SIDDC
South Island Dairying Development Centre

Partners Networking To Advance South Island Dairying

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Plant & Food RESEARCH
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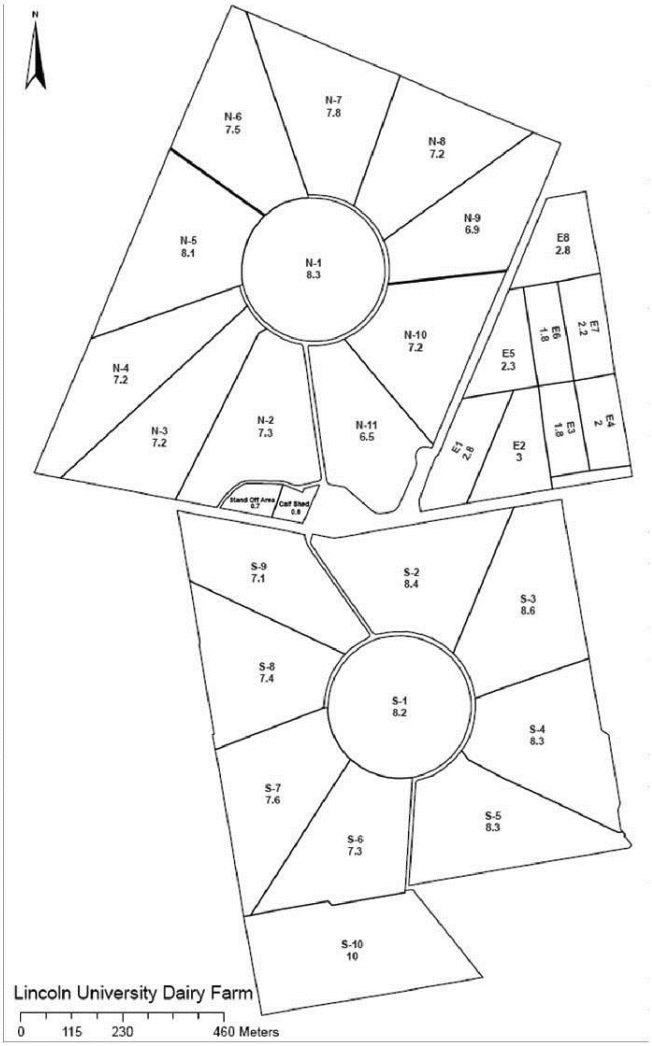
Lincoln University Dairy Farm Focus Day 18 October 2012



Staff

Peter Hancox – Farm Manager
Glen Trayner – Farm Assistant
Adam Vollebregt – Farm Assistant
Isaac Vollebregt – Farm Assistant

LUDF Hazards Notification

1. Children are the responsibility of their parent or guardian
2. Normal hazards associated with a dairy farm
3. Other vehicle traffic on farm roads and races
4. Crossing public roads
5. Underpass may be slippery

Please follow instructions given by event organisers or farm staff

Introduction

The 186 hectare irrigated property, of which 160 hectares is the milking platform, was a former University sheep farm until conversion in 2001. The spray irrigation system includes two centre pivots, small hand shifted lateral sprinklers, and k-lines. The different soil types on the farm represent most of the common soil types in Canterbury.

LUDF Strategic objective 2011-2015:

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.*
- *LUDF is to accept a higher level of risk (than may be acceptable to many farmers) in the initial or transition phase of this project.*

Additional objectives

- To develop and demonstrate world-best practice pasture based dairy farming systems and to transfer them to dairy farms throughout the South Island.
- To consider the farms full environmental footprint, land requirement, resource use and efficiency in system decision making and reporting
- To use the best environmental monitoring and irrigation management systems in the development and implementation of practices, that achieve sustainable growth in profit from productivity and protection of the wider environment.
- To ensure optimal use of all nutrients on farm, including effluent, fertiliser, nutrients imported from supplements and atmospheric nitrogen; through storage where necessary, distribution according to plant needs and retention in the root zone.
- To continue the environmental monitoring programme and demonstrate technologies and farming practices that will ensure the average annual concentration of nitrate-N in drainage water from below the plant root zone remains below the critical value [16 mg N/L] specified in ECan's proposed regional rule in order for LUDF to remain a 'permitted activity' [Rule WQL20].
- To store and apply effluent such that there is no significant microbial contamination of the shallow aquifers.
- To manage pastures and grazing so per hectare energy production is optimised and milkers consume as much metabolisable energy [ME] as practicable.
- To optimize the use of the farm automation systems and demonstrate / document improved efficiencies and subsequent effect on the business.
- To achieve industry targets for mating performance within a 10 week mating period, including a 6 week in-calf rate of 79% and 10 week in calf rate greater than 89% i.e. empty rate of less than 11%.
- To continue to document and measure LUDF's influence on changes to defined management practices on other dairy farms.
- To ensure specific training is adequate and appropriate to enable staff members to contribute effectively in meeting the objectives of the farm.
- To operate an efficient and well organised business unit.
- To generate profit through tight cost control with appropriate re-investment and maintenance of the resources.
- To create and maintain an effective team environment at policy, management and operational levels.
- To actively seek labour productivity gains through adoption of technologies and practices that reduces labour requirements or makes the work environment more satisfying.
- To assist Lincoln University to attract top quality domestic and international students into the New Zealand dairy industry.

Ongoing research

- The effect of fertilisers & other farm inputs on groundwater. 10 groundwater monitoring wells sunk to monitor and manage the effect of fertiliser, grazing, irrigation and effluent inputs over a variety of contrasting soil types.
- Effects of eco-n on nitrate leaching and pasture production.
- Pasture growth rates, pests and weeds monitoring.
- The role of nutrition in lameness in Canterbury.
- Resource Inventory and Greenhouse Gas Footprint

Climate

Men Annual Maximum Temperature	32° C
Mean Annual Minimum Temperature	4° C
Average Days of Screen Frost	36 Days per annum
Mean Average Bright Sunshine	2040 Hours per annum
Average Annual Rainfall	666 mm

Farm area

Milking Platform	160 ha
Runoff [East Block]	15 ha
Unproductive land on platform	6.7 ha

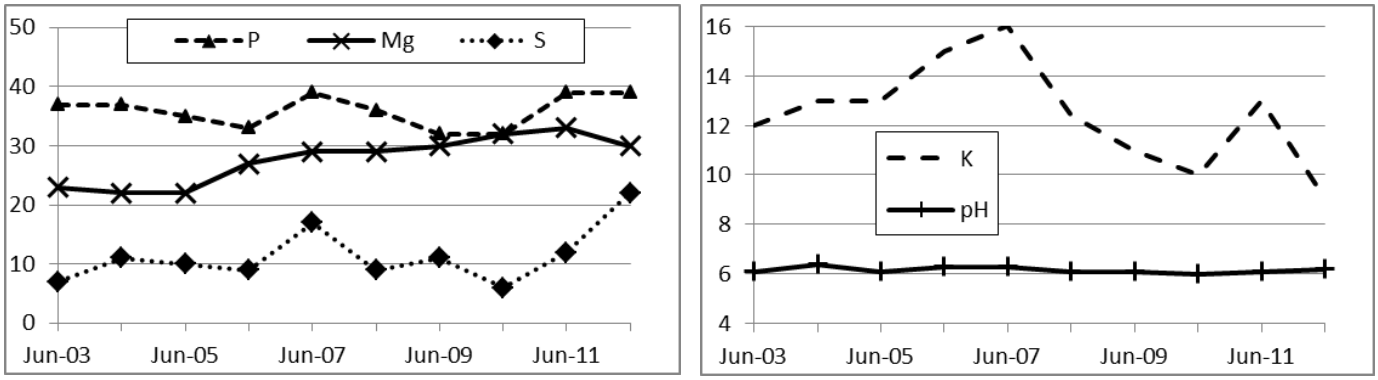
Soil types

	% Milking Platform		% Milking Platform
Free-draining shallow stony soils (Eyre soils)	5	Imperfectly drained soils (Wakanui soils)	30
Deep sandy soils (Paparua & Templeton soils)	45	Heavy, poorly-drained soils (Temuka soils)	20

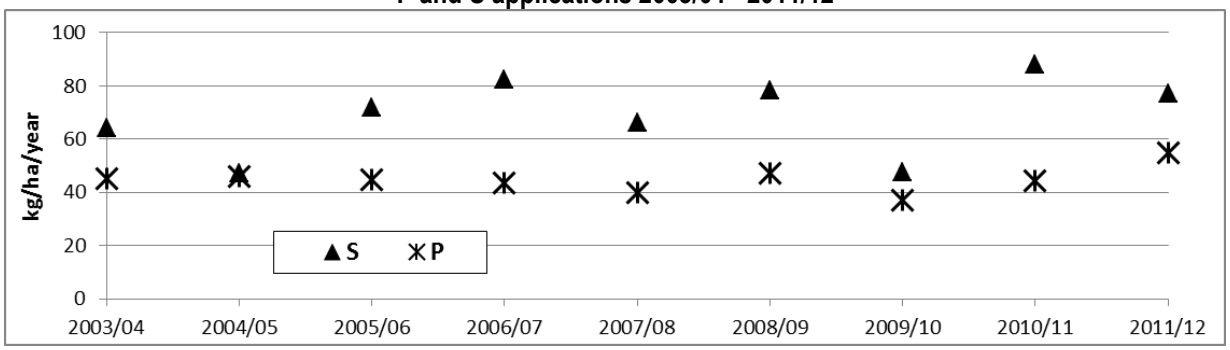
Soil test results and Fertiliser Applications

Target Soil Test Ranges: pH: 5.8 – 6.2, P: 30 – 40, K: 5 – 8, S: 10 – 12, Mg: 20+

LUDF Soil Test Results



P and S applications 2003/04 - 2011/12



Pasture

The milking platform was sown at conversion [March 2001] in a mix of 50/50 Bronsyn/Impact ryegrasses with Aran & Sustain white clovers, and 1kg/ha of Timothy

Paddock	Period Regrassed	Grass Cultivar	Paddock	Period Regrassed	Grass Cultivar
N1	Feb-01	Brons. Imp	S1	Dec-05	Bealey
N2	Feb-11	Trojan	S2	Dec-10	Troj. Bealey
N3	Nov-12	Shogun	S3	Feb-10	Bealey
N4	Feb-01	Brons. Imp	S4	Feb-09	Arrow - Alto
N5	Dec-11	Shogun	S5	Dec-08	Arrow - Alto
N6	Feb-01	Brons. Imp	S6	Dec-06	Arrow - Alto
N7	Feb-01	Brons. Imp	S7	Sep-06	Arrow - Alto
N8	Feb-01	Brons. Imp	S8	Oct-11	Troj. Bealey
N9	Feb-01	Brons. Imp	S9	Dec-09	Bealey
N10	Jan-12	Tetraploids	S10	Feb-05	Bealey
N11	Nov-07	Bealey	All paddocks also sown with clover		

Irrigation and effluent system

Centre-pivots	127 ha
Long Laterals	24 ha
K-Lines	10 ha
Hard Hose Gun	14 ha
Total irrigated	175 ha
Irrigation System Capacity	5.5 mm/day
Length of basic pivot	402
Well depth	90m

Statistics

- A full rotation completed in 20.8 hours for 5.5 mm [at 100% of maximum speed].
- Average Annual Rainfall = 666 mm. Average irrigation input applies an additional 450 mm. Average Evapotranspiration for Lincoln is 870 mm/year.

Effluent

- Sump capable of holding 33,000 litres and a 300,000 litre enviro saucer.
- 100 mm PVC pipe to base of North Block centre pivot, distribution through pot spray applicators.
- System being developed to also apply effluent on to the South Block and outside the pivot.

Mating programme - Spring 2012

KiwiX DNA for 370 cows (F8-F16); Holstein Friesian Daughter Proven for 220 cows (F0-F7); KiwiX daughter proven for approx. 40 low BW cows and R2yr Heifers. AI mate for 3 weeks in heifers and 6 weeks in main herd then follow with Jersey bulls. Heifers start mating 10 days early. 10 weeks mating for milking herd. Expect to rear 160 heifers.

