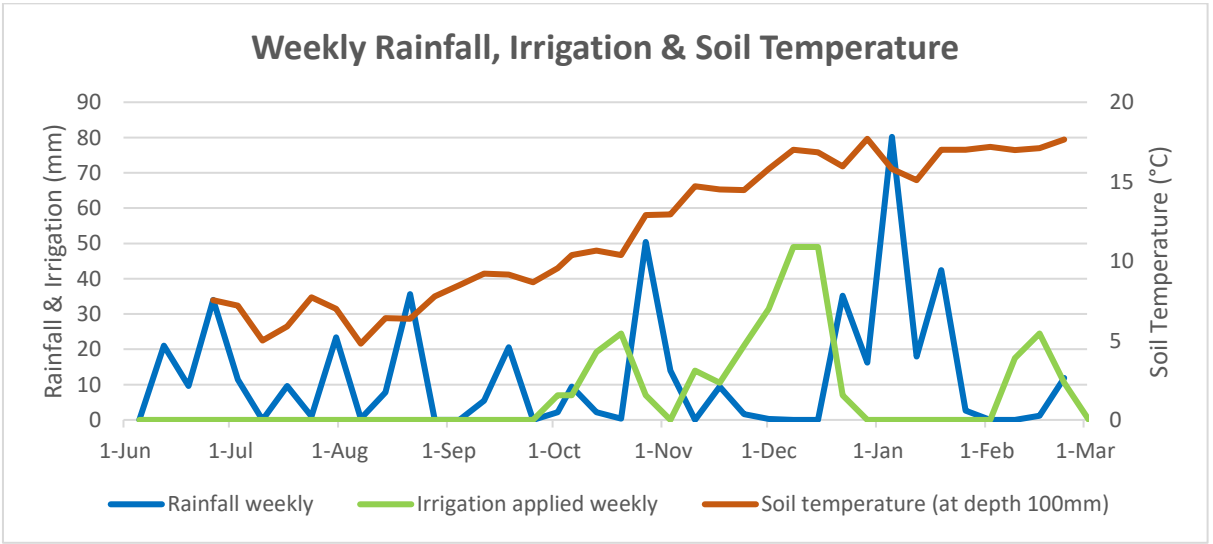
Looking ahead: Autumn feed management

- Dry off strategy
- Winter feed plan.

LUDF Financials: snapshot of the season and planning for next season.

Feed & Pasture

- 1st round finished 21st September (23rd September last year).
- Better utilisation of feed this calving, primarily due to weather conditions (less wet weather events).
- We have fed 293 kg DM/cow STD, which is 65% of our budgeted diet of 450 kg DM/cow.
- We fed an average of 3.5 kg DM silage/cow from start of calving to balance date, compared to 3.2 kg DM silage/cow.
- We did feed a higher allocation during August which resulted in higher APC's than target.
- We have applied an average of 135 kg N/ha, with a range of 80-169 kg N/ha.
- Farm policy is now to applied N-Protect throughout the season.
- APC is 2376 kg DM/ha. Pasture growth rate is currently 60 kg DM/ha and cow demand is 62 kg DM/cow/day.
- Rainfall STD is 477 mm, we have irrigated 39 days to 23 February. Soil temperature is currently 17.65°C.



March Feed Budget & Grazing Rules:

- 558 cows on 160 Ha = 3.48 cows/ha.
- Target allocation = 17.8 kg DM/cow – current feed quality is 11.8 MJ ME/kg DM.
- Residual target = 1,550 kg DM/ha.
- Demand = 62 kg DM/ha.
- Pasture required = demand x round length – pre-target grazing 3,226 kg DM/ha.

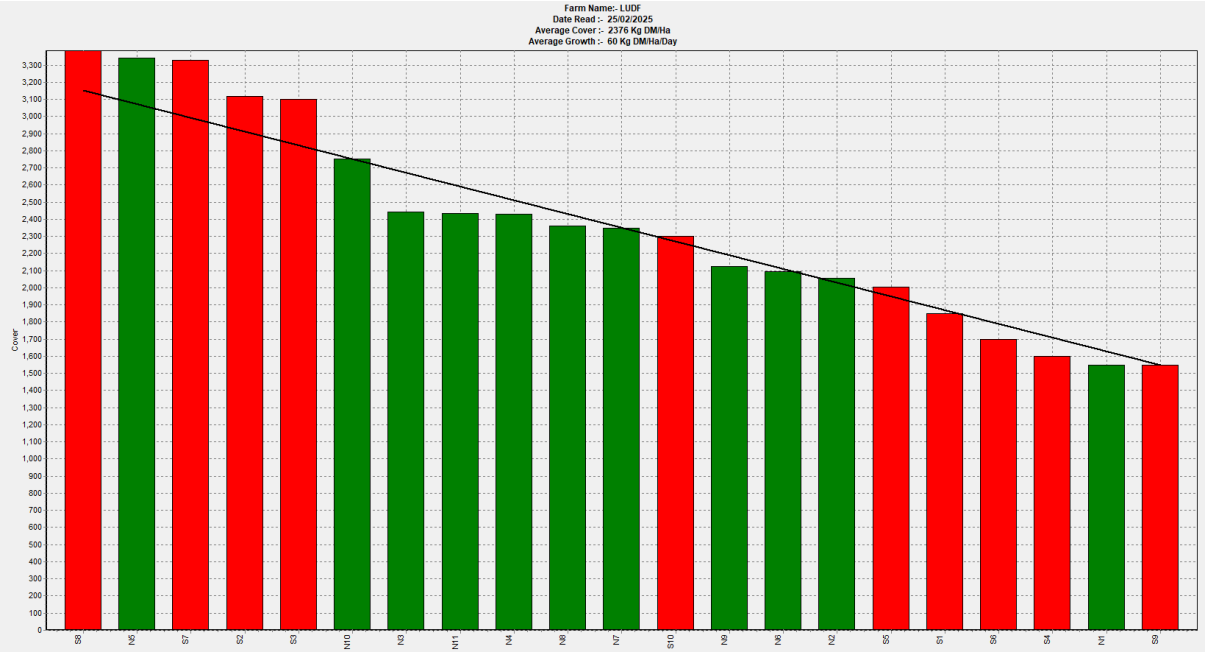
Current round length - 27 day rotation on 160 ha

			Total Diet	17.8 kgDM			
Post-grazing	1550 kgDM/ha		**Round length**	27 days		**Area**	160 ha
Herd	**Cows**	**Pre-grazing target**	**Area in round**	**kgDM/cow offered**	**Supplement offered –kgDM/cow**	**ha/day**	**m^2/cow /day**
1st Herd	552	3,226	158 ha	17.8	0.0	5.9	106
Sick/lame cows	6	3,226	2 ha	17.8	0.0	0.1	106
Total	**558**			**17.8**	**0.0**	**5.9**	

Target round length 10th March – 30 day rotation on 160 ha

			Total Diet	17.5 kgDM			
Post-grazing	1550 kgDM/ha		**Round length**	30 days		**Area**	160 ha
Herd	**Cows**	**Pre-grazing target**	**Area in round**	**kgDM/cow offered**	**Supplement offered –kgDM/cow**	**ha/day**	**m^2/cow /day**
1st Herd	552	3,381	158 ha	17.5	0.0	5.3	96
Sick/lame cows	6	3,381	2 ha	17.5	0.0	0.1	96
Total	**558**			**17.5**	**0.0**	**5.3**	

Feed Wedge



Feed Quality Sample Averages:

Date	Protein % DM	NDF % DM	ADF % DM	Digestibility % (DMD)	MJ ME/ kg DM	OM %	WSC % DM	Dry Matter %
August	21.66	42.67	22.12	80.68	12.23	91.34	18.41	15.4
September	21.75	38.61	19.29	83.18	12.70	92.11	23.91	19.4
October	23.94	39.18	21.06	80.62	12.17	90.98	17.86	15.51
November	24.08	40.12	21.50	79.62	12.08	91.38	17.50	16.70
January	21.14	42.98	23.71	78.48	11.92	91.43	16.64	16.21
Season Average	**23.61**	**39.94**	**21.32**	**80.23**	**12.15**	**91.23**	**17.96**	**16.35**

Note: this is a weighted average of all samples

Botanical Averages:

Date	% Ryegrass	% White Clover	% Dead	% Plantain	Stem Grass	% Weed
August	88.69	5.08	3.36	5.75	0.00	0.00
September	85.82	5.16	0.00	10.92	0.00	1.75
October	90.16	2.48	0.00	0.00	0.54	6.82
November	82.74	7.26	0.78	2.52	2.00	4.70
January	82.46	10.85	0.39	5.13	0.41	0.75
Season Average	**83.55**	**7.07**	**0.73**	**3.41**	**1.00**	**4.45**

Note: this is a weighted average of all samples

Regrassing & Cropping

Paddock S6 (7.27ha) paddock N11 (6.45 ha) has been renewed and sown with cultivars Forge (tetraploid hybrid ryegrass), Kotuku & Ruru (white clover) and Ecotain (plantain) with a ratio of 20:5:2:3. Sowing dates were 8 November and 6 December, with first grazing dates of 24 December and 24 January, respectively.

