

# 2024\_25 Season to date summary

## April 2025

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*DairyNZ* 



# Demonstration pivot – 2024-2026

## Goal:

- Identify and measure the outcomes of a future dairy farming system that can be adopted by southern dairy farmers
- A focal point to stimulate ideas and discussion on future systems

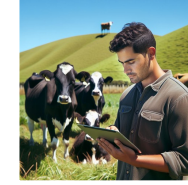
## Success metrics (KPI's):

- Environmental
- Animal
- Financial
- People



## Standard Herd

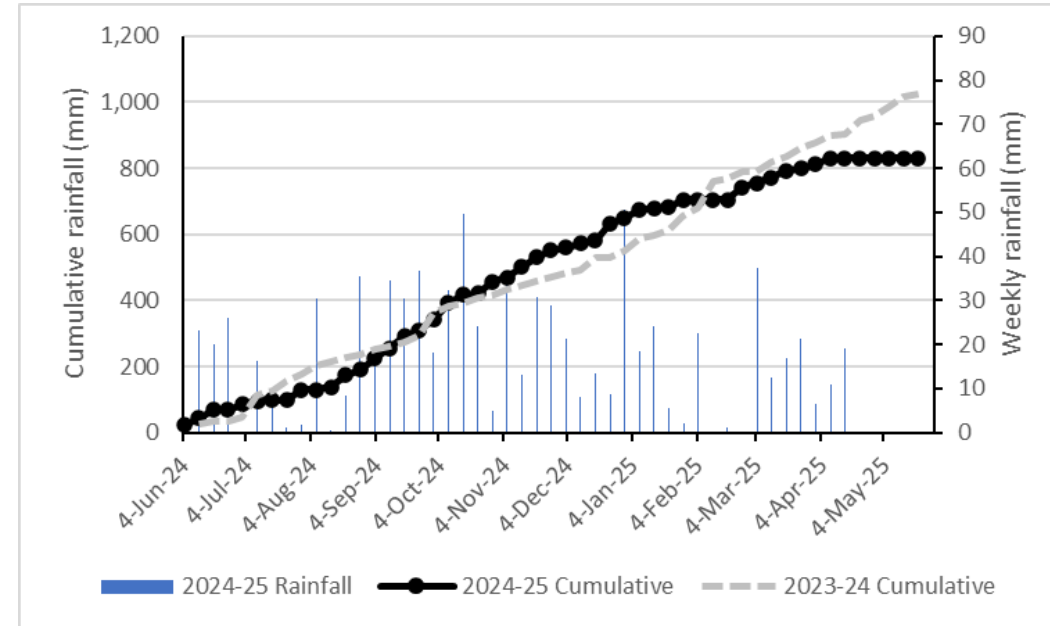
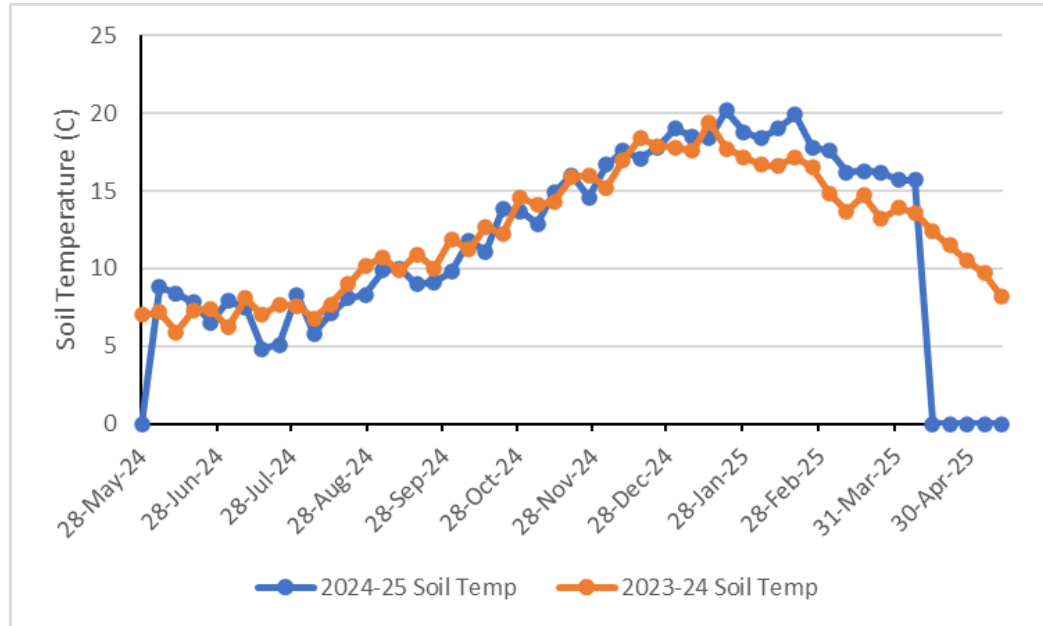
- Average breeding worth Southland herd (BW 251)
- 3.2 cows/ha
- 517 peak milked
- 174 ha pasture
- Wintered on swedes (23 ha)
- Herd level decision making