Herd details – Oct 2012

Breeding Worth (rel%) / Production Worth (rel%)	115 / 49% 142 / 63%
Recorded Ancestry	98%
Average weight / cow (Dec) – Herd monitored walk over weighing	471 kg [Dec 2011]
Calving start date	Heifers – 20 July, Herd 2 August 2012
Mid calving date	14 August 2012 (12 days)
Mating start date	25 October 2012
Empty rate (nil induction policy) after 10 weeks mating	14% 2011/12 [6 weeks in-calf rate 73%]

	2002/03	**Average 03/04 - 06/07**	2007/08	2008/09	2009/10	2010/11	2011/12
Total kg/MS supplied	228,420	**277,204**	278,560	261,423	273,605	264,460	297,740
Average kg/MS/cow	381	**425**	409	384	415	395	471
Average kg/MS/ha	1414	**1720**	1744	1634	1710	1653	1861
Farm Working Expenses / kgMS	$2.98	**$2.68**	$3.37	$3.88	$3.38	$3.86	$3.92
Dairy Operating Profit/ha	$1,164	**$2,534**	$8,284	$2,004	$4,696	$7,323	$4,526
Payout [excl. levy] $/kg [Milk price + div.]	$4.10	**$4.33**	$7.87	$5.25	$6.37	$7.90	$6.30
Return on Assets	4.4%	**6.18%**	14.6%	4.8%	7%	7%	6%

Stock numbers	2002/03	**Average 03/04 - 06/07**	2007/08	2008/09	2009/10	2010/11	2011/12
1 July cow numbers	631	**675**	704	704	685	694	665
Max. cows milked	604	**654**	680	683	660	669	632
Days in milk			263	254	266	271	272
Stocking rate Cow equiv. / ha	3.75	**4.05**	4.2	4.3	4.13	4.18	3.95
Stocking rate Kg liveweight / ha	1,838	**1964**	2,058	2,107	1,941	1914	1860
Cows wintered off No. Cows / Weeks	500 / 8	**515 / 7.8**	546 / 9	547 / 7	570 / 9	652 / 8.4	650 / 9.8
No. Yearlings grazed On / Off	0/118	**0/157**	0/171	0/200	0/160	0/166	0/141
No. Calves grazed On / Off	0/141	**0/163**	0/200	0/170	0/160	0/194	0/190
Est. Pasture Eaten (Dairybase) (tDM/ha)			17.9	17.2	16.2	16.9	17.3
Purch. Suppl - fed [kgDM/cow]	550	**317**	415	342	259	463	359
Made on dairy/platform [kgDM/cow]	0	**194**	95	64	144	160	154
Applied N / 160 eff. ha			164	200	185	260	340

Staffing & Management

Roster System – 8 days on 2 off 8 days on 3 off

Milking Times – Morning: cups on 5.00 am
– Afternoon: cups on 2.30 pm

Contents

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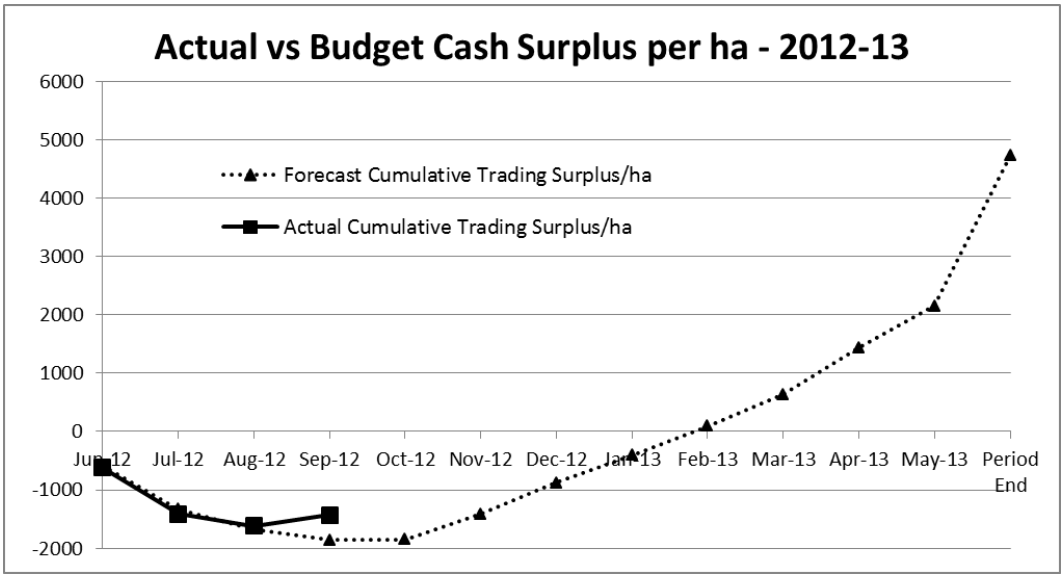
Profit per Hectare

The 2012/13 Budget (as released at the July Focus Day) assumed a payout (including dividend) of $5.83/kgMS, milk production of 315,000kgMS and expenses of nearly $1.2 million, to give FWE of $3.80/kgMS and budgeted Dairy Operating Profit of $4000/ha. This would generate a cash surplus of approximately $750,000 (6% ROA) and a cash surplus of $4700/ha. Given the current forcasted payout is now $5.25/kgMS plus dividend (potentially 26-33 cents per share) the ability to generate the forecast cash surplus and maintain ongoing farm improvement and maintenance will require both careful cost control and achievement of budgeted production.



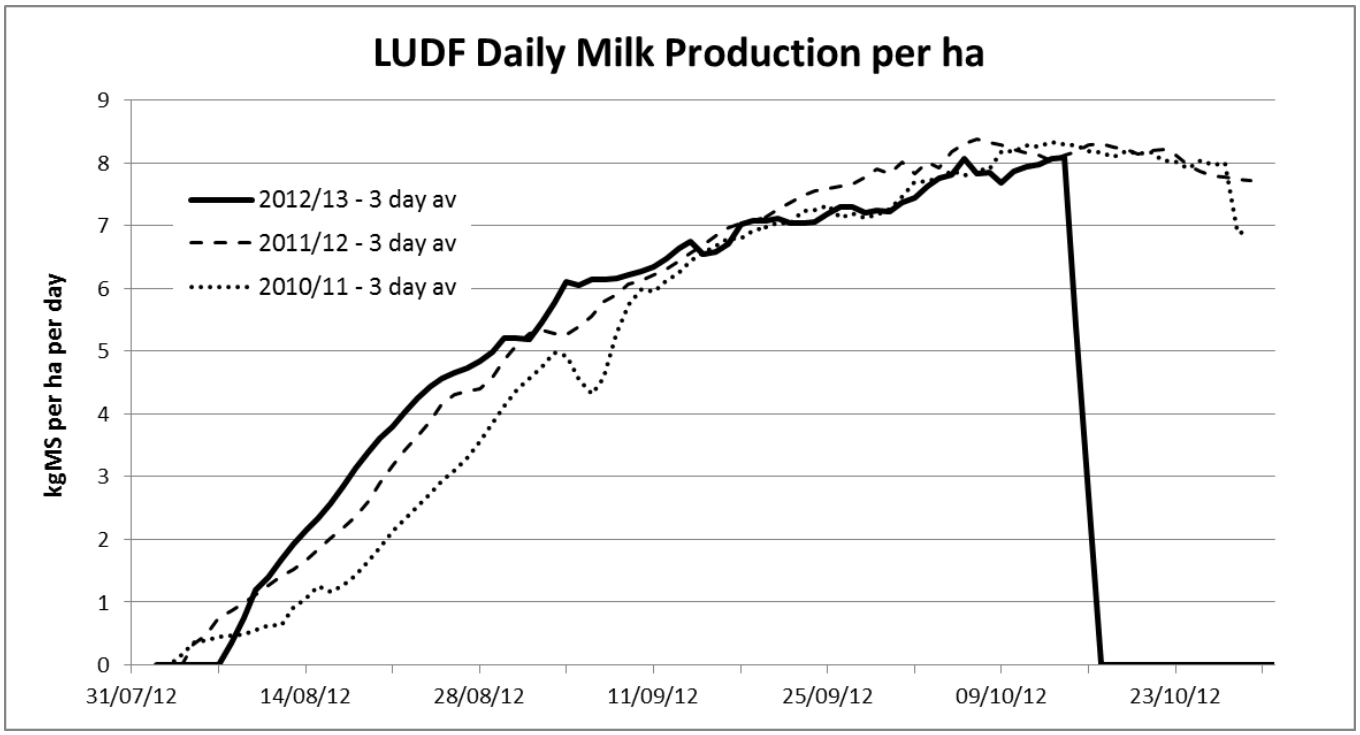
Budget and Expenses to date

Lincoln University Dairy Farm				Budget for 2012 - 2013					
Year ending May 31		**2011 -12 Actual**		**Budget**		**Budget to End Sept**	**Act to end Sept**		
Milk production (kgMS)		297740		315075		47308	45896		
	160ha	1,861/ha		1,969/ha					
Peak Cow Nos and Prod.		630cows		630cows					
Staff		3.7 FTE's		170cows/FTE					
Income									
Milksolid Payout		$6.08/kgms		$5.50/kgms					
Milksolid Revenue		$1,810,259		$1,732,912		$182,136	$175,138	-$6,998	
Dividend /share		$0.22/share		$0.33/share					
Dividend		$65,503		$103,975					
Surplus dairy stock		$152,415		$50,750					
Other stock sales				$88,281		$7,969	$12,117	$4,148	
		$2,028,177		$1,975,917		$190,105	$187,255	-$2,850	
Stock Purchases		$22,400		$21,600					
Gross Farm Revenue		**$2,005,777**		**$1,954,317**		**$190,105**	**$187,255**	**-$2,850**	
Expenses		**Actual 2011/12**		**Budget 2012/13**		**Budget to End Sept**	**Act to end Sept**	**Variance**	
Cow Costs	Animal Health	$59,775		$62,462		$25,442	$30,626	$5,184	
	Breeding Expenses	$53,895		$41,900		$8,156	$7,536	-$620	
	Replacement grazing & meal	$173,982		$151,493		$65,338	$51,313	-$14,025	
	Winter grazing - Herd incl freight	$123,295		$141,126		$108,140	$118,247	$10,107	**XXX**
			$410,947		$396,981				
Feed	Grass silage purchased	$69,720		$86,800		$48,200	$280	-$47,920	
	Silage making & delivery	$11,902		$12,480		$4,160	$7,113	$2,953	
	EcoN & Giberillin	$74,620		$60,240		$40,200	$32,689	-$7,511	**+++**
	Nitrogen	$112,916		$116,740		$27,419	$23,203	-$4,216	
	Fertiliser & Lime	$43,405		$28,670		$12,558	$23,380	$10,822	
	Irrigation - All Costs	$49,041		$70,600		$8,513	$2,602	-$5,911	
	Regrassing	$29,449		$29,688		$7,890	$325	-$7,565	**+++**
			$391,053		$405,218				
Staff	Employment	$205,593		$241,341		$77,554	$68,024	-$9,530	**+++**
Land	Electricity-farm	$23,397		$23,500		$6,220	$5,160	-$1,060	
	Administration	$19,315		$24,700		$7,689	$5,261	-$2,428	
	Freight & Cartage	$0		$800		$2,368	$2,368	$0	
	Rates & Insurance	$19,020		$21,020		$7,000	$7,006	$6	
	Repairs & Maintenance	$61,936		$48,500		$24,626	$13,740	-$10,886	
	Shed Expenses excld power	$11,091		$11,850		$4,591	$1,424	-$3,167	
	Vehicle Expenses	$22,371		$23,550		$8,263	$7,575	-$688	
	Weed & Pest	$972		$500		$500		-$500	
			$158,102		$154,420				
Cash Farm Working Expenses		**$1,165,695**		**$1,197,959**		**$494,827**	**$407,872**	-$86,955	
		$3.92		**$3.80**					
Depreciation est		$105,000		$116,000					
Total Operating Expenses		$1,270,695		$1,313,959					
Dairy Operating Profit		**$735,082**		**$640,358**					
DOP		**4,594/ha**		**4,002/ha**					
Cash Operating Surplus		**$840,082**		**$756,358**					
		5,251/ha		**4,727/ha**					

Expenses to date show an overall reduction in total expenses however much of the variance is related to differences in timing between actual expenses and budgeted expenses. The major exceptions to this are:

- **Winter grazing:** A further $10,000 was spent on winter grazing, primarily in the August period as standing grazing was purchased from the neighbouring East Block. This occurred to keep cows off the milking platform in the wet weather – and thus protect the milking platform pastures.
- **Eco-n and Gibberellic Acid applications:** a little less GA was applied than budgeted as the farm balanced current growth with future demand, paddocks suitable for GA application and probable effects of GA use. A 4th application of Eco-n (for the 2012 drainage period) was budgeted but not applied.
- **Regrassing:** Less 'under-sowing' of new grass into damaged areas was required this season than allowed for in the budget, while some grass to grass expenditure was budgeted for September but will not occur till October.
- **Employment:** No casual staff have been employed to date, along with general savings relative to budgeted employment expenses. Also the farm was only partially staffed in June, reducing permanent staff costs at that point.
- **Races and Drains:** Ongoing maintenance of races and drains on the farm may be deferred till following seasons, given the payout so repairs and maintenance costs could remain below budget right through the year.