Fertiliser

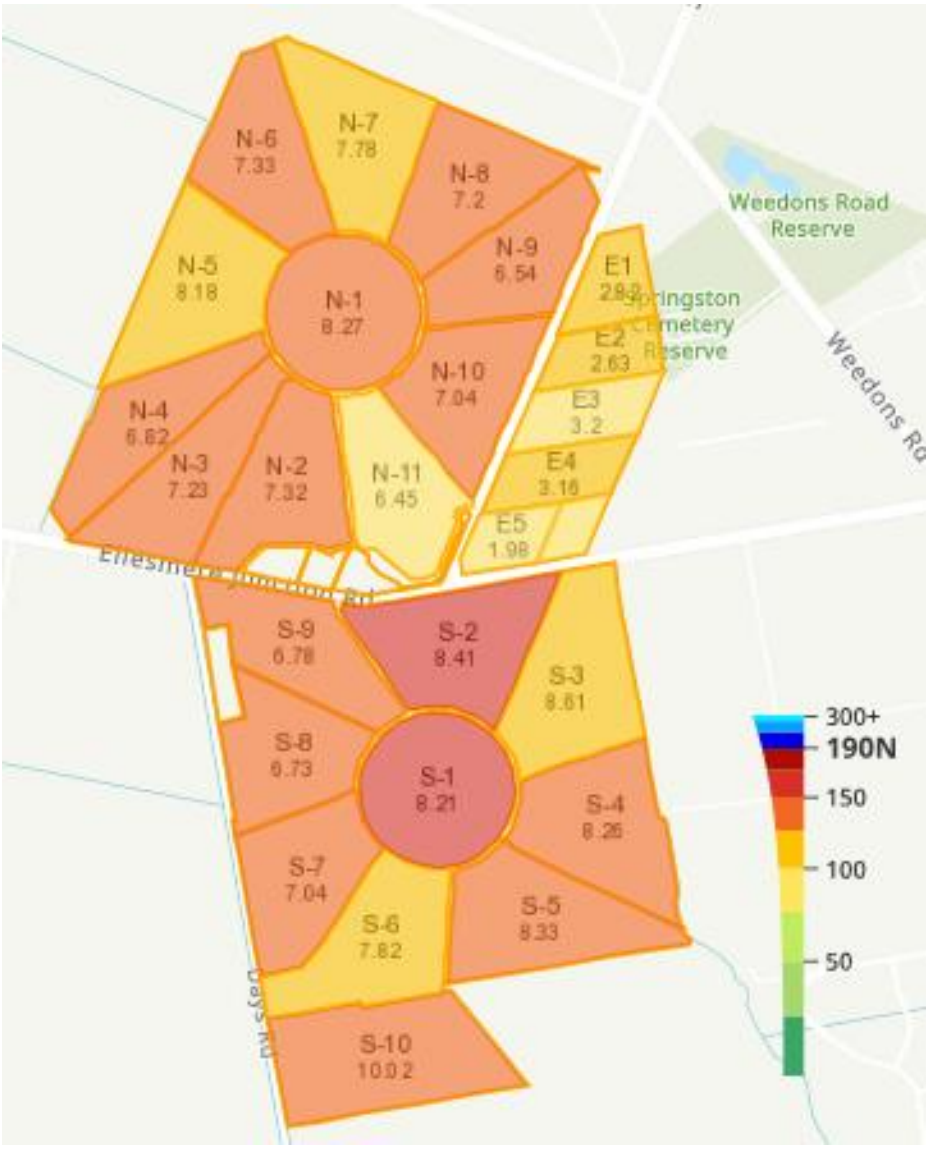
LUDF's Nitrogen fertiliser strategy has been to use a higher rate of N in late September and through to October to get an improved response rate. We use this strategy to encourage greater vegetative growth during the seed head phase of pastures, which should in turn drive a higher quality pasture into weeks 5-9 of mating. We have noticed that LUDF has a reduced conception rate during this period, likely due to feed quality as we are all grass at this stage.

Nitrogen Applications

Time	Rate	Product	kg N/ha
Early September	80	Ammo 31	24
Late September	55	Urea	25
October	65	Urea	30
November	65	N-Protect	30
December	43	N-Protect	20
January	43	N-Protect	20
February	43	N-Protect	20
March	43	N-Protect	20
Total kg N/ha			188

N applied per paddock

Nitrogen Heat Map



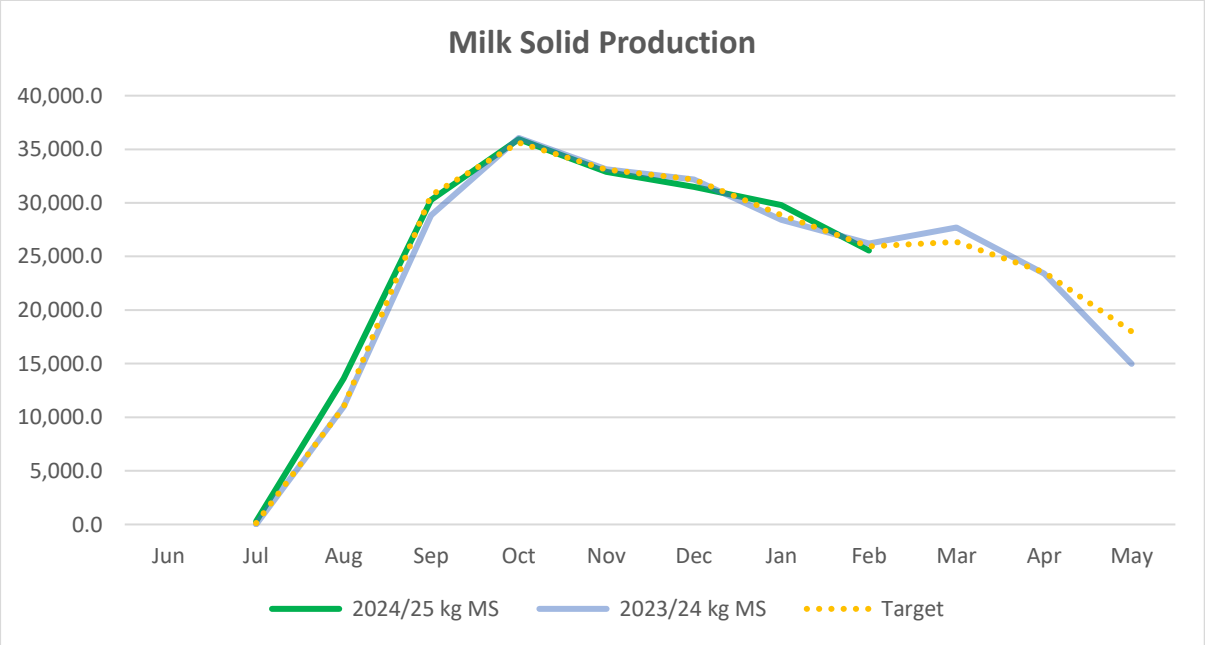
Milk Production

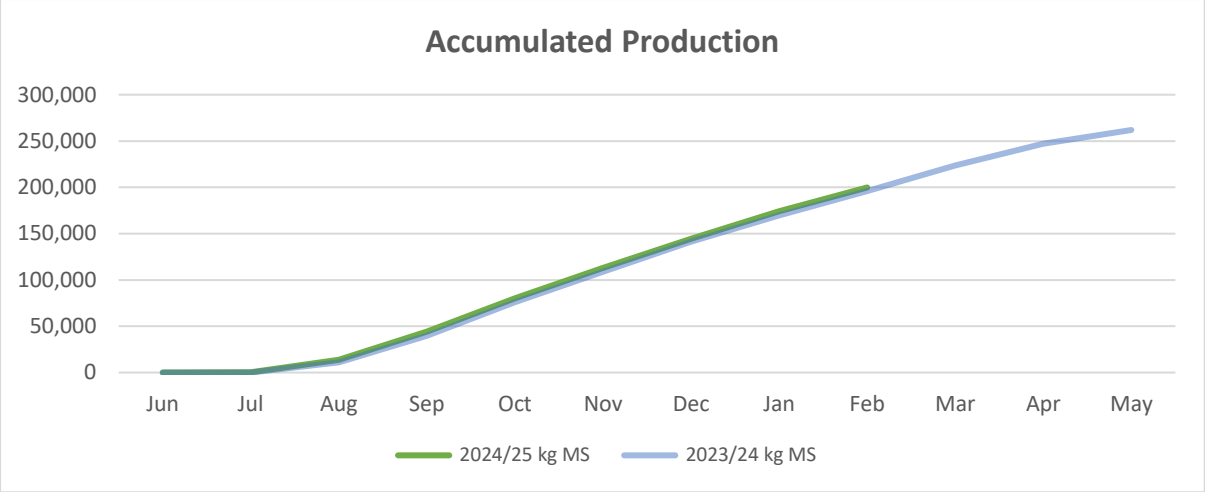
Milk Production for the season has started off extremely well, with a strong August. This was primarily due to 26% of the herd calved by the end of July, compared to 14% of the herd last season. This early milk has set us up well for the season. We are currently sitting 2.4% ahead STD, and peaked at 2.13 kg MS/cow/day.