## Future Herd

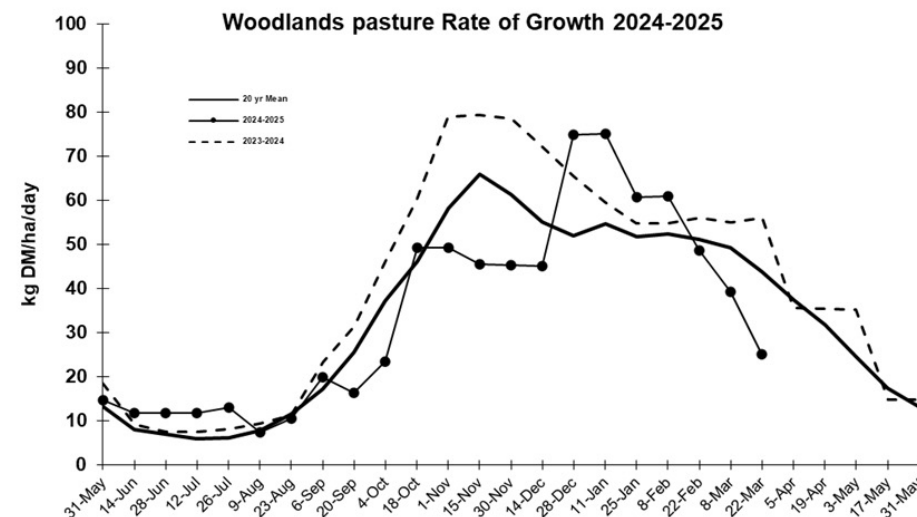
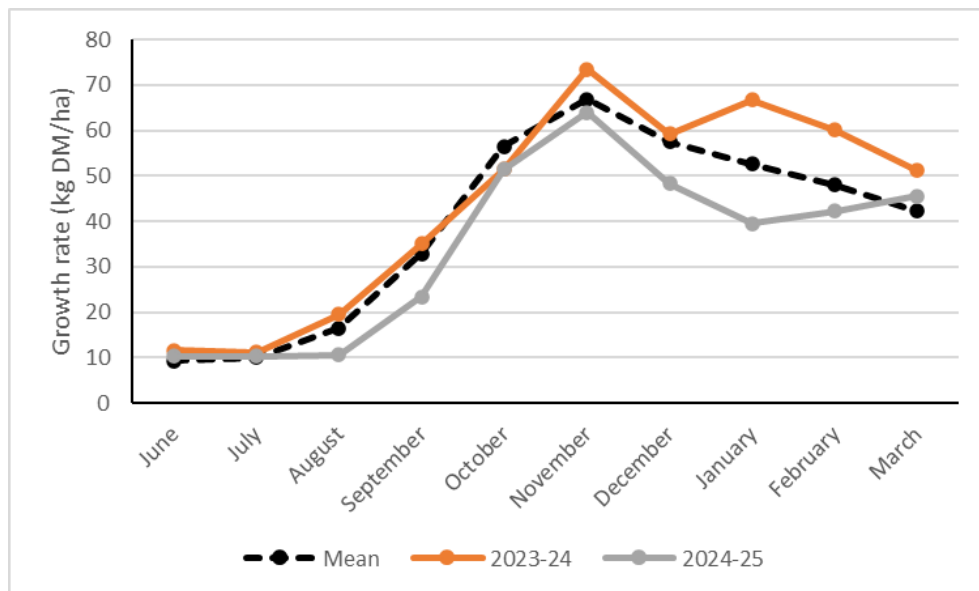
- Higher genetic merit herd (+125 BW; 376 BW)
- 2.5 cows/ha
- 214 peak milked
- 92 ha pasture
- Focus on locally grown supplement
- Wintered on baleage (13 ha)
- Every cow counts

# Growing conditions



- Higher summer & autumn soil temperatures
- Similar cumulative rainfall until early October but then wetter through Nov through Feb
- Significant period of waterlogged soils from April to December 2024

# Pasture Growth



- Lower N use season to date –120 kg N/ha across whole farm (up to 165 previously)
- 13.1 (Future) and 12.5 (Standard) T DM/ha grown season to date
- June-Mar growth: 13.3 T/ha vs 10.5 T/ha for 23/24 and 24/25 seasons respectively
  - i.e. farm has grown on average 3 T DM/ha less pasture this season to last

# Supplementary feed inputs

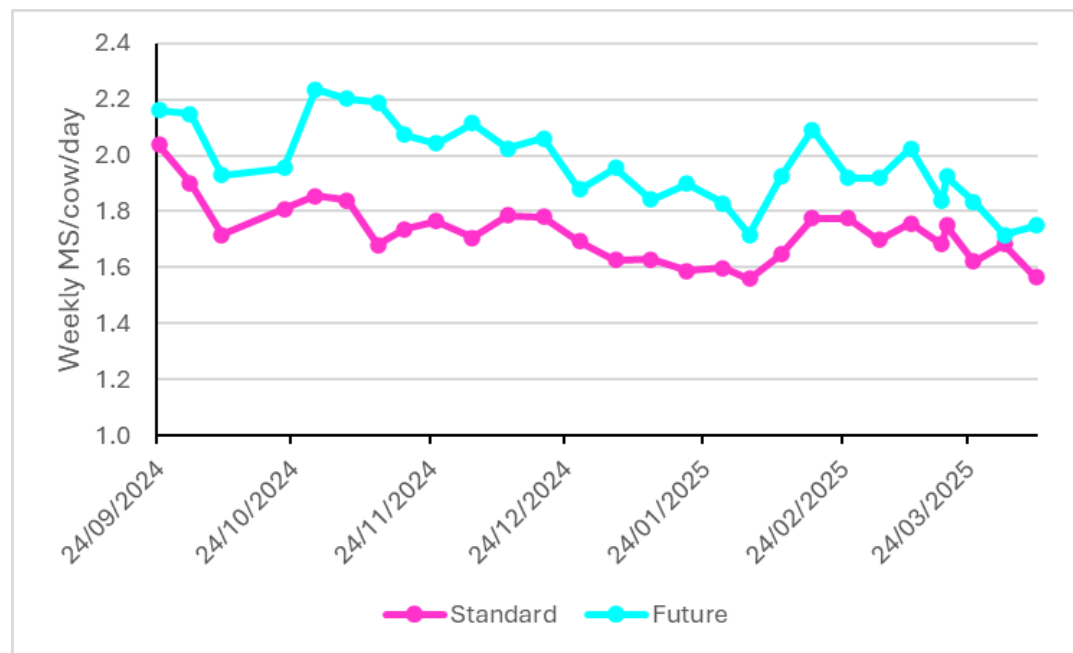
(kg DM/peak cow)

	Standard	Future
Inshed feed	572	477
Baleage	70	45
Silage	226	194
PKE in paddock	147	41
<b>Total Supplement</b>	<b>1014</b>	<b>757</b>