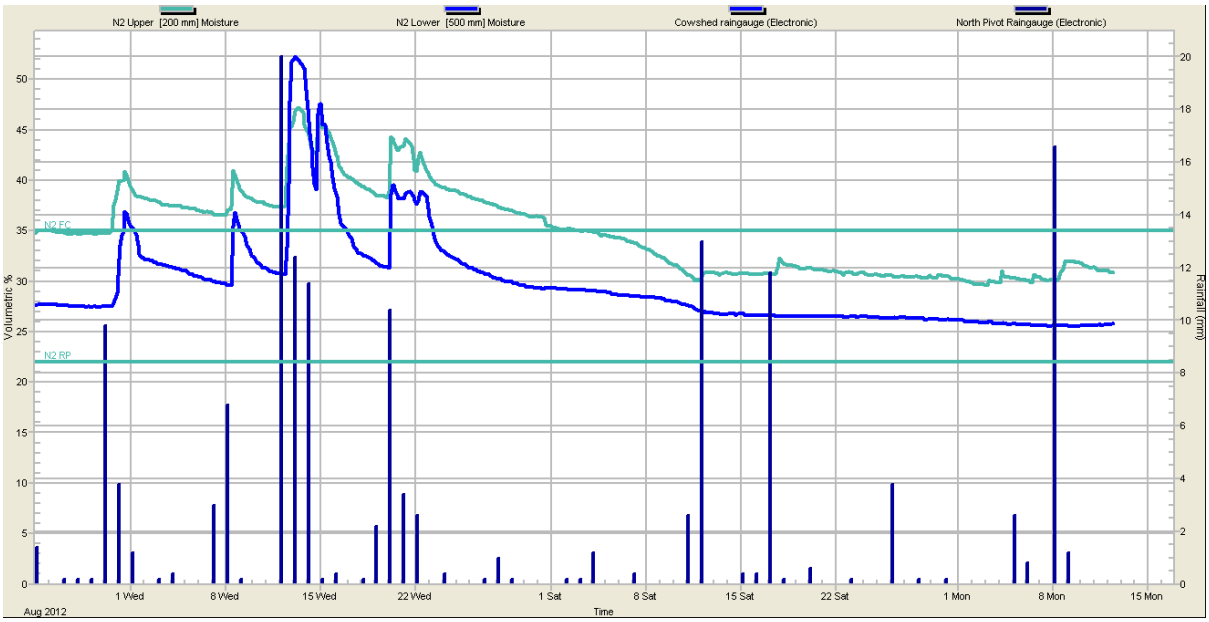
LUDF Milk Production

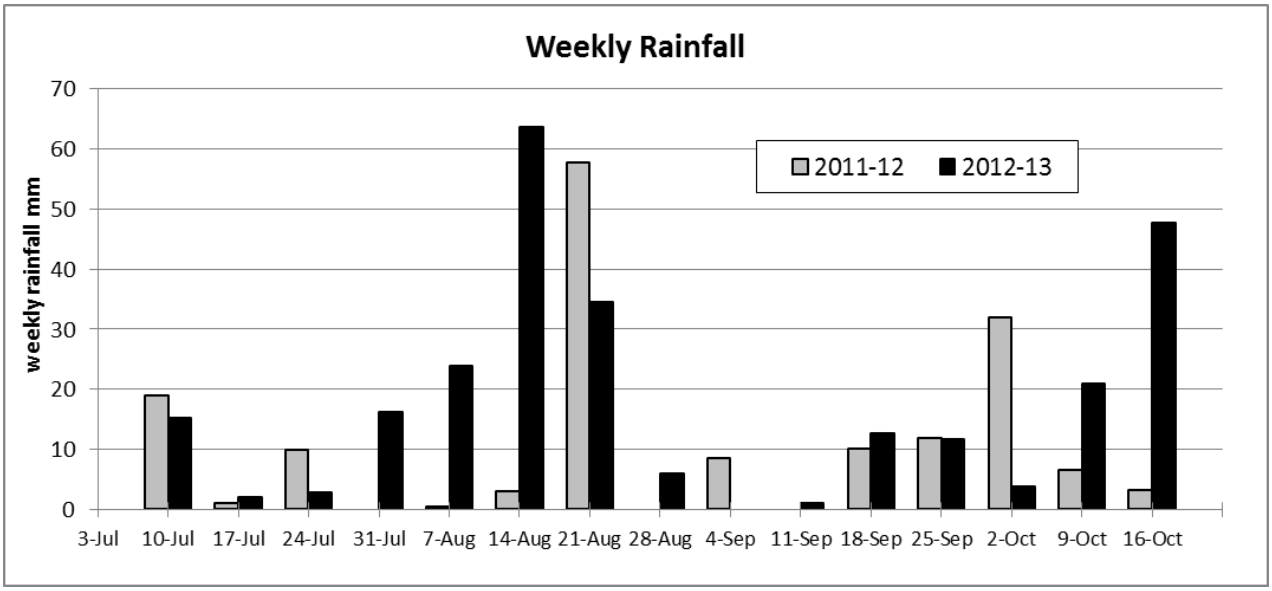


Climatic Conditions This Season

Soil Moisture

As can be seen from the soil moisture data below, the farm got very wet in the beginning of August with 63 mm rain falling in one event, LUDF did not get below field capacity until early September, making conditions very challenging during calving, as pugging was a constant and serious threat for the whole month of August. This meant we were forced to keep cows off paddocks by holding more cows on East Block, grazing better drained areas rather than the areas with higher pasture covers, and at times increasing break size and accepting high grazing residuals to avoid soil damage.





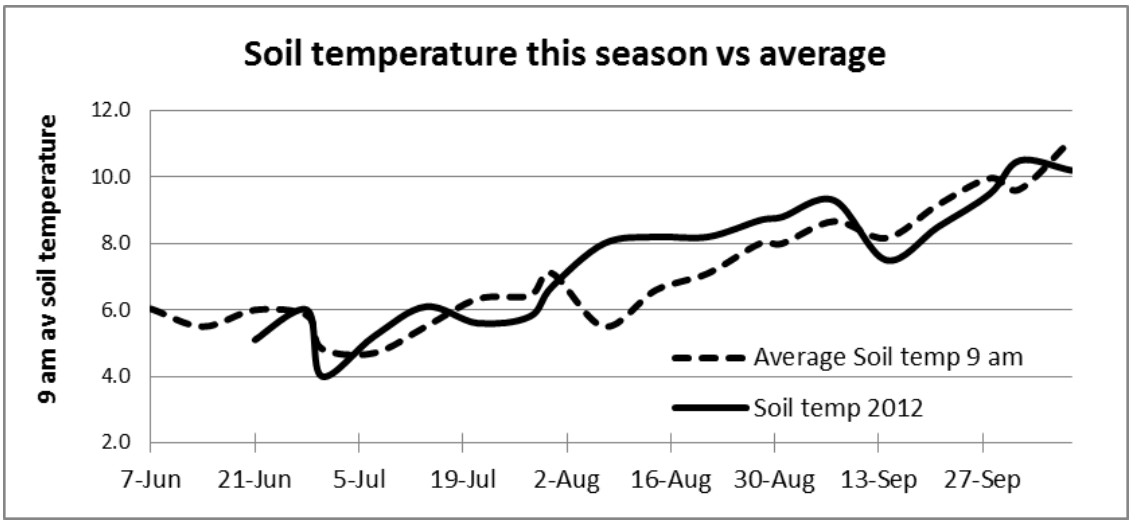
Grazing off in the wet in August.

Grazing off was used through August to protect the pasture on LUDF. This contributed to the increasing average pasture cover as dry cows were held on the East Block until the soil moisture was below field capacity on the milking platform. Grazing off in August occurred as follows:

	17-Jul	24-Jul	31-Jul	7-Aug	14-Aug	21-Aug	28-Aug	4-Sep
Dry Cows on Farm				187		85	135	105
East Block		111	253	60	291	126	8	
Jackies	216	85	200	194				
Other	426	426	111	50	40			
Total	**642**	**622**	**564**	**491**	**331**	**211**	**143**	**105**

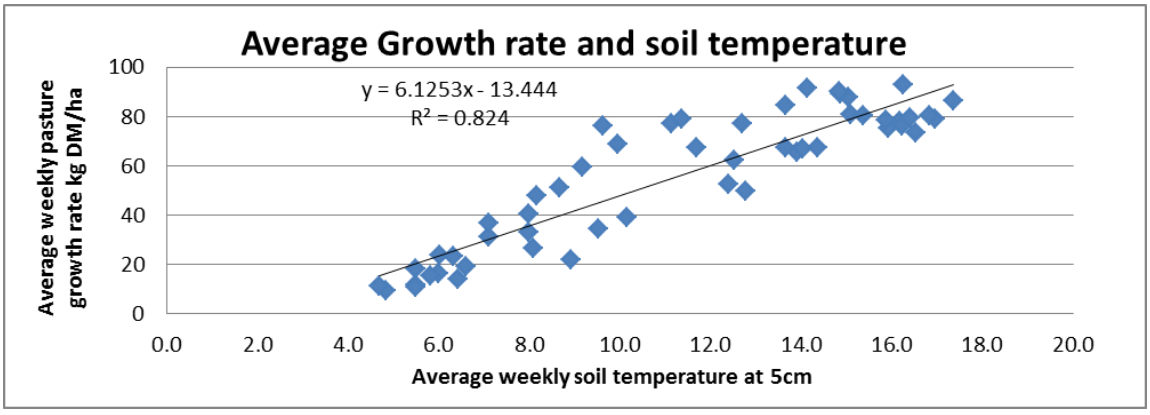
Soil Temperature

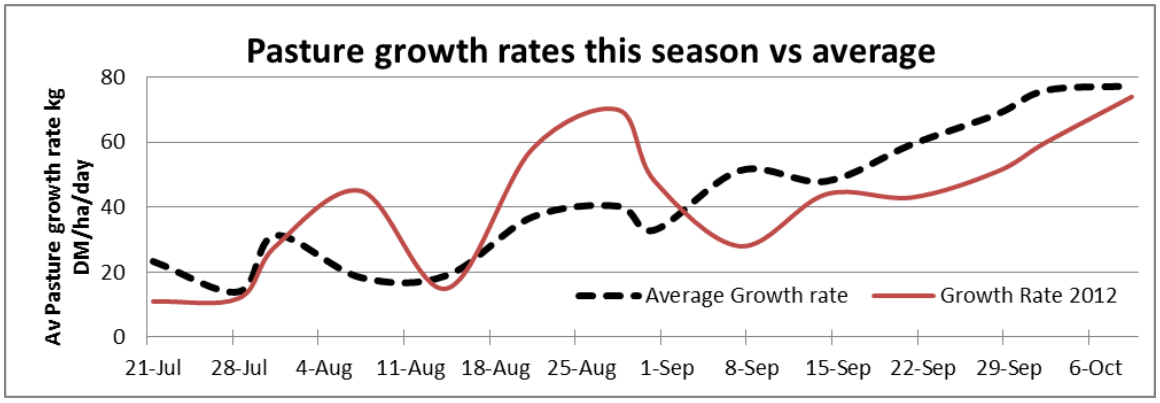
Soil temperature this Spring has been more variable than normal, the moist conditions came with relatively warm temperatures supporting higher than normal pasture growth.