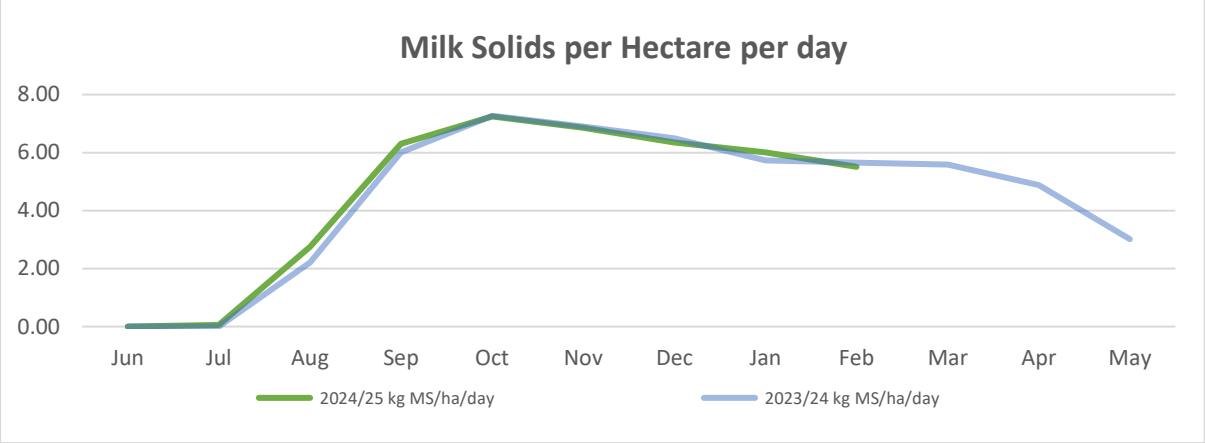
- Season budget is 266,000 kg MS, which is 1,662 kg MS/ha or 475 kg MS/cow.
- As at 28 February, we are at 199,848 kg MS which is 75% of budget, or 1,249 kg MS/ha or 357 kg MS/cow.
- 0.2% up for February and 2.4% up for the season.
- Current production is 1.60 kg MS/cow/day.

Milk Production to date:

Date	Litres	2024/25 kg MS	Variance	2023/24 kg MS	2024/25 Total kg MS	kg MS (%)	Avg SCC
February	250,305	25,550.4	0.2%	25,449.5	199,848	10.21	149
January	301,598	29,793.1	4.8%	28,419.5	174,297	9.88	136
December	331,439	31,502.9	-2.1% ↓	32,187.1	144,504	9.50	115
November	351,186	32,887.6	-0.8% ↓	33,143.1	113,001	9.36	128
October	387,953	35,938.3	-0.3% ↓	36,057.7	80,114	9.26	104
September	330,893	30,282.0	5.0%	28,827.1	44,175	9.15	109
August	143,217	13,610.9	24.0%	10,979.9	13,893	9.50	158
July	2,875	282.3	-		282	9.82	148
Total	**2,099,466**	**199,848**	**2.4%**	**195,063.9**			







Stock Reconciliation – 1st March 2025

Peak Milk:	560 cows		
Milkers:	558 cows	less 76 empty – 13.6% NICR	482 in-calf
		less 3 Johne's (IC)	3 in-calf
R2's:	113 heifers	add 18 heifers – 15.9% NICR	95 in-calf
Available for 1st June			**574 in-calf**

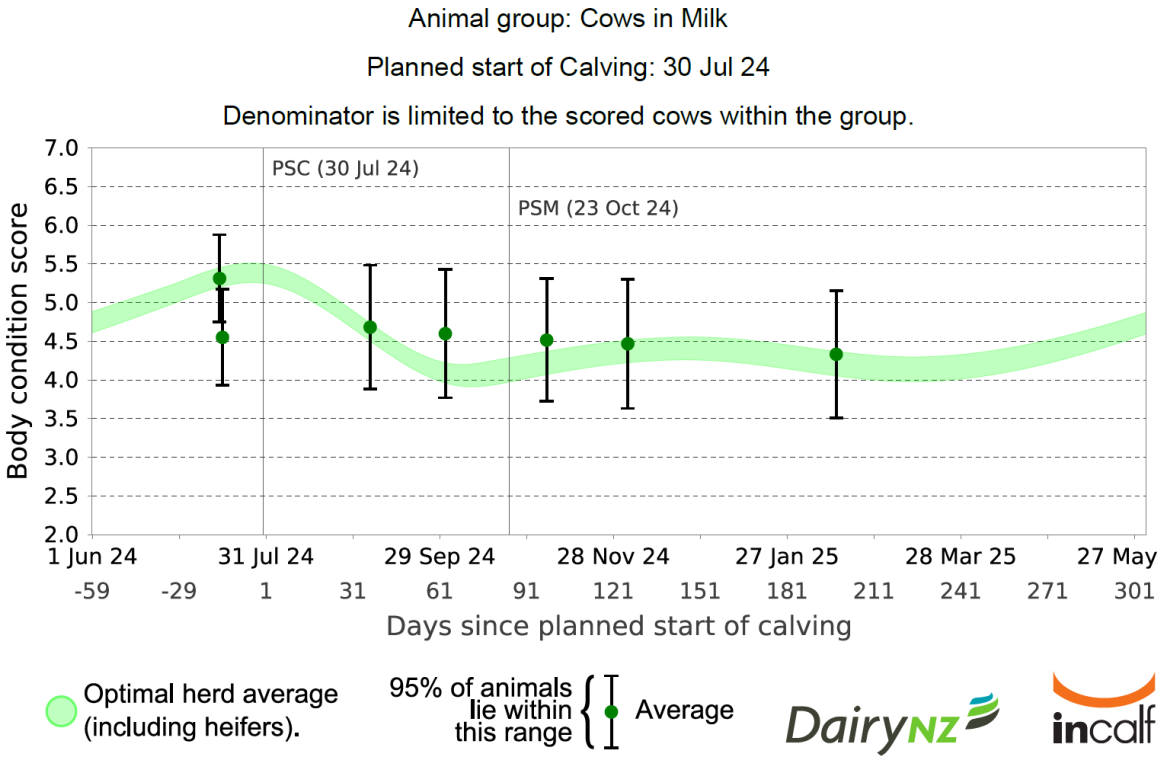
Youngstock:

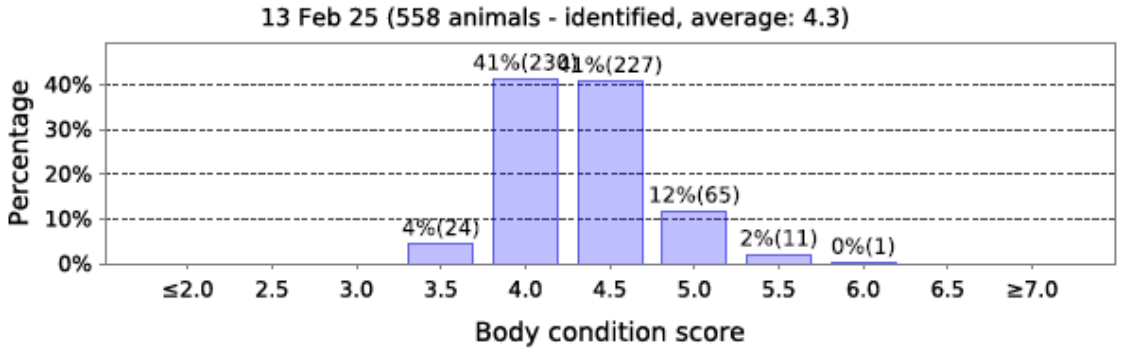
R1 calves:	101

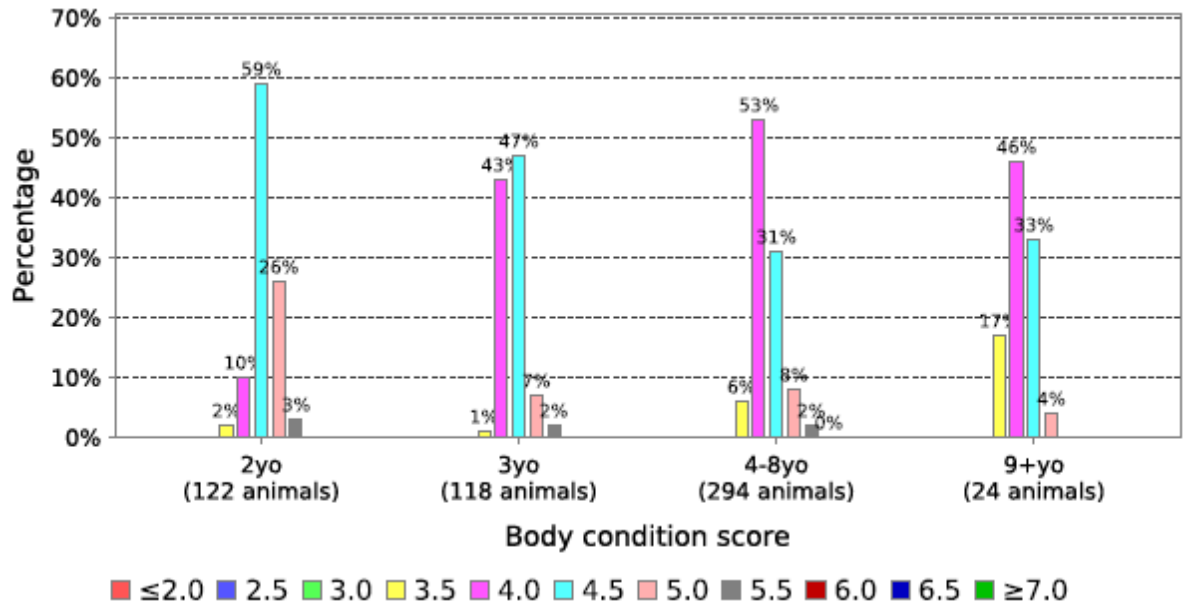
- Targeting to peak milk 560 cows for 2025/26 season – this could be a challenge.
- All culls are to be off farm by end of April. This is a strategy to reduce N loss in Overseer.
- Aim to dry off at 1900 cover on end of May.
- BCS done mid-May to determine winter mobs and feeding.
- Limited ability to further cull on SCC, production, and lameness.