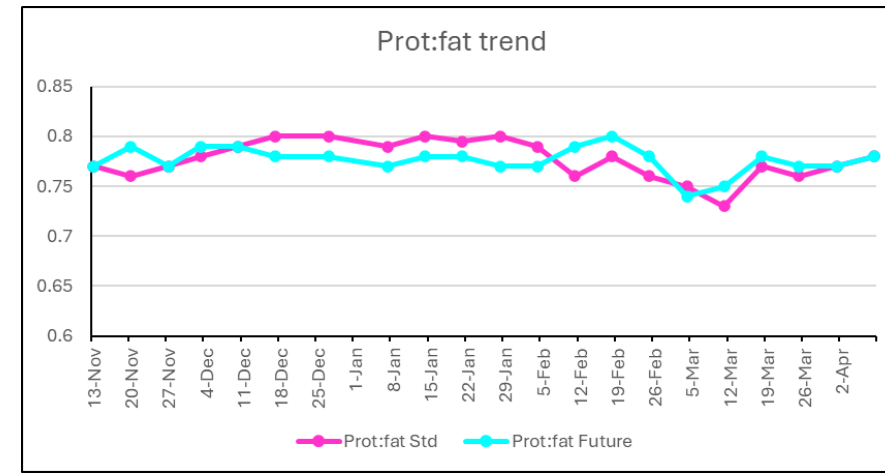
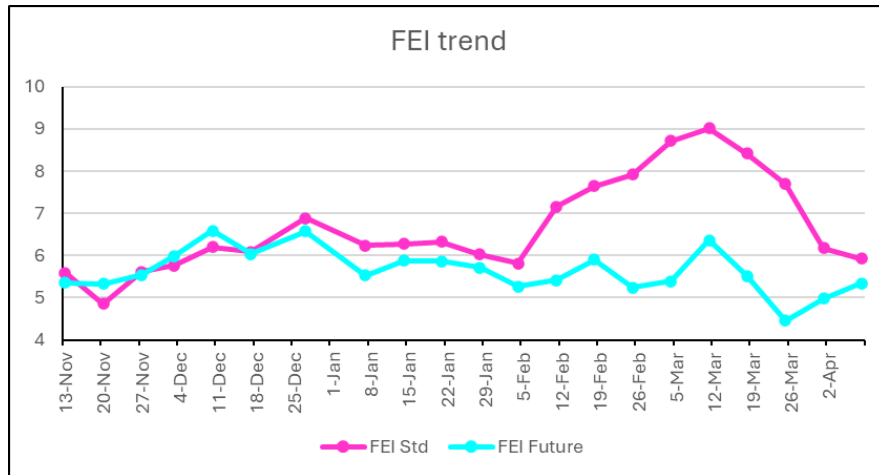
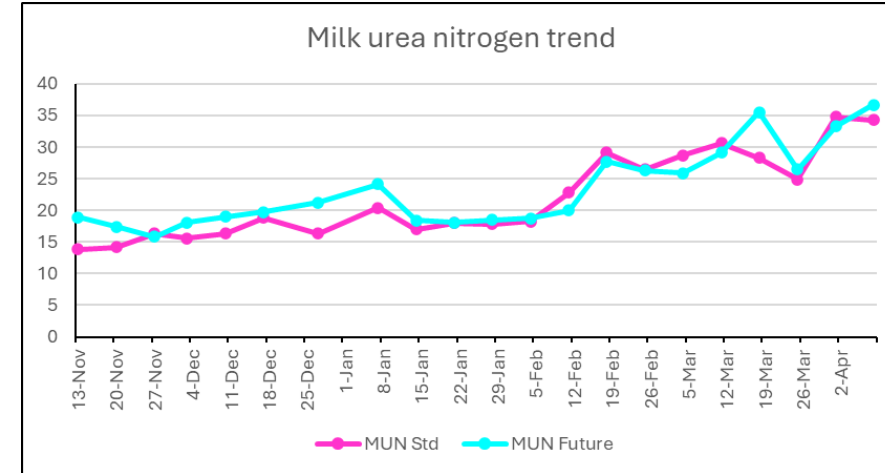
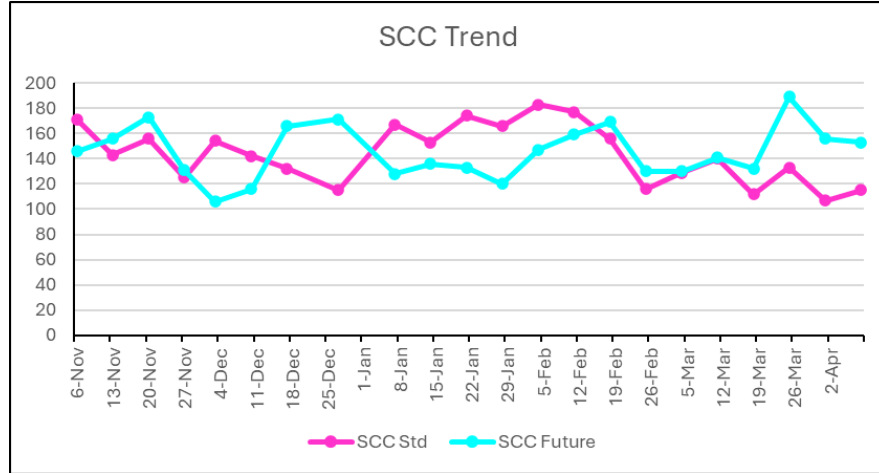
- At least 1 kg/cow per day inshed feed through spring to supply calcium and magnesium
- Significant additional supplement (silage & PKE) required through to late October
  - PKE fed in trailers with silage during the day from 4<sup>th</sup> till 25<sup>th</sup> October