Growth Rates

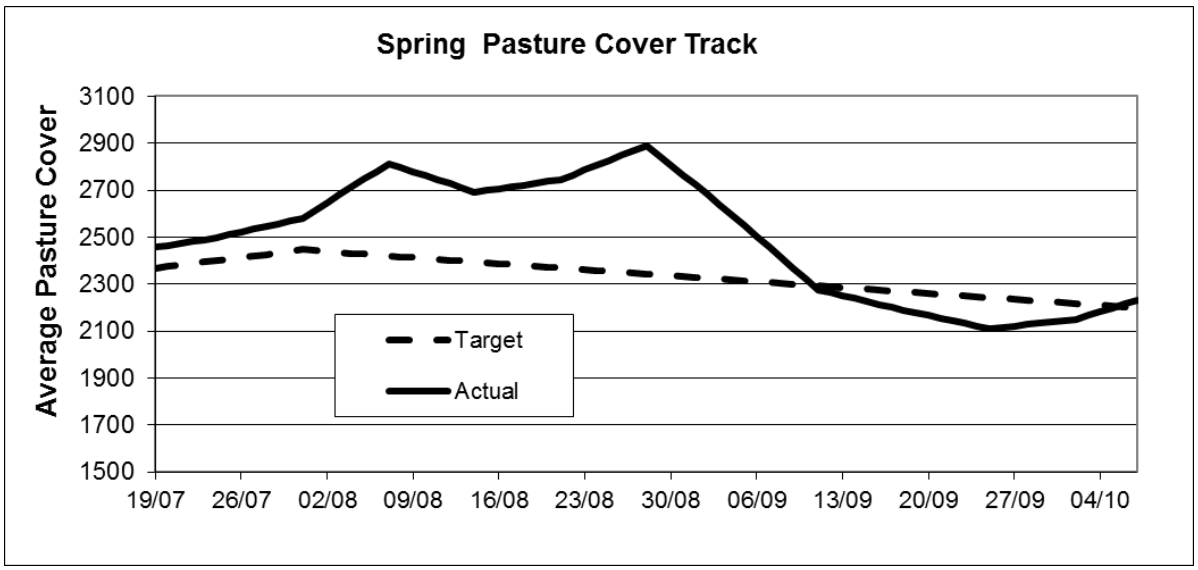
Given adequate soil moisture and fertility, soil temperature is a key driver of pasture growth at LUDF. This year is a good example of that with warm August temperatures driving higher than average pasture growth. Then we had a cool September, with cooler than average soil temperatures and growth rates below normal as well.

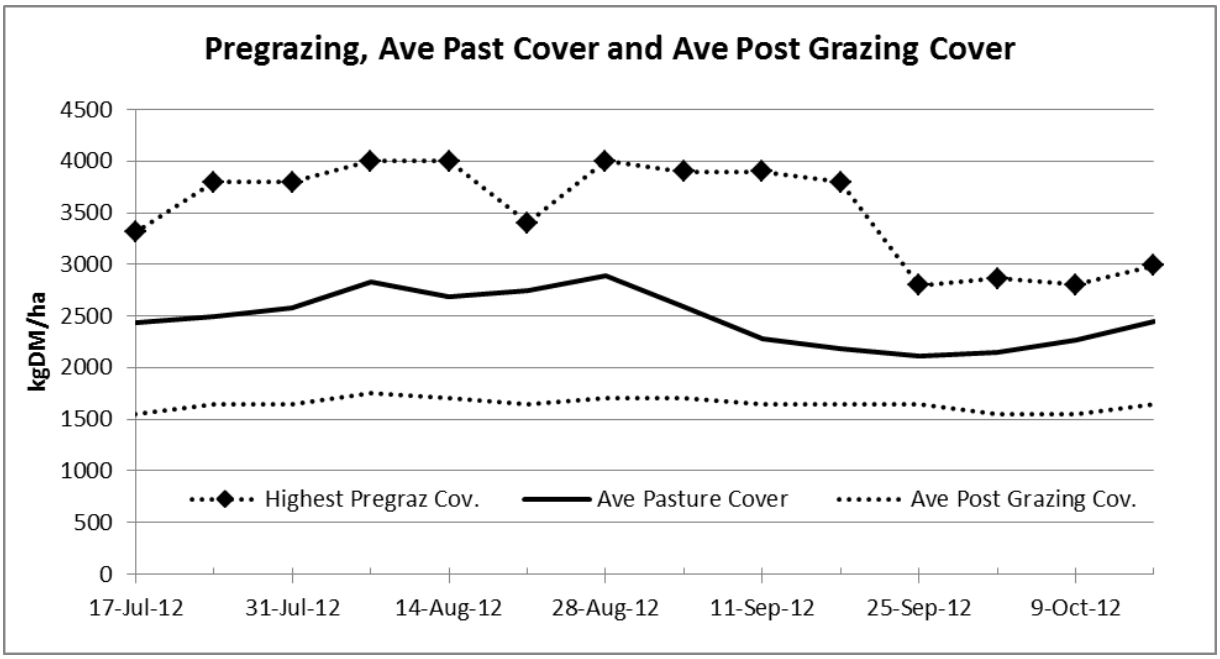




Pasture Cover

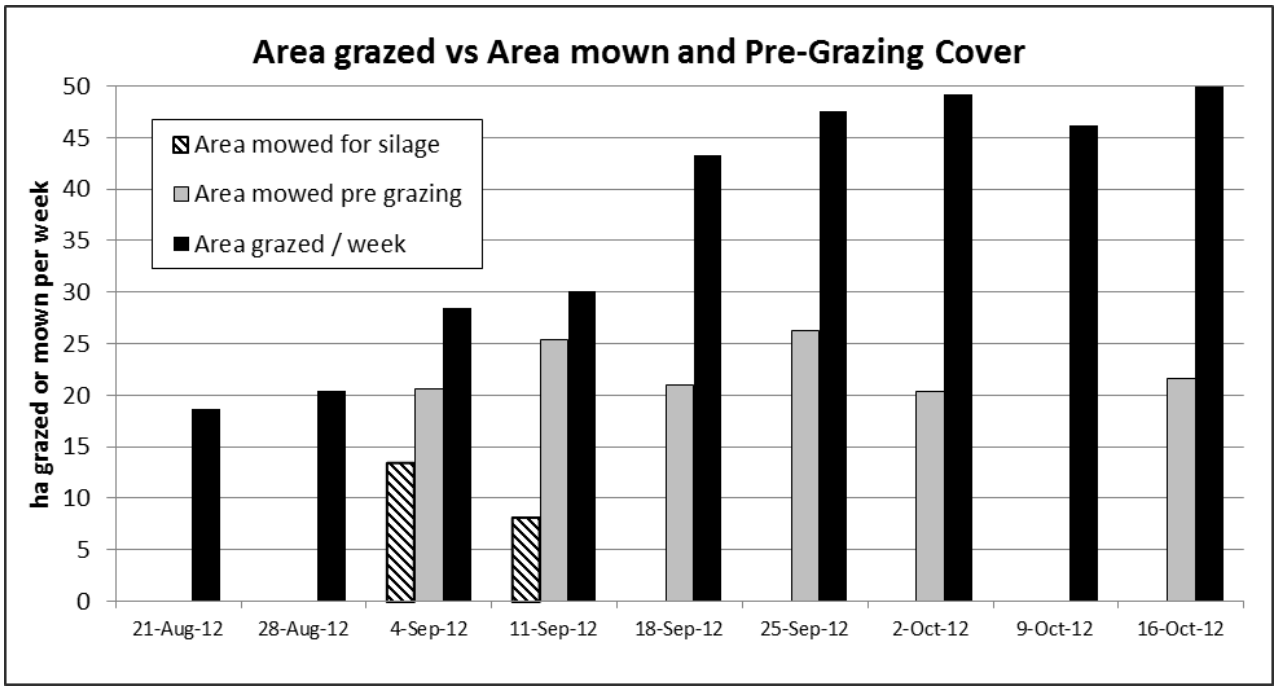
As can be seen from the Spring Pasture Cover Track, we had very high cover in August [due to very wet conditions we were unable to utilize it]. As soon as the farm dried out, we moved to reduce cover by making silage and mowing some high cover paddocks in front of cows. However, September turned out to be cold with low growth rates, which saw LUDF in a feed deficit for much of the month only recovering in the first week of October.

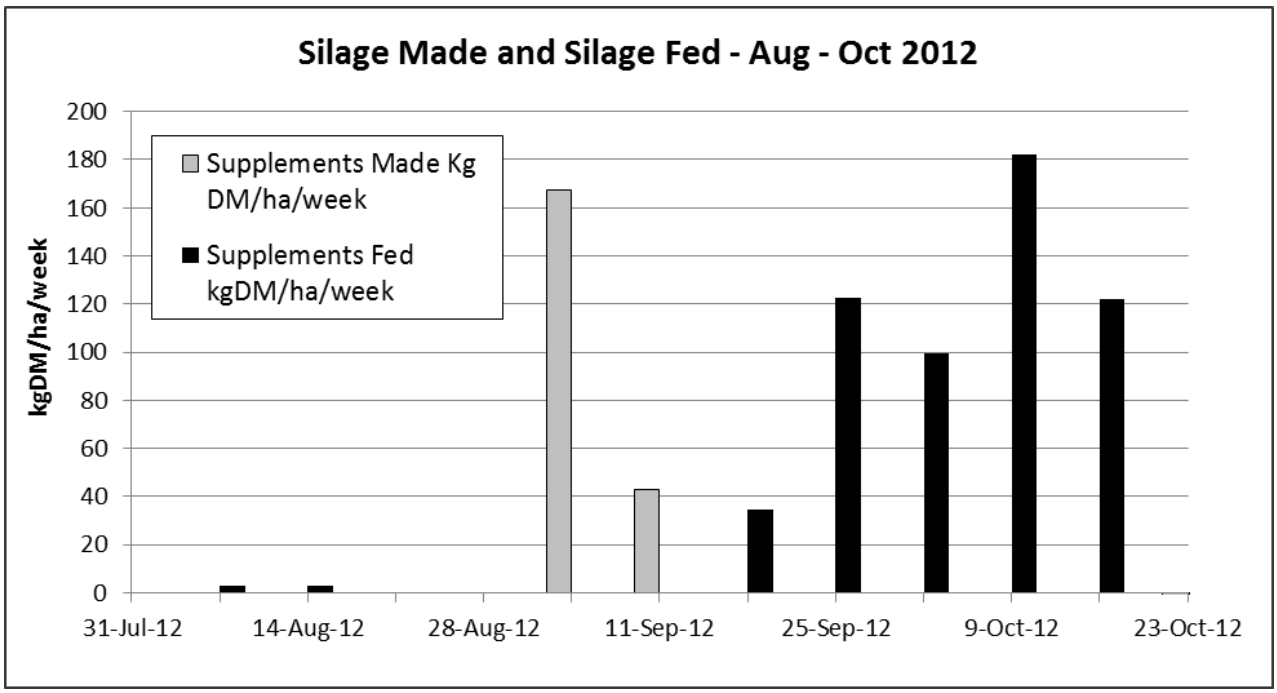




Note the pregrazing cover of approximately 4000kgDM/ha from early August till well into September which created challenges to achieve desired post grazing residuals, keep average pasture cover on target and ensure the pastures were able to quickly recover from grazing to regrow.

The grazing residual achieved in N4 on the 18 September 2012 is shown in the photo below. This was typical of paddocks grazed in the wet in August.