Body Condition Score

- Current BCS is 4.3 at 13 February 2025.
- Body Condition Score has been a focus particularly with our mating benchmark project. However, we note that cows did not gain the desired BCS from dry off to calving. This is an area to improve and monitor closely.
- We aim to body condition score our herd monthly and have maintained above or within target, with the exception of July.
- Currently 94% of our herd are between 4.0 and 5.0, with a range of 3.5 – 5.5.
- Lighter cows are being milked OAD and preferentially fed.
- We will use BCS along with calving dates for drying off dates and winter mobs.
- We will focus on our R3 year-olds to ensure we achieve a 5.5 BCS at PSC.

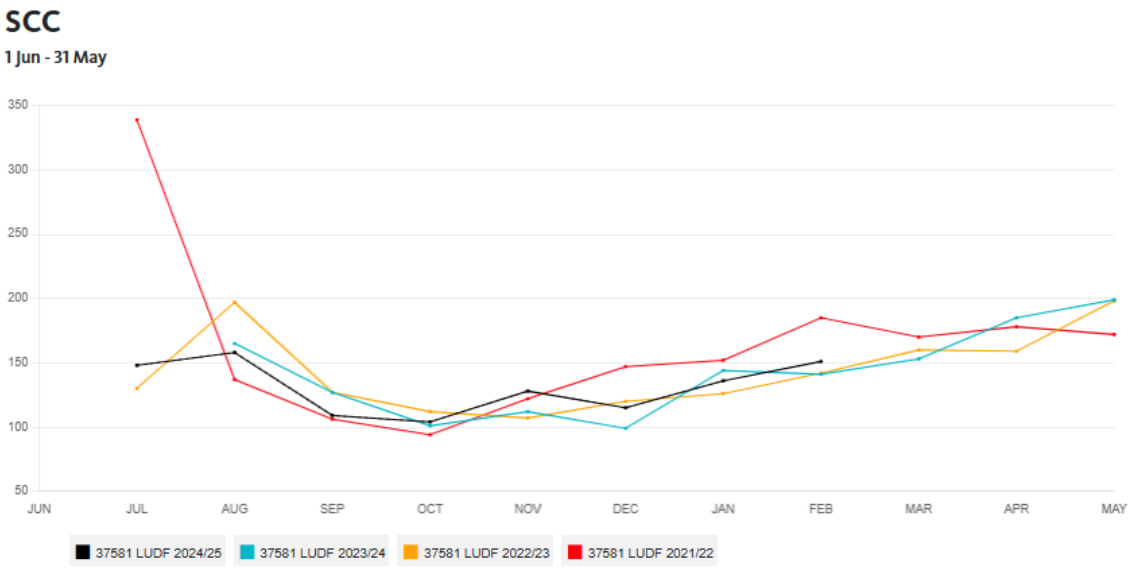






Animal Health

- Mastitis – we have had increased mastitis with wetter conditions. We have sampled all cows and all cases were Strep. uberis.
- We do culture high SCC cows to determine our dry off strategy. We dry cow therapy (DCT) high SCC (150 and above for MA and 120 and above for R3's).



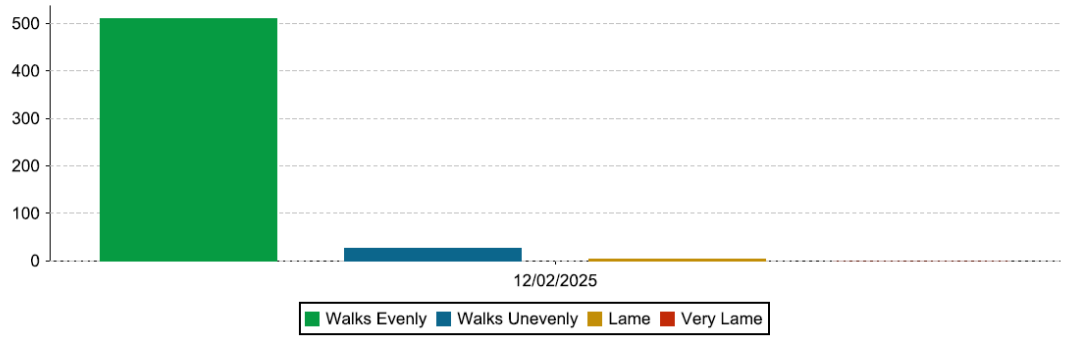
- Lame cows continue to be a challenge. This is primarily white line disease.
- We have undertaken a lameness review.
- Takeaway actions: capping laneways, locomotion score, staff training and standard operating procedures for backing gate.

Business Name	LINCOLN UNIVERSITY DAIRY FARM
Region Code & Herd Code	6/114
Participant Code	BQCY
Report Date	12 Feb 2025
Report Date Range	12 Feb 2025 - 12 Feb 2025
Total # Cows Scored	541
# Cows Normal	511 (94.45%)
# Cows Abnormal	30 (5.55%)
# of Scores	Walks Evenly: 511 Walks Unevenly: 26 Lame: 4 Very Lame: 0

infovet

Mob Locomotion Scoring

Date	Animal Group	Walks Evenly	Walks Unevenly	Lame	Very Lame
12/02/2025	Herd	511	26	4	0



Mating

Based on the Fertility Focus Report, LUDF has remarkedly improved our not in calf rate (NICR) from a historical 18-20%, to 9%, 7% and 10% consecutively, for the past three season. However, we note that we have had 3-4% embryo losses this season to date, so at February scan we are currently 13.6% not in calf. The keys changes that have been made over mating are:

- Mating length of 12 weeks with use of short gestation semen. This results in a calving spread of 10 weeks.
- Use of technology to identify heats and monitor cow activity, or inactivity.
- Phantom scanning – with data we have implemented early scanning to confirm if cows held to inseminations, for those that have not, we intervene with progesterone.
- Early scanning identified 45 phantom cows, of which 26 have now been scanned as in calf (58%). We note of the 45 cows identified; 11 cows had a repeat treatment.

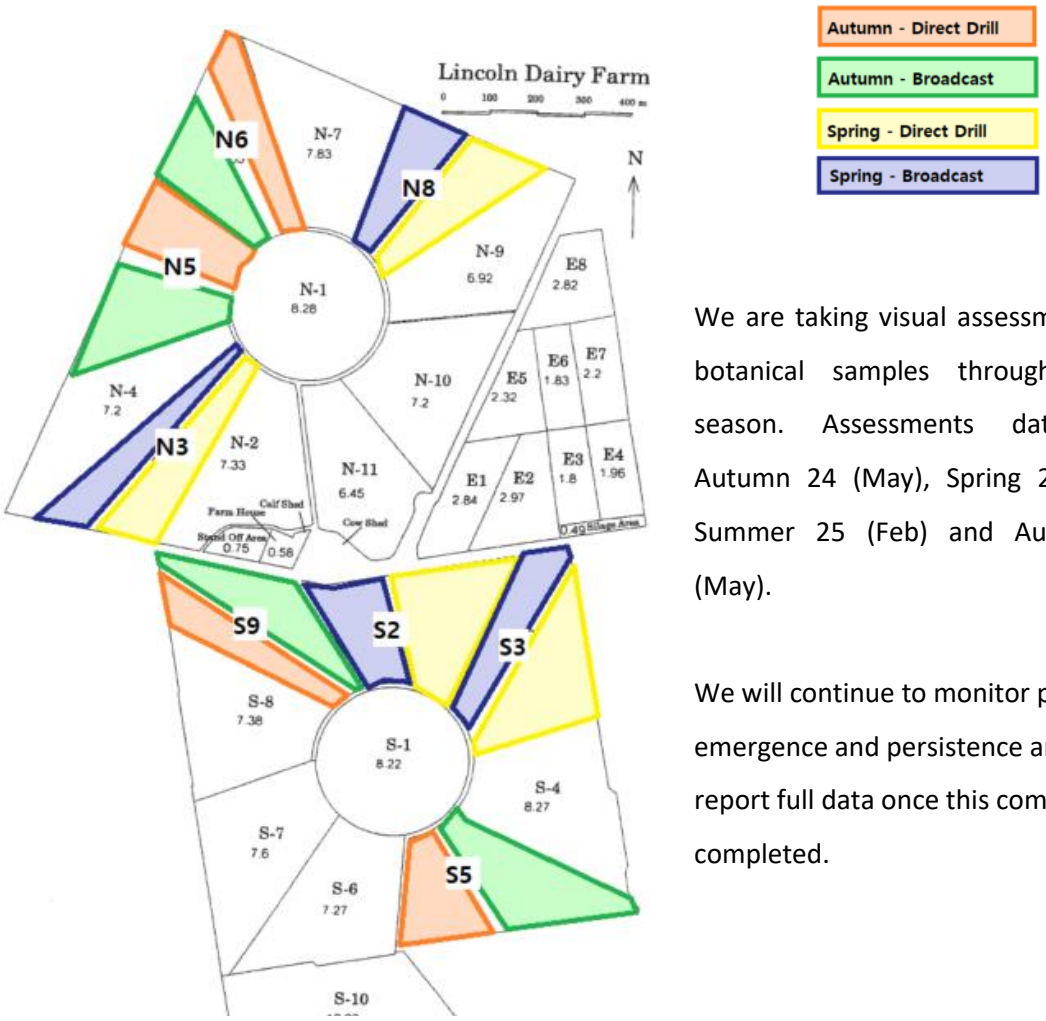
Heifer Mating

- This season we completed a synch programme which 48% were scanned in calf.
- This is unexpected as our results normally range from 62-67%.
- Bloods have been taken from MT heifer known reason.
- Final scan results are 15% not in calf.