# Milk production

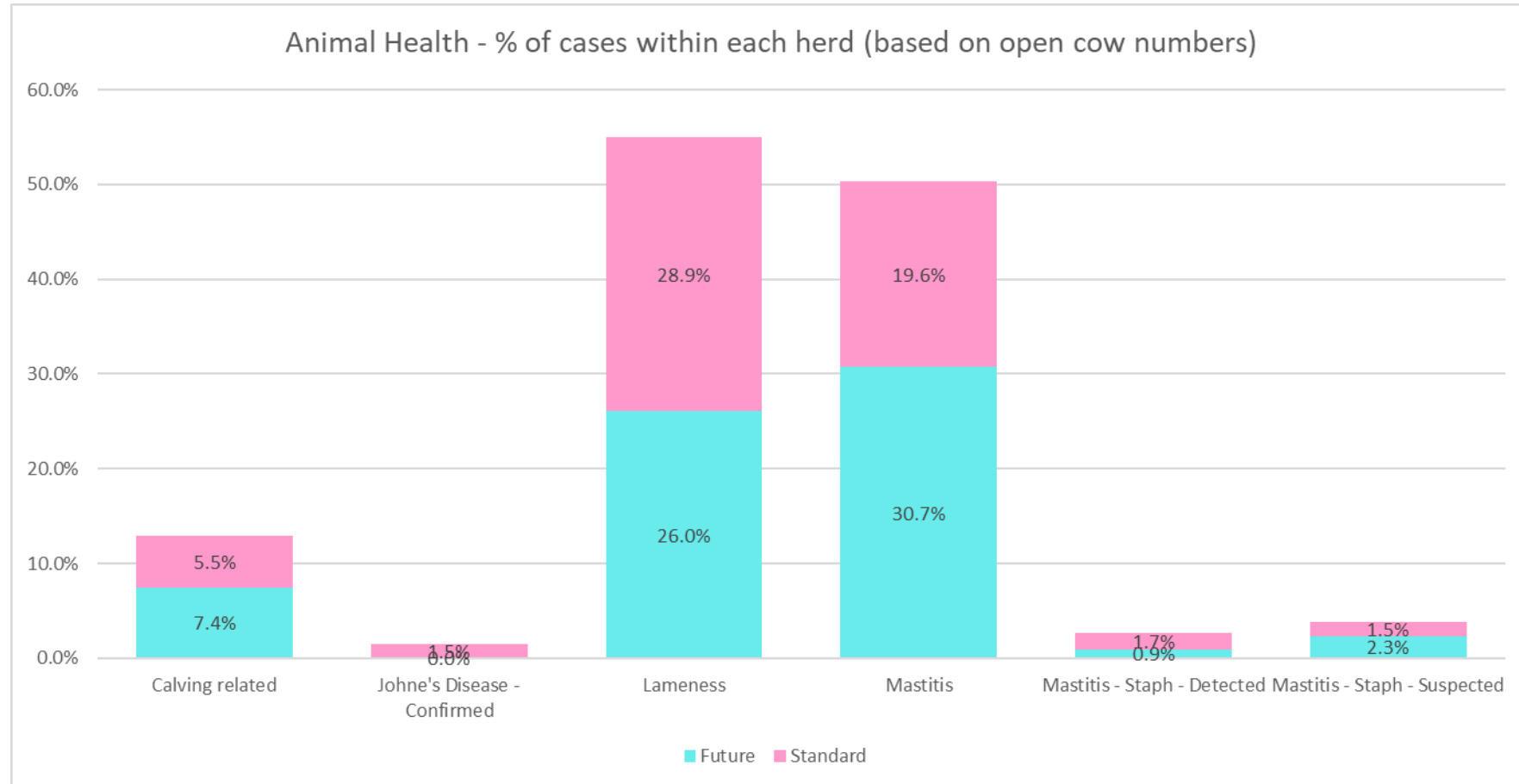
	Standard	Future
Milksolids (kg/cow) 9 Sep to 12 Apr	350	415
Milksolids (kg/total ha incl wintering)	916	896
Milksolids (kg/effective ha)	1036	970



# Milk quality trends



# Animal Health





# Conservation and Topping

	Standard	Future
Conserved (ha)	68.5	61.6
Topped (ha)	90.2	58.9
Total mown	158.7 (91%)	120.5 (132%)
Bales made	378	250 (+ 122 from Italians)
kg DM/cow	168	268 (+131)

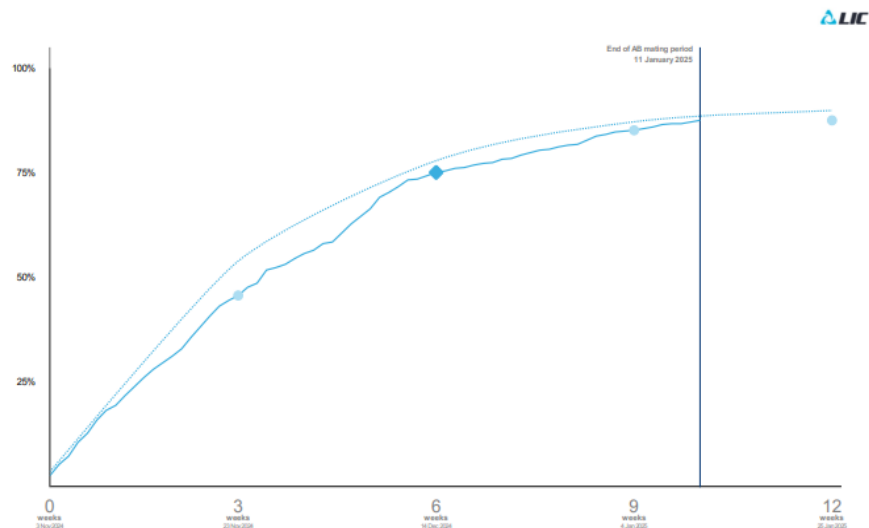
- Future herd balance date earlier than standards
- Topping to reset residuals in paddocks where residual was not met and not in a genuine surplus

# Reproductive Performance

## In-Calf Rates for Spring 2024 (RKLX)

### 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 2024	46%	75%	85%	88%	12%	LIC
Spring 2023	60%	74%	84%	88%	12%	LIC
Spring 2022	65%	81%	90%	90%	10%	LIC
Spring 2021	57%	74%	92%	93%	7%	LIC