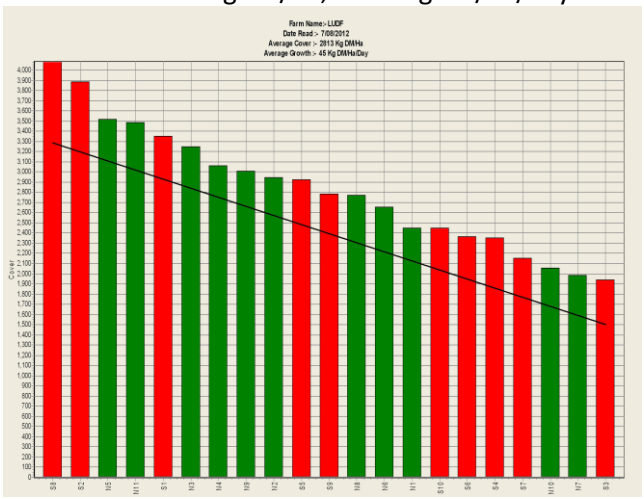


Use of Gibberellic Acid this Spring:

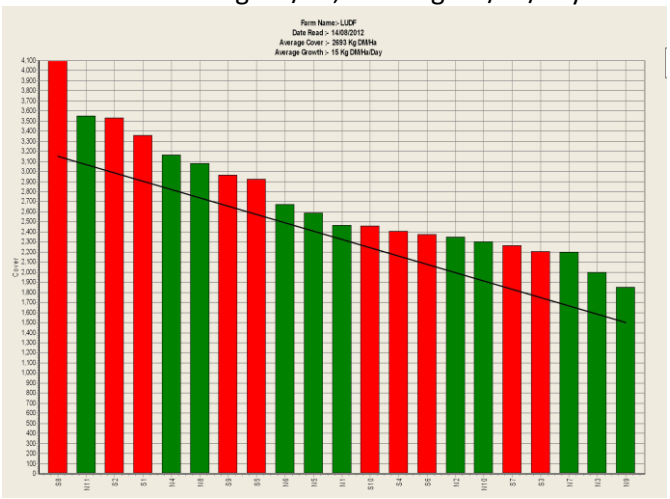
	28-Aug-12	4-Sep-12	11-Sep-12	18-Sep-12	25-Sep-12	2-Oct-12
Area grazed per week	20	28	30	43	48	49
Gibberellic Acid application per week	0	29	24	40	16	30

LUDF Farm Wedges: 7th August – 9th October 2012

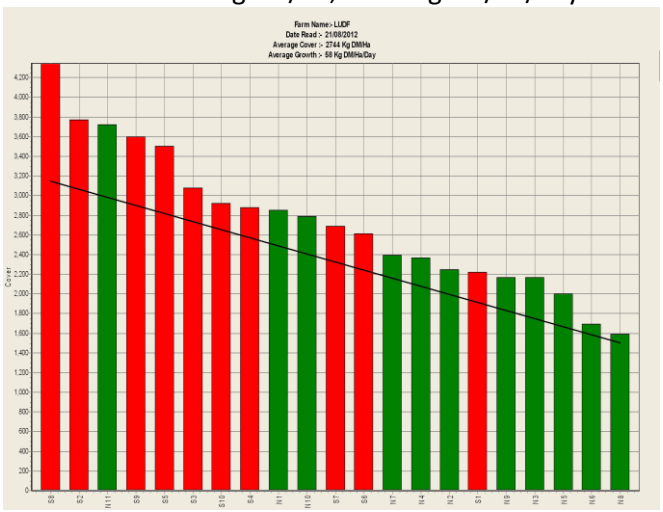
August 7th
APC – 2813kgDM/ha, GR 45kgDM/ha/day



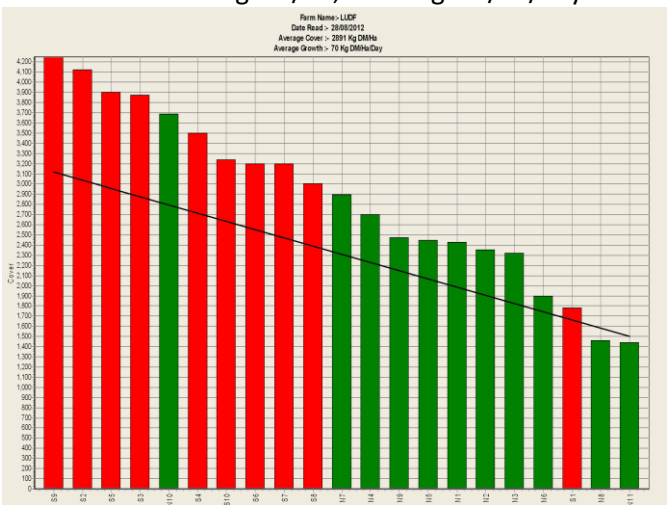
August 14th
APC – 2693kgDM/ha, GR 15kgDM/ha/day



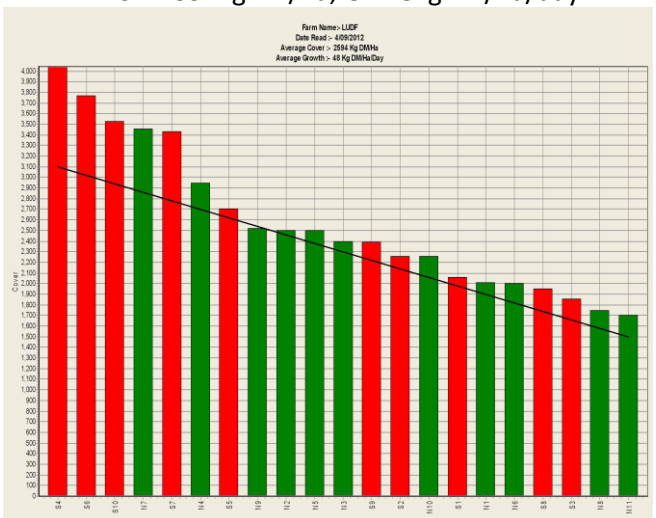
August 21st
APC – 2744kgDM/ha, GR 58kgDM/ha/day



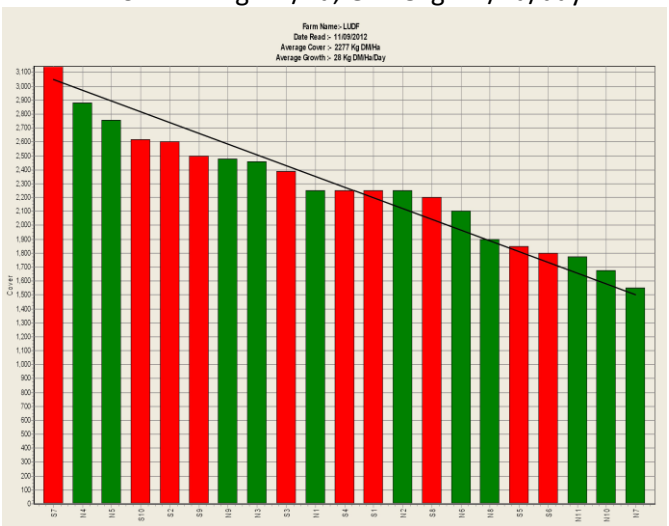
August 28th
APC – 2891kgDM/ha, GR 70kgDM/ha/day



September 4th
APC – 2594kgDM/ha, GR 48kgDM/ha/day

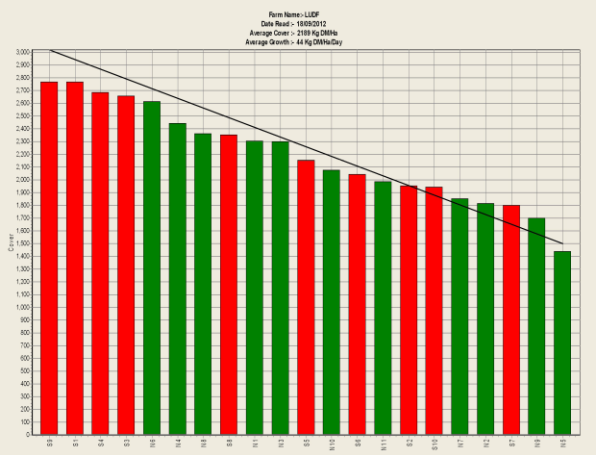


September 11th
APC – 2277kgDM/ha, GR 28kgDM/ha/day



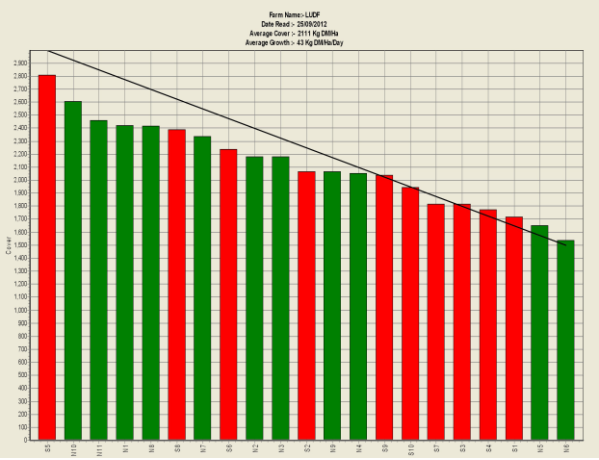
September 18th

APC – 2189kgDM/ha, GR 44kgDM/ha/day



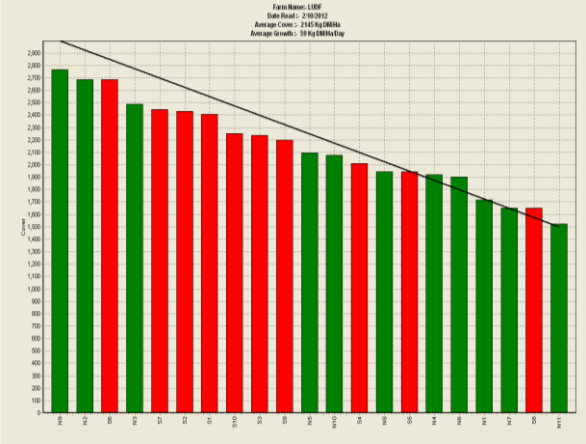
September 25th

APC – 2111kgDM/ha, GR 43kgDM/ha/day



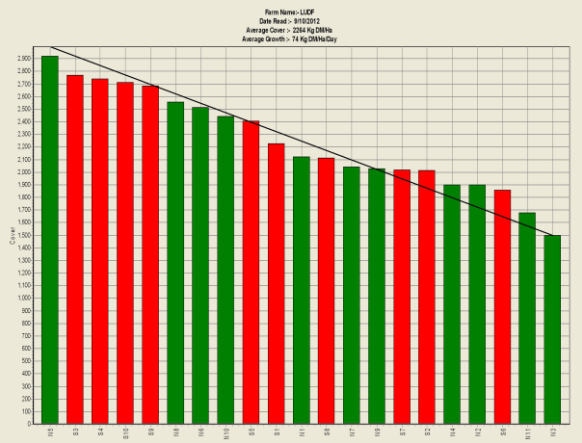
October 2nd

APC – 2145kgDM/ha, GR 59kgDM/ha/day



October 9th

APC – 2264kgDM/ha, GR 74kgDM/ha/day



Use of gibberellins to boost pasture growth in spring

Racheal Bryant, Lincoln University

Meeting animal demand in early spring is an important aspect of grazing management, especially as a period of feed shortage frequently occurs at this time. Cooler temperatures, short days and limited soil N availability restrict pasture growth rates. Nitrogen-based fertilisers provide a means of increasing pasture growth rates and DM yield but often at the expense of legumes and potential N leaching. Gibberellins, a naturally occurring plant phytohormone, can also be used following vernalisation to improve early spring growth. Trials conducted here at Lincoln over the past four years have shown that a single application of gibberellic acid (GA) or N in mid August will improve DM yield (Table 1). But if maximum yields are desired then applying GA and N together will result in the greatest pasture production.

Table 1. Effect of August applications of gibberellins (GA), nitrogen (N) both GA and N (GA+N) or no fertiliser (CNT) on dry matter yield (kg DM/ha) at Lincoln (yields are from lawnmower cuts above 4.5 cm. Values in the same column with different superscripts are significantly different, P<0.05).