Plantain Update

LUDF's is currently comparing the effects of sowing methods and sowing dates have on the plantain composition in the sward at LUDF. We have under sown (direct drilled - DD) and over sown (broadcasted – BC, with Nitrogen) to assess the impact on emergence and persistence, along with an Autumn sowing date (March) and Spring sowing date (November). We have replicated this on North (lighter soils) and South block (heavier soils).

Paddock design:



We are taking visual assessments and botanical samples throughout the season. Assessments dates are: Autumn 24 (May), Spring 24 (Sept), Summer 25 (Feb) and Autumn 25 (May).

We will continue to monitor plantain emergence and persistence and will report full data once this comparison is completed.

Plantain Visual Summary %:

Method	Summer 24 Baseline	Autumn 24	Spring 24	Summer 25	Sowing Date
Autumn Broadcast	0	0	1	3	Mar-24
Autumn Direct Drilled	0	0	2	1	Mar-24
Spring Broadcast	0	0	0	0	Nov-24
Spring Direct Drilled	0	0	0	0	Nov-24

Note: Spring sown plantain is expected to be seen in the autumn visual.

2024/25 Autumn Feed

FarmRight
Investing Sustainably

LUDF										
Start date	**22-Jan-23**	Period start	**22-Jan**	**1-Feb**	**15-Feb**	**1-Mar**	**16-Mar**	**1-Apr**	**15-Apr**	**1-May**	**15-May**
Total days		130	10	14	14	15	16	14	16	14	17
Accumative days			10	24	38	53	69	83	99	113	130
Effective grazeable area (ha)		**160.0**	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0	160.0
Remove or add area			0	0	0	0	0	0	0	0	0
Feed demand											
Total cows on farm			**558**	**558**	**558**	**558**	**558**	**558**	**475**	**475**	**475**
Cows Calving (No. in each period)											
Cows dried off /**culled** (first day of period)									**83**		
Average milking cows			**558**	**558**	**558**	**558**	**558**	**558**	**475**	**475**	**475**
Intake dm/day			17.5	17.5	17.5	17.5	17.0	17.0	16.0	16.0	16.0
Total feed demand /ha		7,246	61	61	61	61	59	59	48	48	48
Stocking rate (cows/ha)			3.5	3.5	3.5	3.5	3.5	3.5	3.0	3.0	3.0
			kgs dm/ha/day								
Pasture growth		**6,521**	**60**	**63**	**63**	**60**	**54**	**51**	**46**	**37**	**25**
Total supplement		58,869 kgDM	Supplements feed per day in each period								
Milking cow supplement		**Intake/cow/day**				**2.5**	**2.5**	**2.0**			
Baleage	bales	196.2	0.0	0.0	0.0	4.7	4.7	3.7	0.0	0.0	0.0
	kgDM/day fed	58,869	0	0	0	1,395	1,395	1,116	0	0	0
Total (kgDM/ha/day)		368	**0**	**0**	**0**	**9**	**9**	**7**	**0**	**0**	**0**
Total feed supply kgDM/ha/day		6,889	60	63	63	69	63	58	46	37	25
Pasture cover											
Cover change kgDM/ha/day		-357	-1.0	2.0	2.0	7.7	3.4	-1.3	-1.5	-10.5	-22.5
Predicted pasture covers		**2,300**	**2,290**	**2,317**	**2,345**	**2,460**	**2,515**	**2,497**	**2,473**	**2,326**	**1,943**

Notes to feed budget:

- Assumption of 80% silage utilisation.
- Assumption of 90% pasture utilisation.

Our team

- Winter and Spring 2024 completed with 4 full-time staff.
- November to January, 3 full time and 1 casual.
- January and February, 4 full time and 1 casual.
- Staff roster 5 days on, 2 days off all season.

LUDF Finances

23/24 Actual Finances

Peak Cows	560 cows	
Total	261,894	
Per cow	467.6 kg MS/cow	
Per Ha	1,637 kg MS/ha	
Milk Price	$7.83 / kg MS	
Farm Operating Expenditure		$5.85 / kg MS
Total Operating Expenditure		$1,531,967
EBIT	$644,961	$4,031 / ha

Measure	24/25 Budget	24/25 Reforecast
Peak Cows	560	560
Total	266,000 kg MS	266,000 kg MS
Per cow	475 kg MS/cow	475 kg MS/cow
Per Ha	1,663 kg MS/ha	1,663 kg MS/ha
Milk Price	$8.50 / kg MS	$10.00 / kg MS
Farm Operating Expenditure	$5.50 / kg MS	$5.49 / kg MS
Total Operating Expenditure	$1,464,257	$1,459,379
EBIT	$ 966,183 or $6,039 / ha	$1,382,932 or $8,643 / ha

Notes to Budget:

- Culls – Budget 101, forecast 96 due to R2 MT's. Cull price and timing (June).
- Heifer replacements – sold 86 *cf* 123 due to retaining 18% compared to budgeted 15%.
- Beef calves – 69 calves sold *cf* to 43 sold
- Animal health – addition costs with implementation of routine mastitis testing and treatments.
- Dairy Shed – chemicals on hand at start of season
- Electricity – Irrigation (wet season), dairy shed (primarily unit price)
- Feed – Current forecast is 400 kg DM/cow compared to 450 kg DM/cow budgeted.
- Winter Grazing – mob sizes for light:mid:heavy. Budget – 100:252:100 Actual – 176:228:49
- Youngstock Grazing – additional calves retained
- Fertiliser – change in product and price
- Cultivation – full cultivation required