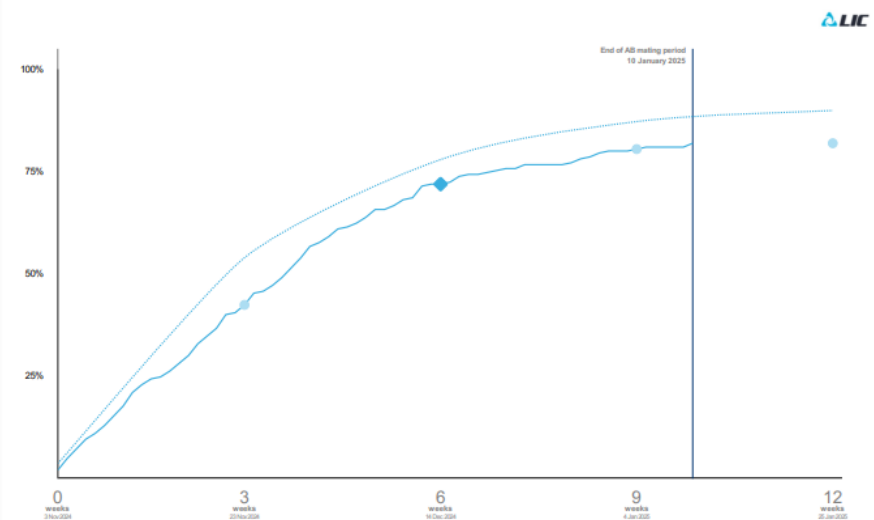
LIC  
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## In-Calf Rates for Spring 2024 (TBGH)

### 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 2024	42%	72%	80%	82%	18%	LIC
Spring 2023	62%	79%	86%	88%	12%	LIC
Spring 2022	58%	79%	86%	90%	10%	LIC
Spring 2021	57%	82%	90%	93%	7%	LIC

LIC  
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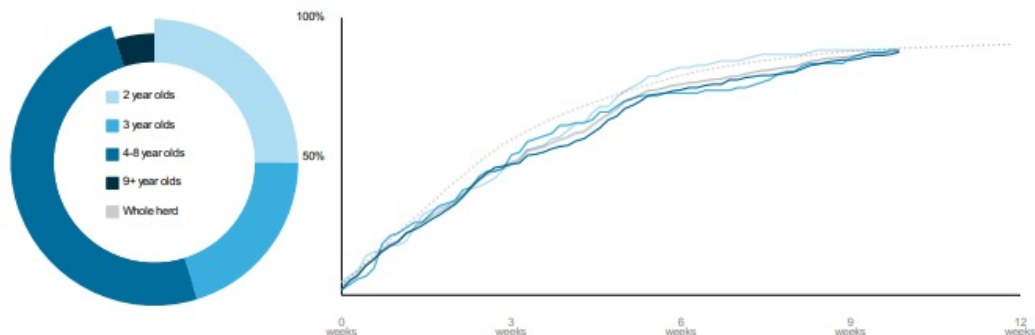


# Reproductive Performance

## In-Calf Rates for Spring 2024 (RKLX)

### In-Calf Rates by Age

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



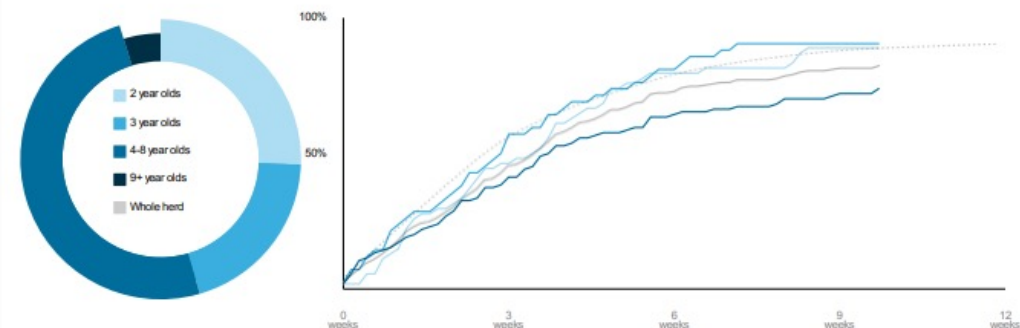
		In-calf rate					
Age Group	Count		3 weeks	6 weeks	9 weeks	9+ weeks	Not in-calf rate
Two year olds	128	25%	45%	81%	88%	88%	12%
Three year olds	103	20%	46%	73%	83%	88%	12%
Four to eight year olds	255	50%	46%	74%	85%	88%	12%
Nine+ year olds	25	5%	40%	68%	80%	80%	20%



## In-Calf Rates for Spring 2024 (TBGH)

### In-Calf Rates by Age

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					
Age Group	Count		3 weeks	6 weeks	9 weeks	9+ weeks	Not in-calf rate
Two year olds	54	26%	46%	80%	89%	89%	11%
Three year olds	42	20%	50%	81%	90%	90%	10%
Four to eight year olds	105	50%	38%	63%	71%	74%	26%
Nine+ year olds	10	5%	30%	80%	90%	90%	10%





# Reproductive Performance

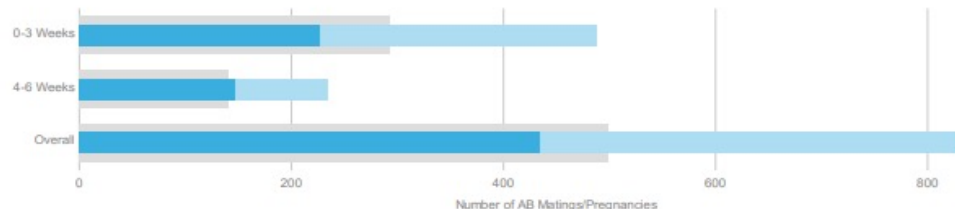


## Conception Rates for Spring 2024 (RKLX)

### Conception Rates for Whole Herd

Disclaimer: Please note: In some circumstances the calculation of conception rate overall between MINDA Reproduction and the Fertility Focus Report may vary. Conception rate calculations provided are indicative only.