	Year			
	2009	2010	2011	2012
CNT	658^{b}	1287^{c}	419^{c}	631^{b}
N	920^{ab}	1841^{ab}	745^{b}	947^{a}
GA	1142^{a}	1441^{bc}	822^{b}	1005^{a}
GA+N	1156^{a}	2230^{a}	926^{a}	1138^{a}

One frequently expressed concern is that of multiple applications of GA and the possibility of long term negative effects on yield. Observations made during experimentation show that if the additional pasture production is not supported by N fertiliser then no further yield advantage will be gained from continual GA application. Furthermore, if grazing is frequent (i.e. rotations of less than 21 days) when successive GA applications are used, then growth rates will start to decline as the plants are not given sufficient time to accumulate leaf area and replenish root reserves.

Double applications of GA combined with N will, however, improve total DM accumulation (figure 1) and does not show any yield reduction problems. However, research is still being carried out to find out whether the continued response of pasture to GA + N is due to both elements, or simply an N response.

Another option to improve pasture production is by delaying GA application until the second grazing and using N after the first grazing. Applying N first ensures there is sufficient N available to plants when GA is applied after the second regrowth. By delaying GA application there is also the additional advantage of encouraging legume productivity. In contrast to N fertilisers GA promotes clover growth and can boost spring clover content (figure 2). However, note that broadleaf weeds will also respond well to GA, especially perennial weeds such as docks.

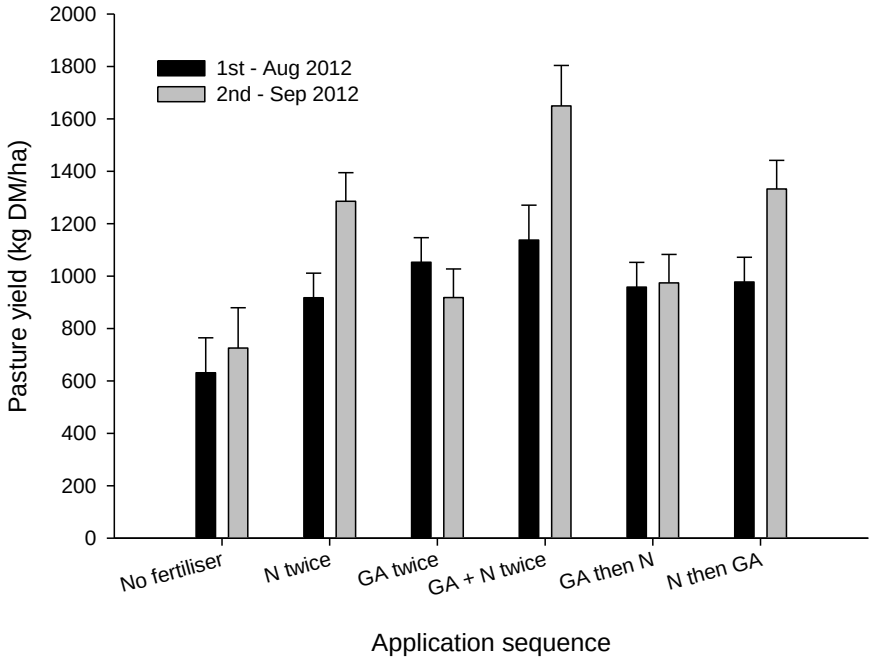


Figure 1. Effect of one (August) or two (September) applications of nitrogen (N), gibberellins (GA) or N and GA together (GA + N) on pasture yield at Lincoln (Data courtesy of Melanie Miller).

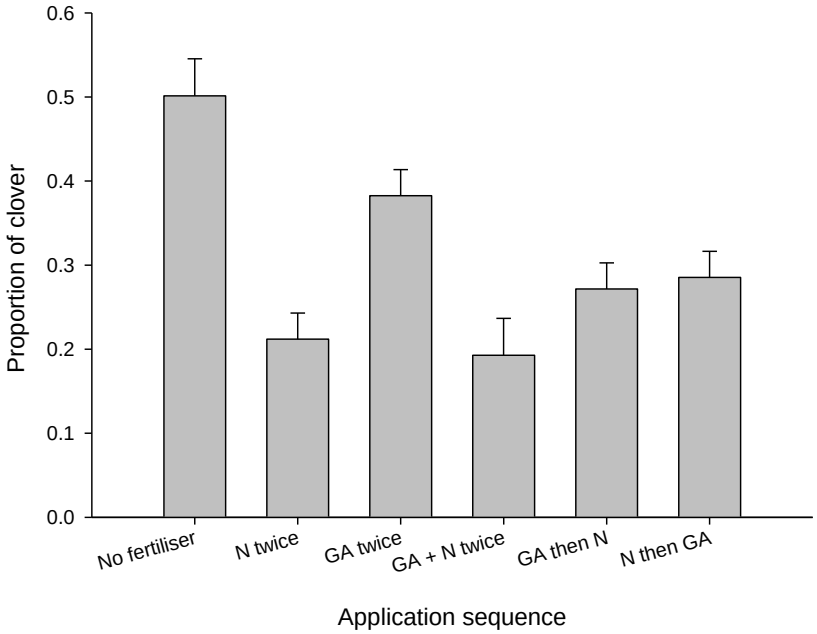
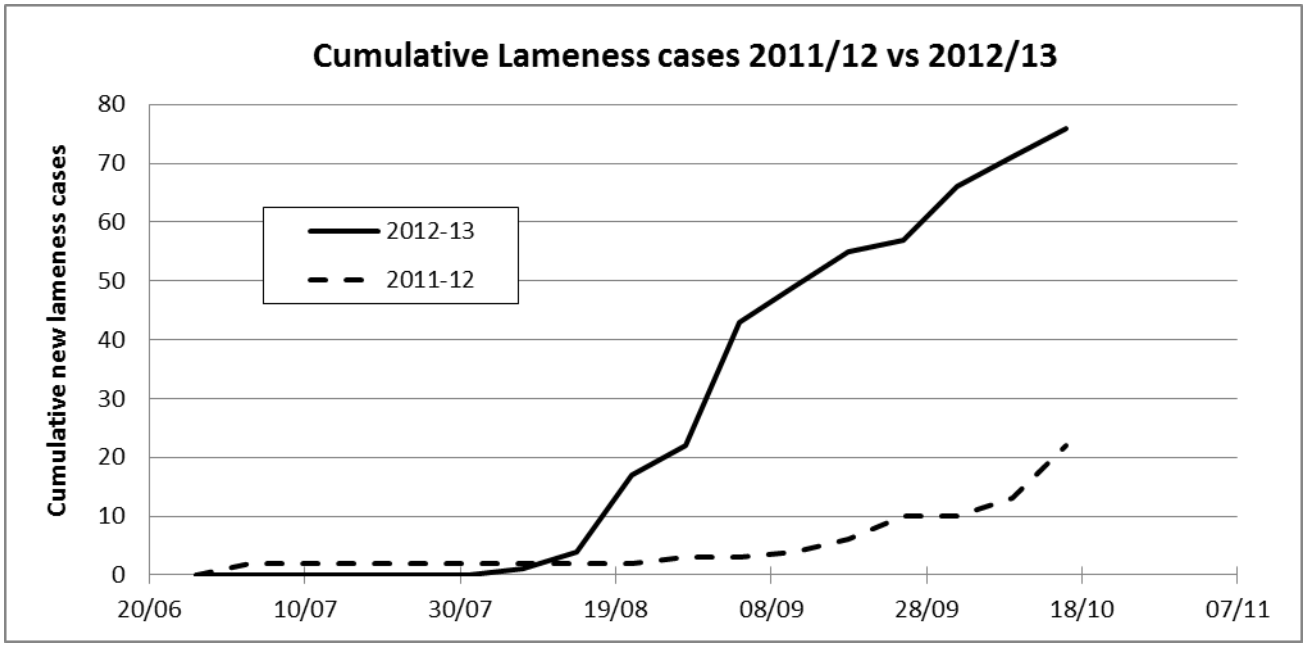
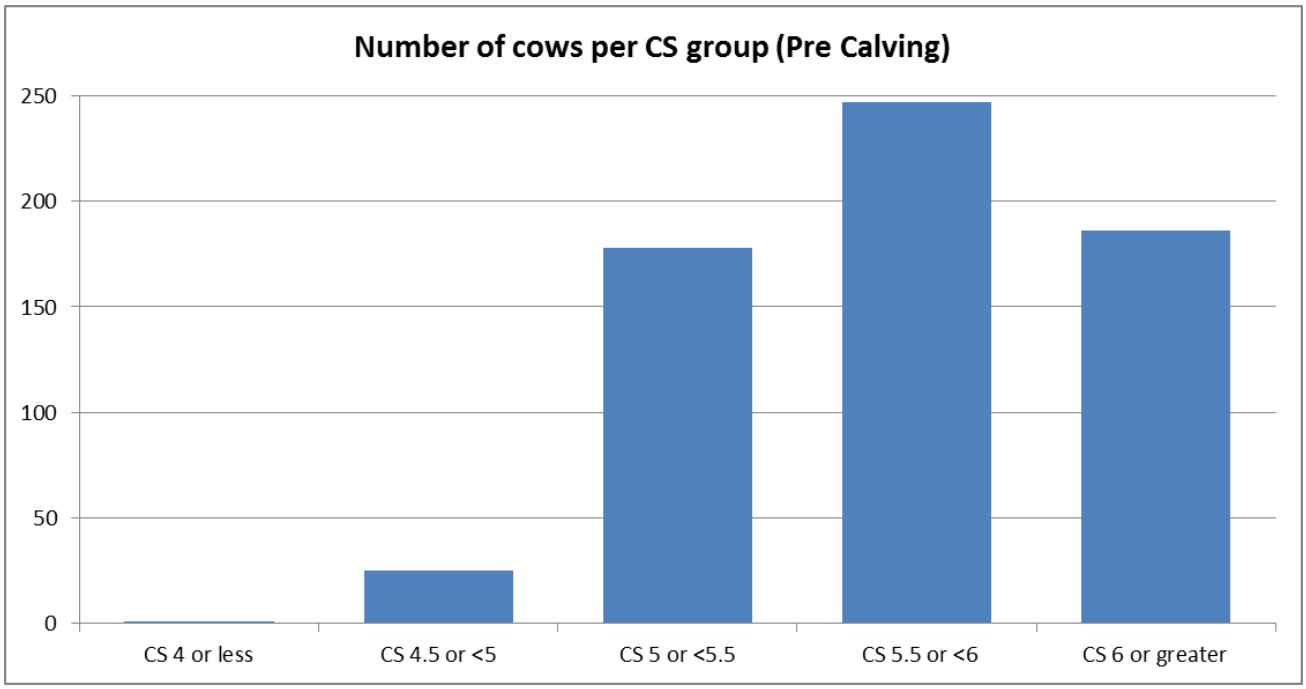


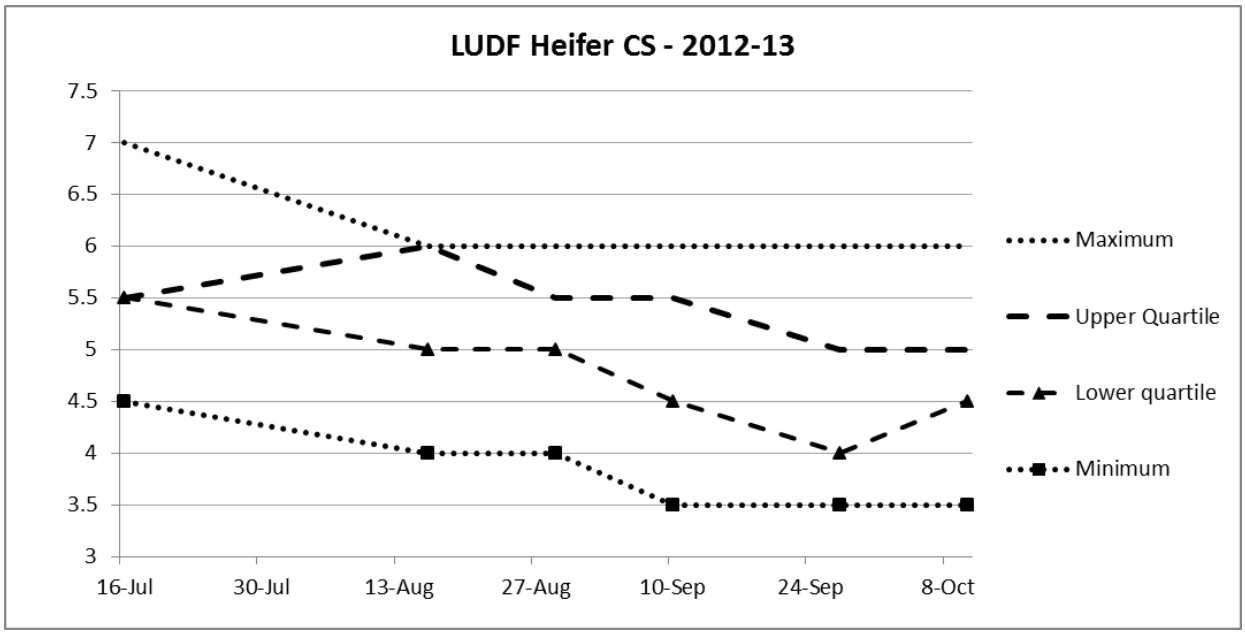
Figure 2. Effect of the sequence of applications of nitrogen (N), gibberellins (GA) or N and GA together (GA + N) on clover content in pastures in mid spring (Data courtesy of Melanie Miller).