LUDF Finances

LUDF Reforecast vs Budget 2024/25									
BUDGET					REFORECAST				
266,000 $/kg MS	560 $/cow	160 $/ha	2024/25 $	Description	2024/25 $	Variance	266,000 $/kg MS	160 $/ha	560 $/cow
				Income					
0.03	16.65	48.92	7,827	Sales - Bobby Calves	7,809	-18	0.03	48.81	13.94
0.03	9.99	43.75	7,000	Sales - R2 Heifers	20,400	13,400	0.08	127.50	36.43
0.00	0.00	0.00		Sales - Bulls		0	0.00	0.00	0.00
0.25	121.56	409.66	65,546	Sales - Cows	74,926	9,380	0.28	468.29	133.80
0.25	0.00	422.30	67,568	Sales - Surplus heifer calves	48,908	-18,660	0.18	305.68	87.34
0.08	77.33	134.38	21,500	Sales - Beef calf Sales	30,268	8,768	0.11	189.18	54.05
0.64	**225.53**	**1,059.00**	**169,441**	**Total Stock Sales**	**182,311**	**12,870**	**0.69**	**1,139.44**	**325.56**
8.50	3,661.84	14,131.25	2,261,000	Sales - Milk Solids Current Season	2,660,000	399,000	10.00	16,625.00	4,750.00
0.00	0.00	0.00		Sales - Co-operative Difference		0	0.00	0.00	0.00
0.00	0.00	0.00		Sales - Feed, Silage, Other Crops		0	0.00	0.00	0.00
0.00	0.00	0.00		Income - Other		0	0.00	0.00	0.00
9.14	**3,887.37**	**15,190.25**	**2,430,441**	**TOTAL REVENUE**	**2,842,311**	**411,870**	**10.69**	**17,764.44**	**5,075.56**
				Expenses					
1.13	497.16	1,881.25	301,000	Labour	298,237	2,763	1.12	1,863.98	532.57
0.04	15.49	62.50	10,000	Staff Costs: ACC, Super, H&S, Clothing	13,105	-3,105	0.05	81.91	23.40
1.17	**512.65**	**1,943.75**	**311,000**	**Total Labour Expenses**	**311,342**	**-342**	**1.17**	**1,945.89**	**555.97**
0.31	131.08	509.37	81,498	Animal Health	86,578	-5,080	0.33	541.11	154.60
0.28	130.16	458.11	73,297	Breeding	73,297	-0	0.28	458.11	130.89
0.04	20.26	73.55	11,767	Dairy Shed Operating Expenses	5,150	6,617	0.02	32.19	9.20
0.08	39.41	137.50	22,000	Electricity - Other	26,500	-4,500	0.10	165.63	47.32
0.25	116.55	412.50	66,000	Electricity - Irrigation	54,276	11,724	0.20	339.23	96.92
0.55	437.90	919.52	147,122	Feed Made/Purchased	129,562	17,560	0.49	809.76	231.36
0.64	306.42	1,068.08	170,892	Grazing - Winter	179,926	-9,034	0.68	1,124.54	321.30
0.07	36.24	112.49	17,998	Freight - Livestock	19,318	-1,320	0.07	120.74	34.50
0.33	196.40	541.18	86,589	Youngstock Grazing	93,038	-6,449	0.35	581.49	166.14
0.24	85.42	395.31	63,250	Calf Rearing	63,858	-608	0.24	399.11	114.03
0.28	128.27	457.41	73,186	Fertiliser -Nitrogen	62,285	10,901	0.23	389.28	111.22
0.14	54.82	229.63	36,741	Fertiliser - Other	35,566	1,175	0.13	222.29	63.51
0.07	33.55	122.17	19,547	Fertiliser - Spreading	21,111	-1,564	0.08	131.94	37.70
0.04	21.33	67.50	10,800	Seed	9,720	1,080	0.04	60.75	17.36
0.08	39.39	138.28	22,125	Contractors - Regrassing	31,172	-9,047	0.12	194.83	55.66
0.01	1.25	9.38	1,500	Weed & Pest Control	500	1,000	0.00	3.13	0.89
0.07	32.87	113.50	18,160	Vehicle Expenses	18,160	0	0.07	113.50	32.43
0.06	30.09	93.75	15,000	Vehicle - Fuel	15,000	0	0.06	93.75	26.79
0.09	51.26	146.88	23,500	R&M - Land & Buildings	20,803	2,697	0.08	130.02	37.15
0.09	46.09	156.25	25,000	R & M - Irrigation	24,050	950	0.09	150.31	42.95
0.19	115.36	312.50	50,000	R & M - Plant, Machinery, Other	59,751	-9,751	0.22	373.44	106.70
0.01	15.20	9.38	1,500	R & M - Farm Houses	1,032	468	0.00	6.45	1.84
0.00	1.03	3.13	500	Freight	474	26	0.00	2.96	0.85
0.04	8.93	62.50	10,000	EcoPond	9,165	835	0.03	57.28	16.37
0.05	11.79	81.25	13,000	Administration	16,460	-3,460	0.06	102.88	29.39
0.05	10.71	75.00	12,000	Consultant	12,000	0	0.05	75.00	21.43
0.05	18.31	80.00	12,800	Fixed Charges - Rates	11,803	997	0.04	73.77	21.08
0.04	17.14	60.00	9,600	Fixed Charges - Land Rent	9,599	1	0.04	59.99	17.14
0.09	18.07	156.14	24,983	Lease - Technology (Collars)	24,983	0	0.09	156.14	44.61
0.05	32.69	83.13	13,300	DairyNZ Levy	13,300	0	0.05	83.13	23.75
5.43	**2,700.66**	**9,029.11**	**1,444,657**	**TOTAL FARM WORKING EXPENSES**	**1,439,779**	**4,878**	**5.41**	**8,998.62**	**2,571.03**
3.71	**1,186.72**	**6,161.14**	**985,783**	**CONTRIBUTION PROFIT**	**1,402,532**	**416,749**	**5.27**	**8,765.83**	**2,504.52**
0.07	35.00	122.50	19,600	*less* East Block Adjustment - Support block	19,600	0	0.07	122.50	35.00
5.50	**2,735.66**	**9,151.61**	**1,464,257**	**Total Operating Expenses inc East Block**	**1,459,379**	**4,878**	**5.49**	**9,121.12**	**2,606.03**
				Financial Ratios					
$8.50	$3,662	$14,131	$2,261,000	Milk Gross income	$2,660,000	$399,000	$10.00	$16,625	$4,750
$0.64	$226	$1,059	$169,441	Stock Gross income	$182,311	$12,870	$0.69	$1,139	$326
$9.14	$3,887	$15,190	$2,430,441	Total Gross income	$2,842,311	$411,870	$10.69	$17,764	$5,076
$5.50	$2,736	$9,152	$1,464,257	*Less* Farm Operating Expenditure	$1,459,379	$4,878	$5.49	$9,121	$2,606
$3.63	**$1,152**	**$6,039**	**$966,183**	**EBIT**	**$1,382,932**	**$416,749**	**$5.20**	**$8,643**	**$2,470**

Smarter Inputs – Better Outcomes

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Smarter Inputs – Better Outcomes

Optimising Nutrients by Whole Farm Soil Testing

	Target Soil Test Level	LUDF 2024 Ave Soil Test
pH	5.8 +	5.9 – 6.4
Olsen P	30 +	13 – 43 (lower values in E block)
QTK	7 +	6 – 18
Sulphate	10 +	4 - 6

Whole Farm Soil Test – WFST
Soil sample every paddock
Block paddocks into soil test ranges for pH and P
Develop a variable rate programme of capital, maintenance, sub maintenance fertiliser

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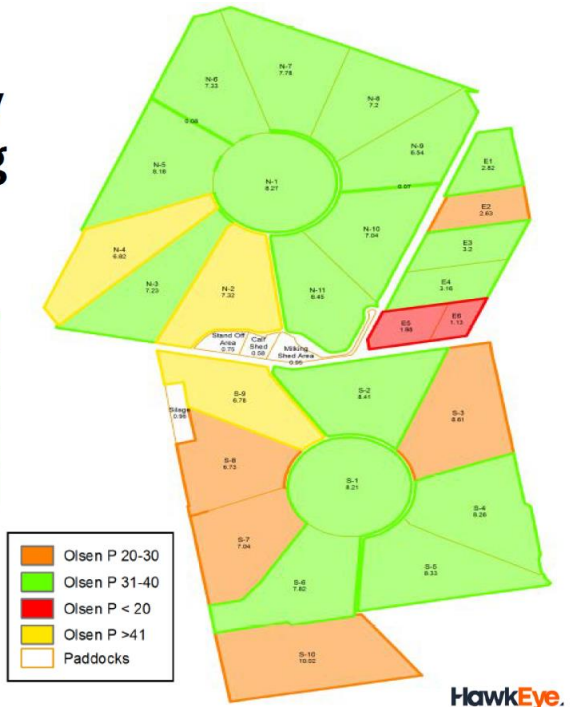
Smarter Inputs – Better Outcomes

Optimising Nutrients by Whole Farm Soil Testing

Variable rate plan - 2024	
3ha	60 kg P and 74 kg S/ha (670 kg super/ ha)
35 ha	45 kg P and 55 kg S/ha (500 kg super/ha)
117 ha	35 kg P and 43 kg S/ha (390 kg super/ha)
21 ha	20 kg P and 34 kg S/ha (230 kg super/ha)



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Smarter Inputs – Better Outcomes

Efficient use of N to fill feed gaps

Principles of N fertiliser use

1. Nitrogen fertiliser is a growth multiplier and best responses are obtained when pasture is growing fastest and is N deficient.
2. Smaller application, more often are more efficient in terms of pasture response than fewer larger applications on dairy farms.
3. In pastures, leaf grows leaf. Allow pastures to recover form grazing/mowing before applying N fertiliser.
4. N fertiliser responses take time to develop in pastures, the longer you spell the pasture before grazing the higher response you will get.

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Smarter Inputs – Better Outcomes

Efficient use of N to fill feed gaps

The N cap – 190 kg N/ha limit

1. The limit of 190 kg/ha/yr of nitrogen averaged over the whole area in pastoral land use within each contiguous land on the farm.
2. An absolute limit of 190 kg of nitrogen per year on any 1 hectare of pasture.

Nitrogen limit for other pastoral land (eg land use of fodder crops grazed in situ)

On other pastoral land, due to the nutritional needs of some in-situ plants, more than 190 kg N/ha/yr of nitrogen may be applied, provided that corresponding reductions are made to the nitrogen being applied to pastoral land on the same farm so that the average across all the land in pastoral land use is no greater than 190 kg N/ha/yr.

Smarter Inputs – Better Outcomes

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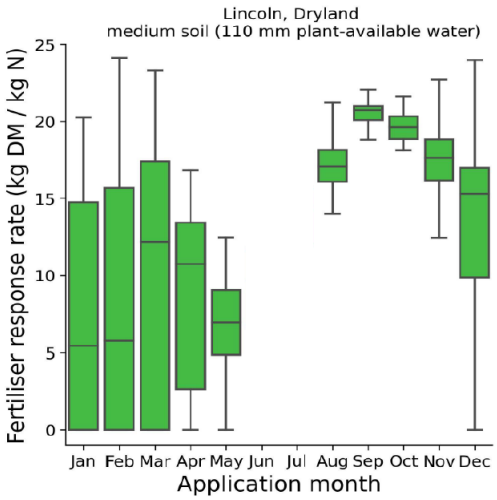
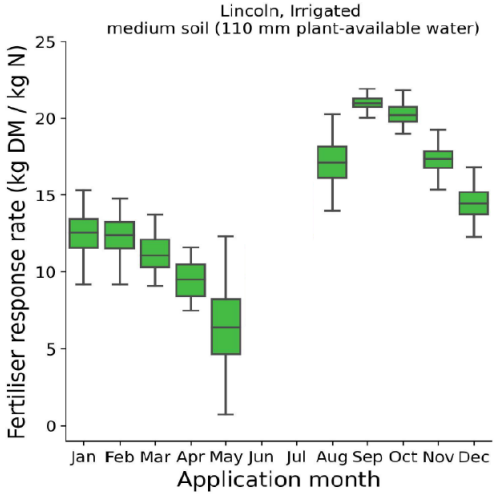
N response rate – Dryland vs Irrigated