The conception rate graph doesn't include cows with aged pregnancy results under 35 days so may appear under estimated.



	0-3 Weeks	4-6 Weeks	Overall
AB Matings	488	234	831
Target Pregnancies	293	140	499
Pregnancies	227	147	434
Conception Rate	47%	63%	52%



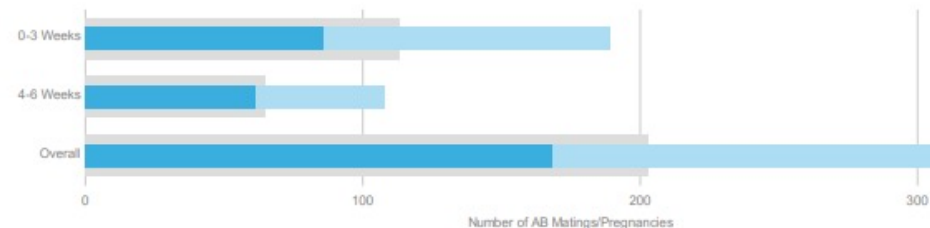
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## Conception Rates for Spring 2024 (TBGH)

### Conception Rates for Whole Herd

Disclaimer: Please note: In some circumstances the calculation of conception rate overall between MINDA Reproduction and the Fertility Focus Report may vary. Conception rate calculations provided are indicative only.



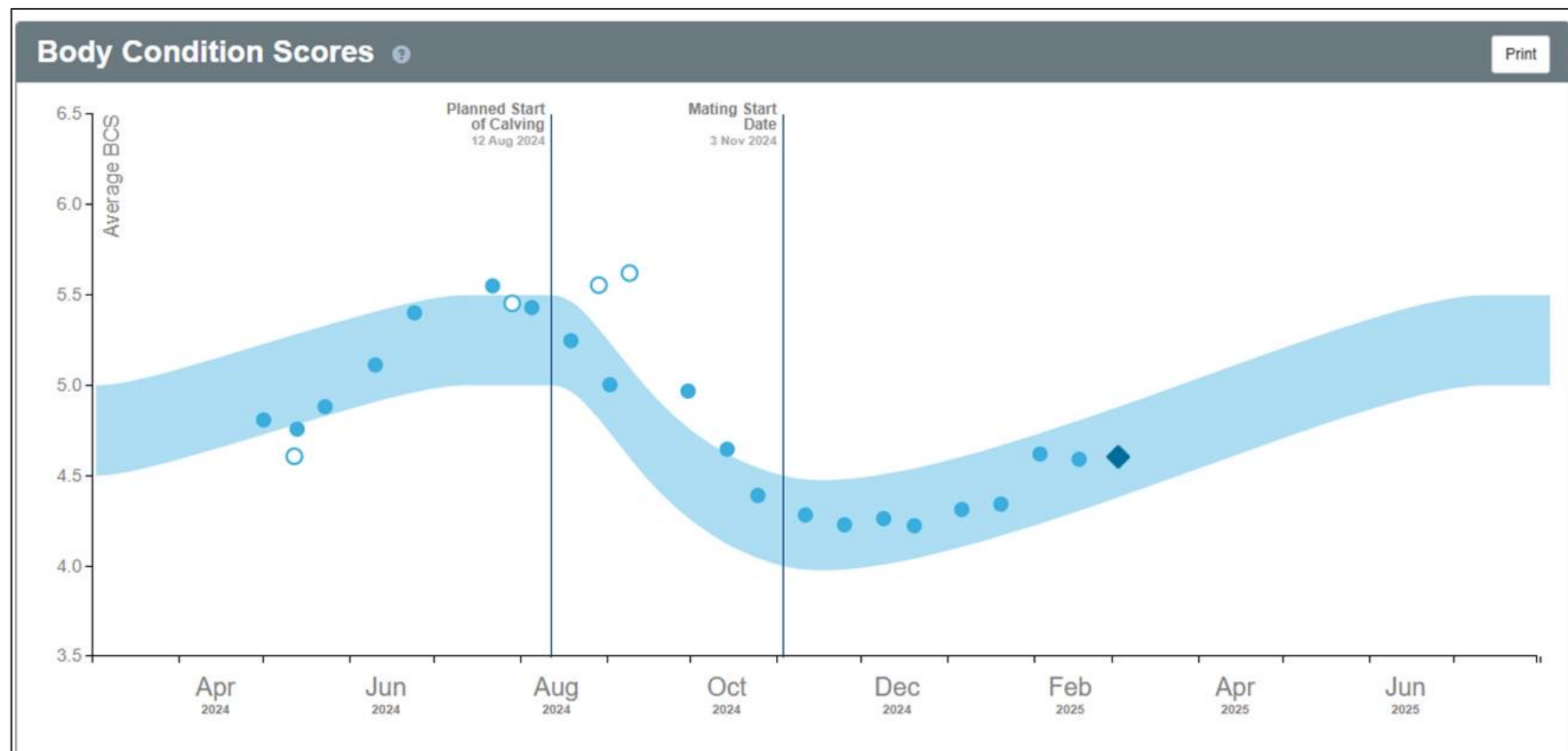
	0-3 Weeks	4-6 Weeks	Overall
AB Matings	189	108	338
Target Pregnancies	113	65	203
Pregnancies	86	61	168
Conception Rate	46%	56%	50%



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# Reproductive Performance



# Reproductive Performance

## Conception Rate - All matings

Select Product:													
All Together (use drop down)													
Week into Mating													
	1	2	3	4	5	6	7	8	9	10	11	12	13
Matings													
Conceptions													
Combined SDH CR% for All Together													
Expected Replacement Heifers													
Excluding All Together													
Week into Mating													
	1	2	3	4	5	6	7	8	9	10	11	12	13
Matings	252	214	219	128	118	100	40	38	44	38			
Conceptions	119	93	103	78	73	58	23	20	25	15			
Combined SDH CR% Excluding All Together	47%	43%	47%	61%	62%	58%	58%	53%	57%	39%			
Expected Replacement Heifers	74	58	46	36	34								
Total													