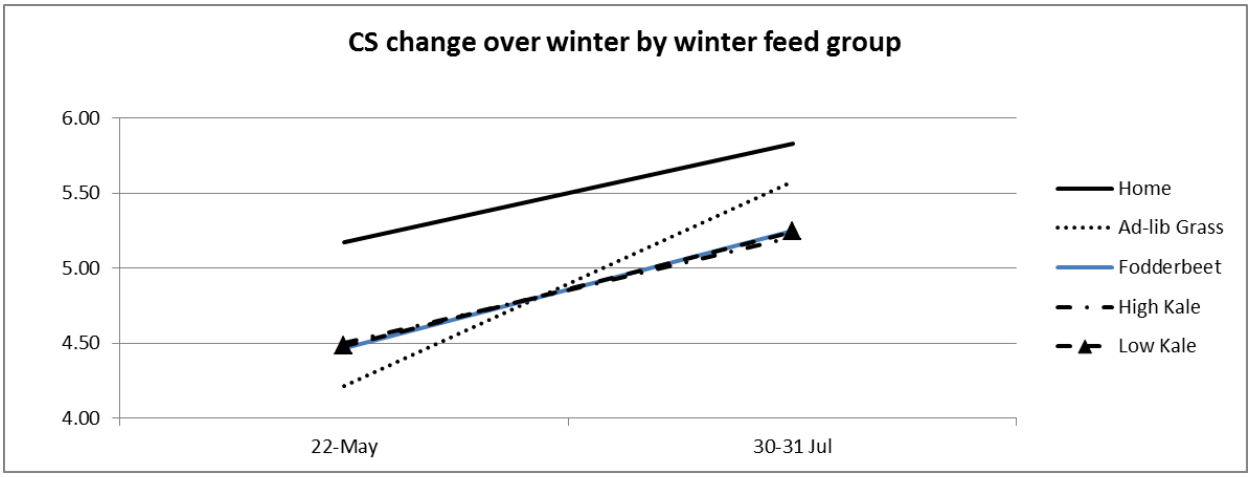
Lameness

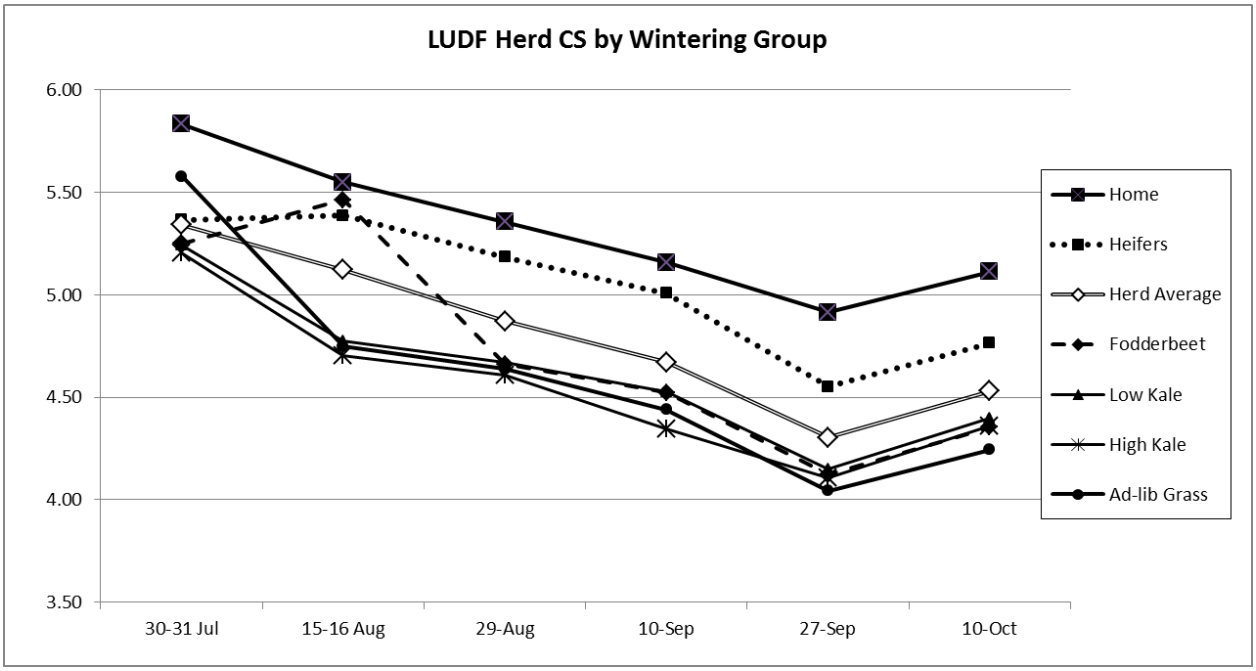


Cow Condition Score









LUDF Mating Plan – review of 2011 / update for 2012

Yearlings:

	2011 Mating Activity	Proposed 2012 Mating Activity
Tail Paint	Tail Paint and Kmars – 24hrs prior to start mating	Tail Paint and Kmars – 24hrs prior to start mating
AI	First 3 weeks mating except lower 40 based on BW – natural mated only	First 3 weeks mating – all heifers
Heat Detection	Visual Observation	Visual Observation
	Conducted by Peter and staff– first 10 days and one or two staff for remainder of AI	Conducted by Peter and staff– first 10 days and one or two staff for remainder of AI
Sire Selection	KiwiX DNA and excluded 1-2 bulls on predicted calving difficulty	Daughter proven KX (as below) calving difficulty not certain in DNA proven and composition of DNA proven more Friesian than F/J)
Bull Mating	Bulls purchased July 2011 and grazed on contract till mating. Vet checked and run with heifers after AI mating till end week 9	Bulls purchased Oct 2012. Vet checked and run with heifers after AI mating till end week 9 View blood tests, and get verification that shots have been completed. Can then decide to give them a booster shot if required.
Bull Power	8 bulls run as a team and swapped regularly following AI mating. 9 weeks total mating	Heifers will be run with bulls 1-2 days after AI to ensure in calf early. 8 bulls till end week 6 then 3 bulls for remaining period.
Animal Health	1 month pre start mating, copper bullet, selenium injection, drench pour-on (all), BVD vaccine (booster)	1 month pre start mating, copper bullet, selenium injection, drench pour-on (all), BVD vaccine (booster)

Background to Sire Selection recommendation (2012 mating):

- KX daughter proven team has higher BW than DNA proven or daughter proven Jersey options. LUDF was using Jersey until last season
- Calving difficulty for the KX daughter Proven team is based on actual calving information
- The KX daughter team averages F7 with only one bull F9 whereas the DNA team has 7 bulls F10 or greater

The DNA team contains a few more risk factors around calving difficulty unless you are prepared to nominate certain bulls

- Calving Difficulty is based on ancestry and genomic estimates
- 3 bulls in the team have a +ve calving index (i.e. on the more difficult side)

Milking Herd:

	2011 Mating Activity	**Proposed 2012 Mating Activity**
Condition Scoring	Fortnightly	Fortnightly
Small Herd	light and young cows separated from approx. 1st Sept	light and young cows separated from approx. 27 Aug
Vet Check	Metricheck – mid Sept and again pre start mating	Metricheck – 6 Sept and will be done again prior to start of mating
Tail Paint	5 weeks pre start mating	7 weeks pre start mating
	Record weekly (Protrack) and touch up paint	Record weekly (Protrack) and touch up paint
Non-Cyclers	Vet Check for Ovarian Cysts	Vet Check for Ovarian Cysts 3 weeks prior to planned start mating identify all cows not cycling and consider intervention where appropriate (see below)
AI	First 6 weeks mating	Considered first 4 weeks mating then bulls as had 200 calves at 4 weeks this year but in reality there are not many more straws required for weeks 5 and 6 of mating.
Heat Detection	Visual Observation on vet stand during milking, using Protrack to also display premating heat details, calving date and any prior mating dates	Visual Observation on vet stand during milking, using Protrack to also display premating heat details, calving date and any prior mating dates
	Conducted by Peter and staff	Conducted by Peter and staff Use Kmars second round to assist heat observation
Sire Selection	50 Friesian Straws to F6 or lower, rest KiwiX DNA.	370 cows - F8 – F16 - KiwiX DNA 220 cows - F0 – F7 - Friesian Daughter proven Approx 40 cows with BW less than 40 – Daughter proven KiwiX. Considered Hereford for these animals - but still have value as an AI calf
Bull Power	16 bulls provided 11 cows per bull of cows not in calf at end of 6 weeks.	Have 18 bulls: - allows for 5 bulls for the big herd, 3 for the small herd = 8, and swapped over every day requires 16 bulls (2 spare).
Animal Health	Blood test - sample 12 MA cows. BVD booster. Milking cow minerals as standard.	Blood test sample – 10 heifers and 10 MA cows. All results in desired range. BVD Booster 1 month pre start mating. Milking cow minerals as standard.

Background to Sire Selection recommendation (2012 mating):

- BW margin from DNA proven in Friesian team is not sufficient for the extra cost. Therefore (from an economic perspective)
  - Daughter Proven in Friesian,
  - DNA in KiwiX.
  - Daughter Proven in low BW cows.
- The reason for lifting the bar from F6 to F8 to mate to KX is that in 2012 KX team will average F7 which is a lower F content than last years (F8).

Additional Comments from Jack Hooper / LIC regarding Mating 2012:

1. Non - Cyclers. The herd is tail painted and most of your at risk cows will already be in the small mob. 2 or 3 days before PSM draft all cows tail painted, calved 35 or more days and not seen in season. Have the Vet inspect these cows and take appropriate action. These cows will probably fall into 3 groups (1) CIDR (2) Missed or (3) Treated. Repeat this process at the end of 3 weeks for any new cows calved 35 days and not mate din the 1st 3 weeks of AB
2. Would not run anoestrus cows with bull. DNZ has repeatedly stated there is no bull effect in terms of starting cows cycling, it is more likely that the bull is better in most cases in picking cows in season. However at LUDF we know from the previous study where Progesterone was measured, that Peter and his team are very good at picking cows in season.
3. Reducing mating from 6 weeks to 4 weeks - consider the value of a 4 day old AI heifer from what is now becoming an elite herd versus a bobby calf.
4. LUDF has an option to use KX DNA proven and HF daughter proven for a more cost effective mating programme this year, enabling the financial saving between DNA proven and Daughter proven to be invested in the wider reproductive programme – for example to ensure more likelihood of all cows cycling at PSM.
5. SGL (short gestation length) can play a role - for every 5 inseminations, 2.5 pregnancies with after culling 2.2 cows calving on average 7 days earlier than might have been the case. There is value both in the production and an improved chance of calving the following year. Cost of AB and NM roughly equate, if more bulls are required to cover additional numbers of expected cycling cows.