Smarter Inputs – Better Outcomes

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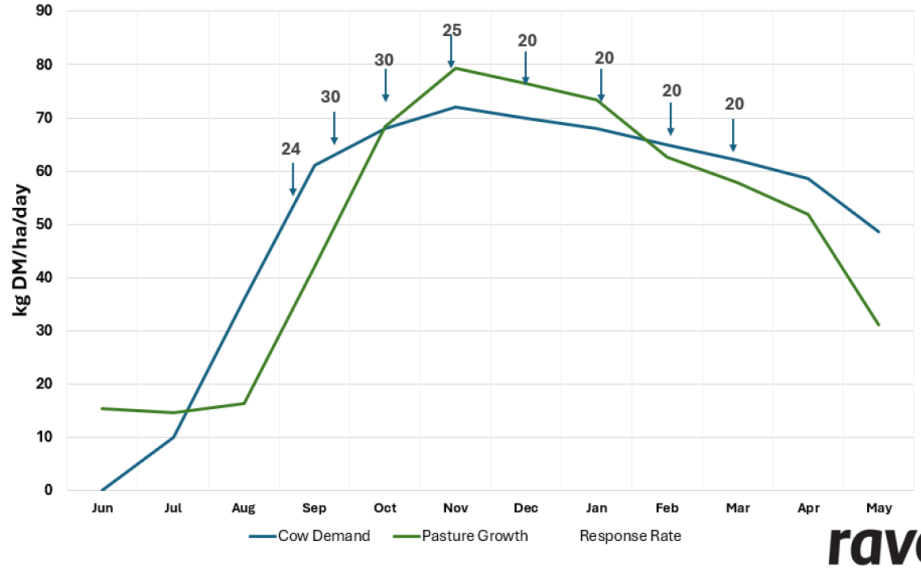
Cow Demand and Pasture Growth



Month	Growth
Jun	15
Jul	15
Aug	16
Sep	42
Oct	68
Nov	**79**
Dec	**76**
Jan	**73**
Feb	63
Mar	58
Apr	52
May	31

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Smarter Inputs – Better Outcomes

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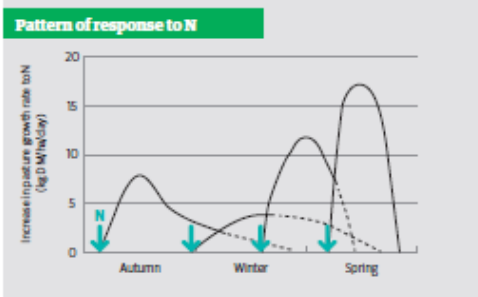
Nitrogen Fertiliser Best Management Practice (BMP) for pasture response

1. Nitrogen fertiliser is a growth multiplier and best responses are obtained when pasture is growing fastest and is N deficient.



Response durations will be typically

May/June/July:	12-15 weeks
Aug/Sept/Oct:	8-12 weeks
Nov/Dec:	6-8 weeks
Mar/Apr/May:	8-12 weeks

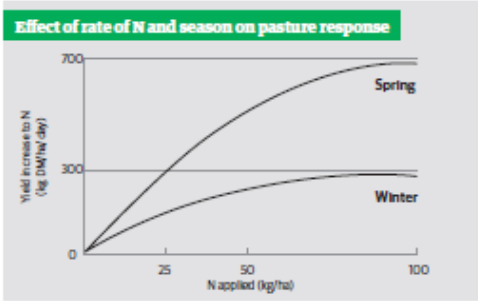
BMP1: Start applying late winter/early spring N when soil temperatures (10cm) are 6°C and rising and in autumn while soil temperatures are still above 8°C.

Use a urease inhibited urea product from spring until autumn.

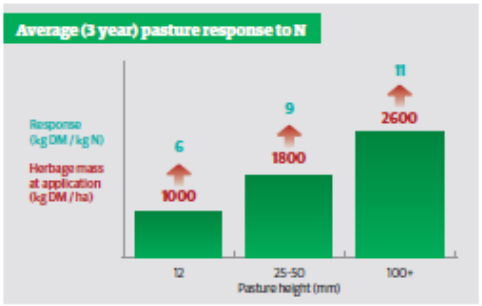
NB: Winter applications of N fertiliser are either discouraged as not best practice or are discouraged as part of operative regional plans.

2. Smaller applications, more often are more efficient in terms of pasture response than fewer larger applications on dairy farms.

BMP2: Application rates between 25 to 50 kg N/ha at each application are best.



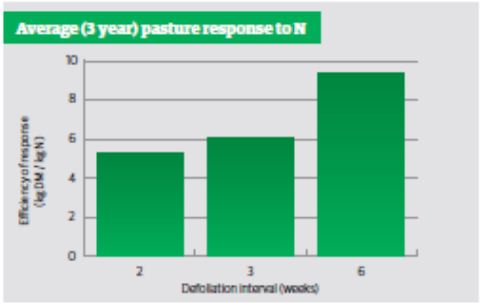
3. In pastures, leaf grows leaf. Allow pastures to recover from grazing/mowing before applying N fertiliser.



The response took 7 weeks to grow at the lowest herbage mass and 3 weeks at the highest herbage mass.

BMP3: Apply N fertiliser to pastures with more than 1500 kg DM/ha and less than 1800 kg DM/ha residual cover.

4. N fertiliser responses take time to develop in pastures, the longer you spell the pasture before grazing the higher response you will get.



BMP4: Where possible allow the pastures 25-30 days to grow before grazing and 35 to 42 days before cutting (hay or silage)

cont...

Using Nitrogen Fertiliser on Dairy Farms under a 190kg N/ha cap

Historical context

Studies in the 1970s and 1980s found that even well-managed ryegrass/white-clover pastures in New Zealand were nitrogen (N) deficient. Tactical use of N fertiliser from early spring to late autumn showed that good pasture responses were achievable, but care must be taken to avoid long-lasting shading of clover plants so that their ability to fix atmospheric N was not compromised.

From the 1990s, year on year increases in N fertiliser use indicated a move away from the reliance on clover N fixation to provide N for pasture growth. Particularly in irrigated dairying, N fertilised pasture was easier to manage because its growth was more predictable than clover-based pasture, with less yearly variation.

It is nearly always cost effective to apply N fertiliser during good growth conditions if the additional pasture can be efficiently used to produce milk. However, higher N applications driving increased pasture yields increases animal N (mainly as protein) intake per hectare. Any protein which is surplus to animal requirements for body growth, maintenance and production is excreted as urinary nitrogen. This decreases the efficiency of fertiliser N use, increases the farm's N surplus and the risk of nitrogen loss to the environment.

Efficiency considerations

When determining the efficiency of N fertiliser application, consider the following indicators:

1. Farm N surplus or surplus of purchased N (i.e., Fertiliser N + Supplement N - N in meat, milk, crops sold): Efficiency gains are possible whenever the surplus of purchased N is relatively high.

   (**Note:** *Overseer's N surplus includes N inputs from biological fixation and irrigation water and is therefore higher than the surplus of purchased N.*)

2. Amount (kgs) of milk solids (MS) produced/kg N fertiliser: When production is <6kg MS/kg N fertiliser, a reduction in total N fertiliser applied is likely to be profitable.

Optimising nitrogen fertiliser use

- Ideally pasture height needs to be above 3.5cm (~1500kg DM/ha) before applying N fertiliser.
- Fertiliser N can be applied up to 4 days prior to grazing (i.e., ahead of the cows) without incurring a response penalty in the following regrowth period.
- Grazing from four to 14 days after application is associated with higher N excretion in urine and, therefore, higher risk of N loss to the environment.
- In spring, it takes 25-30 days after application to optimise DM yield before the first grazing*.
- For silage and hay crops, allow the pasture to respond for up to 40-50 days to maximise yield and minimize post-harvest depression of regrowth.
- In autumn, it may take up to 30-40 (autumn) days after application to optimise DM yield before the first grazing.
- At low soil temperatures (<6°C) pasture growth is limited and responses will be slow and limited.
- At high soil temperatures (>16°C) pasture growth and nitrogen response will also be limited.
- Grazing should take place at the 2.5 to three-leaf stage of perennial ryegrass to ensure pasture quality is maintained and high growth rates are utilised. However, prolonged shading of the plant base should be avoided because it will reduce clover branching and grass tillering.

***Note:** Irrigated ryegrass dominant pastures (e.g., Canterbury) may need to be grazed between 20-25 days at peak spring growth rates

Using Nitrogen Fertiliser on Dairy Farms under a 190kg N/ha cap

How to reduce N fertiliser use

- Manage your pastures to maximise clover content and function. Ensure soil fertility is optimal and introduce clover into pastures which have little or none.
- Understanding average annual pasture growth pattern and animal feed demand will identify areas where there is a significant mismatch between supply and demand. This will assist in developing a strategy to fill the deficits i.e., with N fertiliser, supplementary feed or both.
- Monitor feed supply regularly and use a feed wedge to make tactical decisions around timing of N application.
- Utilise farm dairy effluent on as large an area of the farm as possible.
- For the first (late winter/early spring) and last (autumn) N application, consider co-applying N fertiliser (liquid or solid) at half the normal rate with gibberellic acid (sprayed on).
- Apply up to a maximum of 50kg N/ha, depending on predicted feed deficit and the likely response to the N (i.e., kg DM/kg N). Higher rates of application (e.g., 40-50 kg N/ha) are useful when conditions for pasture growth are optimal and pasture surplus to requirements for grazing is harvested for silage.
- Where multiple N applications are applied through the season (e.g., following each grazing) consider applying 5-10 kg N/ha less (to a minimum of 20 kg N/ha) each application.
- From spring through until autumn, if using urea fertiliser use a urease inhibitor coated product.
- Ensure round length is not faster than the period needed for optimising yield response (e.g., 25-30 days in spring) at the first grazing and that pasture is consistently grazed at the 2.5 to three-leaf stage.