## Conception Rate – Sexed Semen

Select Product:													
Sexed Semen (use drop down)													
Week into Mating													
	1	2	3	4	5	6	7	8	9	10	11	12	13
Matings	86	85											
Conceptions	49	40											
Combined SDH CR% for Sexed Semen	57%	47%											
Expected Replacement Heifers	44	36											
Excluding Sexed Semen													
Week into Mating													
	1	2	3	4	5	6	7	8	9	10	11	12	13
Matings	166	129	219	128	118	100	40	38	44	38			
Conceptions	70	53	103	78	73	58	23	20	25	15			
Combined SDH CR% Excluding Sexed Semen	42%	41%	47%	61%	62%	58%	58%	53%	57%	39%			
Expected Replacement Heifers	29	22	46	36	34								
Total													



# Reproductive Performance



## Insights

Product	Animals Mated	Animals Conceived		Expected Replacement Heifers			
	Avg gBW of Animals Mated	Avg gBW of Dams In-Calf	Avg PW of Dams In-Calf	Number	Insems used	Expected Avg gBW	Expected Replacements Heifers at tagging
							24%
PS Forward Pack	318	321	344	161	4.1	437	122
Replacement	254	257	253				
Dairy	301	294	326				
Nominated- Dairy	298	234	208	5	4.5	343	4
Sexed Semen	377	379	411	80	2.1	481	61
All Together							
Total	312	312	331	246	3.4	449	187

# Milk Response Rates From Concentrates In Early Lactation At Different Post Grazing Residuals

Harkin Agricultural Consultants Ltd

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Conal Harkin MAgSc

## Research Trial Lincoln University

### Conal Harkin Masters Thesis

32 mixed parity friesian x jersey dairy cows were allocated to one of 4 treatments

- (1) Low Residual - 3.5 cm or 1,480 kg DM/ha (7 clicks)
- (2) Low Residual **Plus 4 kg Grain Supplement**
- (3) High Residual - 4.5 cm or 1,760 kg DM/ha (9 clicks)
- (4) High Residual **Plus 4 kg Grain Supplement**



# Research Trial Lincoln University

## Conal Harkin Masters Thesis

- Cows blocked for trial based on the following
  - Age -  $4.8 \pm 0.2$  years
  - DIM -  $15 \pm 2$  days
  - LW -  $427 \pm 13$  kg
  - BW -  $121.5 \pm 7.5$  BW
  - Previous MS production -  $389 \pm 7$  kg MS/cow/year
- Stocking Rate
  - 4.4 cows/ha – Non-supplemented herds
  - 4.9 cows/ha – Supplemented herds
- Supplement
  - 4 kg grain based concentrate (13.7 MJ ME/kg DM, 16% CP)
- Duration
  - 90 days (Post colostrum period)

# Research Trial Lincoln University

## Conal Harkin Masters Thesis

- Average short term milk response
  - 140 g MS/kg DM concentrate
    - High residual
      - 160 g MS/kg DM concentrate
    - Low residual
      - 120 g MS/kg DM concentrate

### • Dry Matter Intake

	Rotation	LR	LR+	HR	HR+
Pasture DMI kg	1	15.0	13.3	15.2	14.1
	2	15.2	13.2	15.5	13.4
	3	15.1	12.3	14.7	13.2
Total DMI kg	1	15.0	15.3	15.2	16.1
	2	15.2	15.8	15.5	16.6
	3	15.1	15.9	14.7	16.8

- Forage DMI was significantly lower for supplemented than unsupplemented groups throughout all three rotations
- Concentrate supplementation significantly increased total DMI throughout all 3 rotations

## Theory & Other Research

- Theoretically 76 MJ ME required to synthesize 1 kg MS
- Therefore 1 MJ ME of supplement should produce 13 g MS (1 kg or 1,000 grams divided by 76 MJ ME = 13)
- Therefore 12 MJ ME could produce maximum response of **156 g MS** (12\*13) if all the energy was partitioned to milk production
  - Lincoln Trial Concentrate -13.73 MJ ME = 178.5 g MS/kg DM Maximum Response – Average Response was **140 g MS/kg DM**
- Response rates in other research range from **80 – 100 g M/kg DM** across various supplement types



# Long Term Response Rates

## Commercial Farm Data

Real Farm - Gore Area	1819	1920	2021	2122	2223	2324	2425B
Herd Size	425	430	400	400	400	400	400
Hectares	160	160	160	160	160	160	160
Hectares - Pasture	152	152	152	152	152	152	152
Hectares - FB	8	8	8	8	8	8	8
Production - Total kg MS	158,376	175,330	167,509	174,538	198,548	208,155	200,000
Production - kg MS/cow/year	373	408	419	436	496	520	500
Production - kg MS/ha/year	990	1,096	1,047	1,091	1,241	1,301	1,250
Total Supplement Per Cow (t DM)	0.80	1.29	1.36	1.63	1.56	1.99	2.17
Additional Supplement Per Cow (t DM)		0.49	0.56	0.82	0.76	1.19	1.36
Average Cost Supplement Per Tonne	\$ 450						
Total Additional Supplement (t DM)		210	224	330	304	474	546
Cost of Additional Supplement		\$ 94,622	\$ 100,800	\$ 148,320	\$ 136,800	\$ 213,480	\$ 245,520
Additional Milk Produced (kg MS)		16,954	9,133	16,162	40,172	49,779	41,624
Milk Price - Actual	\$ 6.35	\$ 7.14	\$ 7.54	\$ 9.30	\$ 8.22	\$ 7.83	\$ 10.00
Value of Additional Milk - Actual		\$ 121,052	\$ 68,863	\$ 150,307	\$ 330,214	\$ 389,770	\$ 416,240
MOFC - Actual		\$ 26,430	-\$ 31,937	\$ 1,987	\$ 193,414	\$ 176,290	\$ 170,720
Milk Price - Variable	\$ 9.00						
Value of Additional Milk - Variable		\$ 152,586	\$ 82,197	\$ 145,458	\$ 361,548	\$ 448,011	\$ 374,616
MOFC - Variable		\$ 57,965	-\$ 18,603	-\$ 2,862	\$ 224,748	\$ 234,531	\$ 129,096
Milk Response (g MS/kg DM)		81	41	49	132	105	76
6 Week In Calf Rate (%) - FFR	68	69	67	76	78	81	81
Not In Calf Rate (%) - FFR	24	17	20	11	13	12	8
SCC	261	224	184	160	146	162	162

## Conclusions



Concentrate supplementation was shown to increase MS production in this trial



Milk response from concentrate supplements can vary depending on post grazing residual level



The long term response is likely to be greater than the short term response

→ BCS Gain

# Marginal Milk Costs

Kim Robinson  
AgFirst



**Are you making money from milk or  
milk from money?**

# Northland Agricultural Research Farm Dargaville





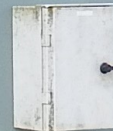
**Each farm has 27.5 ha and up to 90 high BW cows**







It starts here...  
**18377**



It starts here...  
**18378**



# Trial Structure

- **Pasture Only Farm**
  - 2.7cows/ha, no supplement
- **PKE Only Farm**
  - 3.1cows/ha, limited supplement
  - PKE fed within FEI limits
- **PKE Plus Farm**
  - 3.1cows/ha, unlimited supplement
  - PKE fed first until FEI limiting, then DDG, SBH or silage



# Results – 3 year averages

	Kg MS/ha	kgMS/c	Supplement Purch kgDM/c
Pasture Only	916	342	
PKE Only	1209	389	837
PKE Plus	1328	426	1253



# Supplement Purchased

**\$ landed**

**PKE**                      \$380/t

**DDGS**                    \$638/t

**Baleage**                \$90/b

**SoyaBeanH**            \$458/t

# Results – 3 year averages

	Kg MS/ha	Supplemt Purch kgDM/c	Milk Response gMS/kgDM
Pasture Only	916		
PKE Only	1209	837	113

# Results – 3 year averages

	Kg MS/ha	Supplemt Purch kgDM/c	Milk Response gMS/kgDM
Pasture Only	916		
PKE Only	1209	837	113
PKE Plus	1328	1253	91

# Results – 3 year averages

	Kg MS/ha	Supplemt Purch kgDM/c	Milk Response gMS/kgDM
Pasture Only	916		
PKE Only	1209	837	113
PKE Plus	1328	1253	91

Milk response  
decreases as  
supplement input  
increases

# Repro Results – 3 year averages

	6 week in-calf rate	Empty Rate
Pasture Only	75%	8%
PKE Only	71%	10%
PKE Plus	73%	7%

Supplement feeding had no impact on mating performance



# Profit Results – 3 year averages

	Kg MS/ha
Pasture Only	916
PKE Only	1209
PKE Plus	1328

Financial analysis accounts  
for all costs associated  
with each farm system  
including labour and  
machinery hours

# Profit Results – 3 year averages

	Kg MS/ha	Operating Profit \$/ha (@ \$9.50)
Pasture Only	916	\$2,737
PKE Only	1209	\$3,339
PKE Plus	1328	\$3,360

# Profit Results – 3 year averages

	Kg MS/ha	Operating Profit \$/ha (@ \$9.50)	Operating Profit \$/ha (@ \$9.00)
Pasture Only	916	\$2,737	\$2,279
PKE Only	1209	\$3,339	\$2,735
PKE Plus	1328	\$3,360	\$2,696

# Beware of using average FWE

	Fm Working Exp \$/kgMS	Marginal cost of extra milk
Pasture Only	\$6.70	
PKE Only	\$6.85	\$7.69
PKE Plus	\$7.02	\$9.35

# Beware of using average FWE

	Fm Working Exp \$/kgMS	Marginal cost of extra milk
Pasture Only	\$6.70	
PKE Only	\$6.85	\$7.69
PKE Plus	\$7.02	\$9.35

**Other farm costs rose by \$0.95 for every \$1 spent on supplement**



# Profit is more sensitive to milk response than supplement price

Milk Response gMS/kgDM	50	75	100	125
Profit \$/ha	\$1,801	\$2,421	\$3,042	\$3,662

\$620/ha for every  
 25g/kgDM extra  
 milk response

# Profit is more sensitive to milk response than supplement price

Milk Response gMS/kgDM	50	75	100	125
Profit \$/ha	\$1,801	\$2,421	\$3,042	\$3,662

\$620/ha for every  
25g/kgDM extra  
milk response

PKE Price \$/t	\$500	\$400	\$300	\$200
Profit \$/ha	\$3,066	\$3,340	\$3,614	\$3,887

\$274/ha for every  
\$100/t PKE price

**Profit is more sensitive to milk response than supplement price – focus accordingly**

\$620/ha for every 25g/kgDM extra milk response

\$274/ha for every \$100/t PKE price

**Which do you spend  
more time monitoring?**

# Key to Good Milk Responses

- Minimise supplement wastage
- Monitor pasture residuals to minimise pasture wastage
  - Be prepared to pull supplement out when residuals rise
  - No effect on repro if cows are fully fed
- Use residuals rather than production levels to drive supplement decisions
- Beware of in-shed feeding systems

# Summary

- Cost of extra milk from supplement can be high
- Other farm costs rise by \$0.85-\$1.05 per \$1 spent on supplement – labour/machinery/milking costs
- Responses decreased with increasing supplement fed
- Profit more sensitive to milk response than price
  - Focus accordingly





# Drought Management

- Make as much quality grass silage as we can
- Ration out supplement as long as possible
- Use residuals to drive supplement use
- Silage is precious! Do not feed silage to anything other than milking cows

# Drought Management

- Purchase feed to keep good cows milking as long as possible
- OAD if low BCS but need to feed well
- Cull poorer producers
- Dry off lighter cows and use PKE to fatten