- Skip a few paddocks from routine applications when pasture growth rates are high and silage making is not wanted or needed.
- Skip N applications on paddocks in summer when clover content is high and when high soil temperatures will limit the response.
- Ensure N fertiliser is applied at the right rate to the paddocks targeted. Use spreading equipment which has proof of placement technology.

Acknowledgement

Some of the information included in this document has been adapted from a DairyNZ article in Southern Rural Life (19th August 2020).

FarmRight
Investing Sustainably

Autumn Management

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Farm Consultant

Points to Cover

- Balancing Autumn Feed.
- Cow Condition.
- Drying off Strategies.

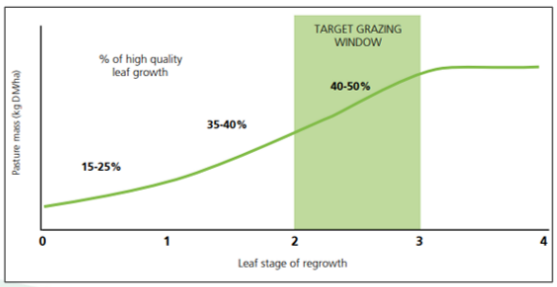
Primary Focus of Autumn Management

- Set up the farm with the appropriate APC for next spring.
- Maximise pasture quantity while maintaining quality.
- Ensure cow condition is on track to achieve the condition target for calving.

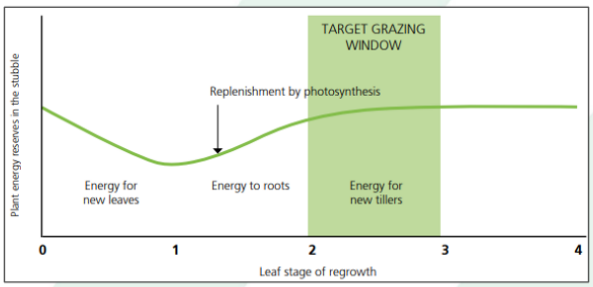
Balancing Autumn Feed – tools in the toolbox

- **Autumn Feed Budget:** is a tool that helps to understand feed supply and feed demand over a period of time, and support the decision making to achieve the selected closing APC target for the season.
- **Extend round length and build up APC:** start pushing covers when reproductive phase finishes and before growth rate starts to slow down, to extend milk production. Ensure grazing pastures are at 3-leaf stage.

Relationship between leaf stage and pasture mass



Relationship between leaf stage and plant energy reserves



Source: https://www.dairynz.co.nz/media/lezho5cz/technote-9_wb.pdf

Balancing Autumn Feed – tools in the toolbox

- Culling
- Drying off cows
- Changing milking frequency
- Use of supplement
- Nitrogen
- Gibberellic acid
- Back-fencing

Balancing Autumn Feed - Autumn Feed Budget

What is the outcome of the following scenarios?

- No action taken.
- Use of supplement only.
- Use of supplement and culling.

Balancing Autumn Feed - Autumn Feed Budget

			Autumn Feed Budget								
Start date	Date	Opening APC	22-Jan	1-Feb	15-Feb	1-Mar	16-Mar	1-Apr	15-Apr	1-May	15-May
			Scenario 1								
Cows dried off/ **culled** (first day of period)	Cows										
Milking cow supplement	kgDM/cow/day										
Predicted pasture covers	kgDM/ha	2,300	2,290	2,317	2,345	2,329	2,245	2,129	1,972	1,709	1,185
			Scenario 2								
Cows dried off/ **culled** (first day of period)	Cows										
Milking cow supplement	kgDM/cow/day					**2.5**	**2.5**	**2.0**			
Predicted pasture covers	kgDM/ha	2,300	2,290	2,317	2,345	2,460	2,515	2,497	2,340	2,077	1,553
			Scenario 3								
Cows dried off/ **culled** (first day of period)	Cows								**83**		
Milking cow supplement	kgDM/cow/day					**2.5**	**2.5**	**2.0**			
Predicted pasture covers	kgDM/ha	2,300	2,290	2,317	2,345	2,460	2,515	2,497	2,473	2,326	1,943

Cow Condition

- Monitoring cow condition allows you to take immediate action for at-risk cows.
- The average body condition target at calving is:
  - Condition 5.5 for first and second calvers.
  - Condition 5.0 for mixed-age cows.

Cow Condition - tools in the toolbox

- Draft cows by body condition, calving dates and age. Example:
  - Herd 1: Light and early calvers
  - Herd 2: Young cows
  - Herd 3: Empties, fats and lates
  - Herd 1: Main mob
  - Herd 2: Light and young cows

Cow Condition - tools in the toolbox

- Preferential feeding / use of supplement.
- Reduce milking frequency
  - OAD: At-risk cows (young cows, early calvers, light cows)
  - TAD: Good condition cows, late calvers
- **Drying off early at-risk cows**

Drying off Strategies

- Drying off early at-risk cows

Body condition score		Days cow needs to be dry before calving	
Cow	Rising 3-year old	Autumn pasture only	Autumn pasture and high quality supplement
3.0	3.5	160	120
3.5	4.0	130	100
4.0	4.5	100	80
4.5	5.0	70	60

Source: https://www.dairynz.co.nz/media/z0ynwz22/technote-27_web.pdf

Beyond the Bottom Line

'Turning your plans in to profit'

- What is a budget? **JD**
- How do you budget? **JD**
- Why should you budget? **FW**
- How to use the information **FW**
- Panel discussion **JD/FW**
  - Jeremy Duckmanton
  - Debbs Taggart

DFMS DAIRY FARM MANAGEMENT SERVICES BDO

What is a budget?

- A budget is "an estimate of income and expenditure for a set period of time".
- Time period is usually for 12 months of the financial year, but may be monthly *(if managing finances closely)* or cover several years *(say when purchasing a farm)*.
- A budget may be seen as a guideline for income and expenses or it could be viewed as setting the target or limit for income and expenditure.
- The budget is usually spread out over the time period - to create a cashflow forecast.

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How do you budget?

Budgeting Tools

- Accounting software packages have budgeting tools e.g. Farm Focus, Xero, Figured, MYOB.
- Can also use spreadsheets **OR** long-hand - pencil, paper and calculator.
- Information sources for budgeting:
  - Previous year cashbook
  - Financial accounts
  - Revenue indicators - Dairy Co, Milk Price Futures, Fonterra dividends
  - Pricing from suppliers
  - Accountant/Farm Advisor
  - Input from staff, managers, company directors

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How do you budget?

Budgeting Procedures

- Standard budgeting
  - Uses historical *(last year)* income and expenditure figures that are adjusted *(e.g. for inflation)* for the current period.
  - Simple procedure and used by accounting systems.
  - But doesn't assist in a "deep" understanding of the operations of a business.
- "Zero Budgeting"
  - the budget is built up from a zero base.
  - Requires a more detailed understanding of income and expenditure.
  - Budget "worksheets" are a good tool to assist this procedure.

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How do you budget?

Budgeting Procedures - Zero Budgeting Worksheets

- Have a worksheet for each major income and cost centre.
- Can be paper based but spreadsheets are a useful and flexible tool.
- Example:

Budget Worksheet						
Grazing	**No.**	**Weeks**	**$/week**	**Total Cost**	**Notes**	**Cashflow Timing**
Cow Winter Grazing						
- MA Cows	410	9	$34.00	$125,460	3/6-5/8	July-Aug.-Sept.
- R2Yr Heifers	90	12	$30.00	$32,400	1/5-16/7	June-August
Total Winter Grazing				**$157,860**		
R2 Yr Heifers	100	52	$16.00	$83,200	1/5-30/4	May-April
R1Yr Calves	100	20	$10.00	$20,000	12/12-30/4	Jan-May.
Total Grazing				**$261,060**		

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Why should you budget?

- Understand your business better.
- Give you confidence you are heading in the right direction.
- Provide information to make proactive, not reactive, decisions.
- Obtain finance for your business.
- Tax planning.

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How do you use the information?

Is this an interest or skill set you have?
If not - get help

How do you use the information?

Variance Reporting - "looking in the recent past"

- Compare Budget vs Actuals regularly
- What are the changes from the budget and why?
  - Timing of expenditure
  - Change in farming system
  - Variation in prices
  - Unexpected items
- Use this for the following purposes:
  - Identify changes to farming system
  - Let stakeholders know about changes
  - Identify changes to improve future budgets

How do you use the information?

Cashflow Forecasts

- Understand result for the full year and cash needed to run the business.
- Use variance report information to update cashflow forecasts.
- Will result in a 'living' forecast which is regularly changing.
- Plan investments or debt repayment with confidence.
- Let the bank know in advance what changes in facilities you need.

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How do you use the information?

What are the good farmers doing?

- Preparing budgets or getting Advisors to prepare them, but understanding results.
- Forming a team around them and using this information.
- Happy to be challenged and debate options.
- Once issues are considered, proactive decisions are made and implemented.

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Drying off Strategies

Dry off:

- Low producers and fat cows early – *"low producing cows put fat on their back instead of milk in your vat – DairyNZ"*
- High SCC cows to lower bulk milk SCC.

Summary:

Autumn Management

- **Set up the farm with the appropriate APC for calving** to ensure cows are fed well with good quality grass at calving.
- **Maximise pasture quantity while maintaining quality** by extending the round length and using tools like culling, drying off, and using supplements.
- **Monitor and manage cow condition** to achieve targets for calving using strategies like drafting cows based on condition, and drying off at-risk cows early.