Options Considered for Non-Cyclers (cows calved more than 42 days and not showing signs of oestrus).

- Move to small herd (but possible higher risk of heats less obvious amongst smaller herd?)
- Preferentially feed (Lame cows on OAD had higher Incalf rate than the herd average)
- CIDR / PG and check again in 10 days
- Run with Bulls (see below)
- K-Mars
- Monitor weight gain, status etc., and make sure vet has really good look at them, including checking ketone levels.
- Take some bloods and compare them with the herd average.

Summary:

No CIDRs, blood analysis on some at risk cows. Use Rumensin bullet or drench, and vet checks. Primarily move non-cyclers to small herd to aid preferential feeding.
LUDF has chosen to put its emphasis into feeding for production and reproduction rather than expense into CIDR's for mating.

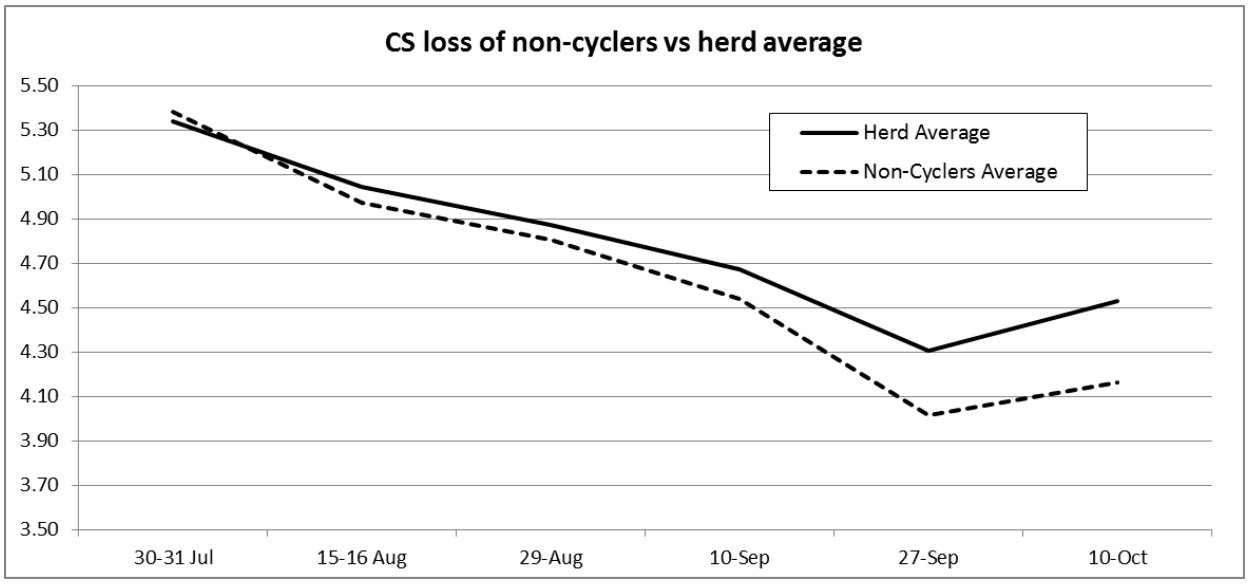
Analysis of Non Cycling Cows (as at 10 October 2012)

Non cycling cows by winter feedcrop:

	No Wintered	% Not Cycling
Heifers	**162**	17%
Fodderbeet	**67**	12%
Low Kale	**114**	13%
High Kale	**113**	12%
Ad-lib Grass	**134**	13%
Home	**78**	8%

Average Condition Score of each winter feed group compared to the non-cycling cows within each group:

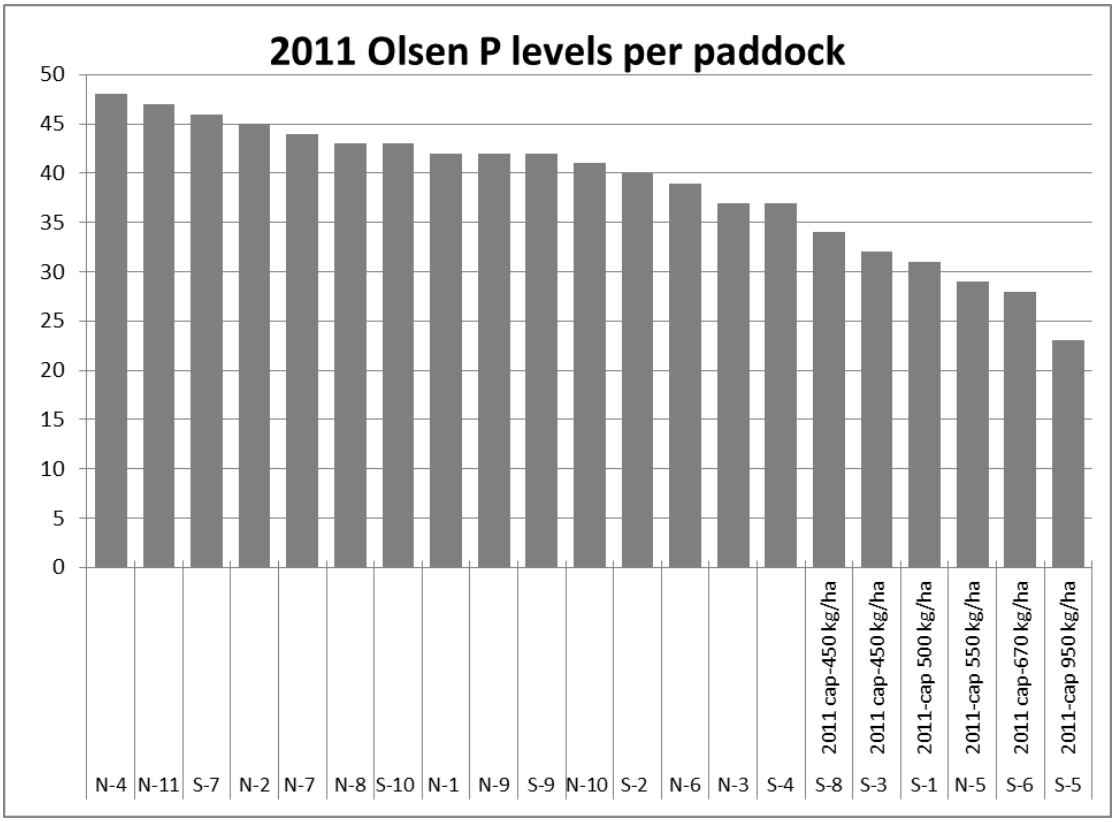
	16-Jul	26-Jul	31 Jul	16 Aug	29-Aug	10-Sep	27-Sep	10-Oct
Ave Fodderbeet			5.3	5.5	4.7	4.5	4.1	4.4
Non Cyc – Fod Beet			5.00	5.13	4.60	4.25	3.83	3.71
Ave High Kale	5.3		5.2	4.7	4.6	4.3	4.1	4.4
NC - High Kale	0.00		5.18	4.75	4.63	4.29	3.82	4.00
Ave Low Kale	5.5		5.2	4.8	4.7	4.5	4.1	4.4
NC - Low Kale	5.50		5.27	4.75	4.61	4.47	3.96	4.17
Ave Home	6.0		5.8	5.6	5.4	5.2	4.9	5.1
NC - Home	6.00			4.50	5.17	4.90	4.67	4.67
Ave Ad-lib Grass	5.3	5.2	5.6	4.7	4.6	4.4	4.0	4.2
NC - Adlib Grass	5.00	5.50	5.71	4.60	4.82	4.50	3.94	3.97
Ave Heifers	5.5	5.6	5.4	5.4	5.2	5.0	4.6	4.8
NC - Heifers	5.54		5.50	5.27	4.91	4.74	4.06	4.38



Capital Fertiliser Applications – 2011 / 2012 Comparison

LUDF began individually soil testing each paddock in winter 2011 with the intention to apply more targeted fertiliser based on actual soil tests per paddock, rather than the previous multi paddock soil testing.

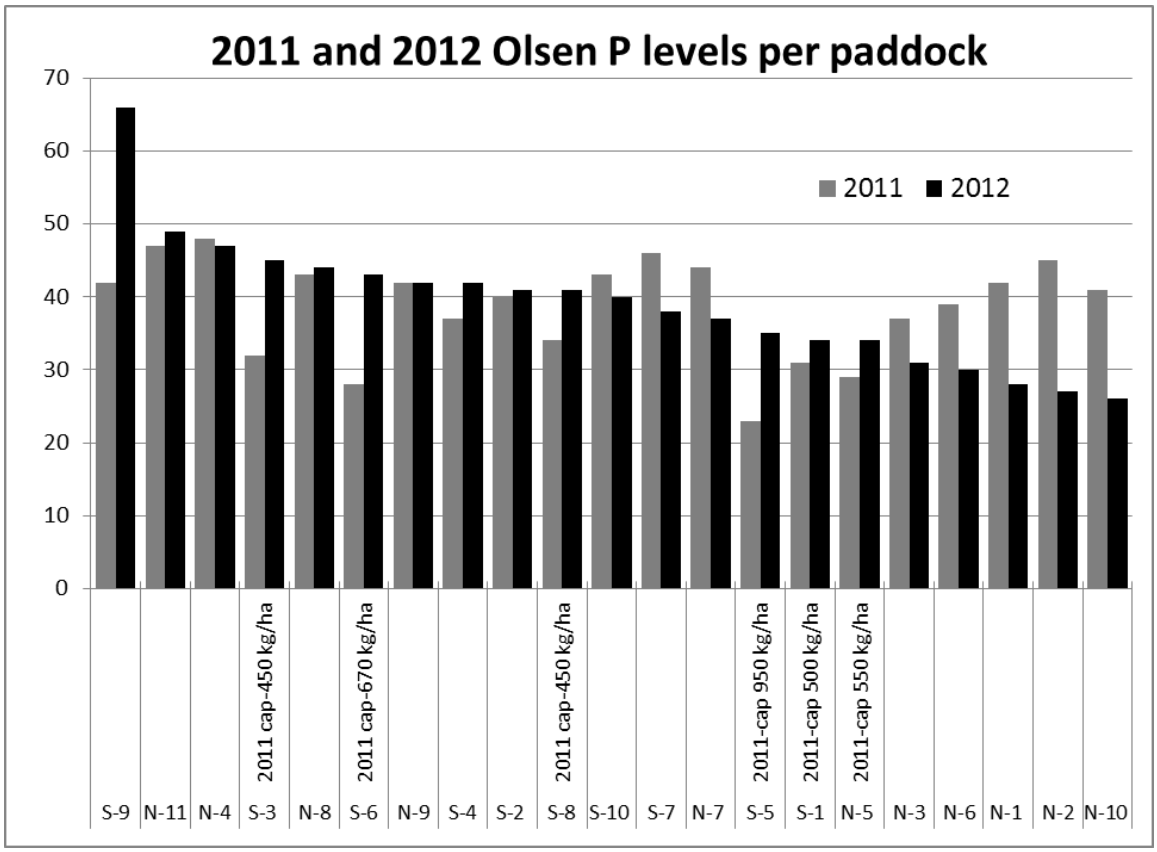
This identified 6 paddocks with Olsen P levels between 23 and 34, while the farm average was 39. Capital Phosphate fertiliser was applied at rates between 450 and 950 kg Superphosphate/ha to lift P levels towards their agronomic and economic target, as identified by the Overseer Econometric Model (see LUDF October 2011 Focus day notes). The 2011 soil tests are shown below, ranked from highest Olsen P to lowest.



Further individual paddock soil testing this season indicated these six paddocks have all shown increases of P levels of 5 – 15 Olsen P units. It has also identified another five paddocks that on this winter's soil test have Olsen P levels below 30. Capital Fertiliser may be applied to these in early autumn, depending on payout and projected end of year profit.

The process of individual paddock soil testing will continue. Paddocks such as S9 that show good P levels last year and high levels this year will be potential candidates for below maintenance phosphate applications in subsequent years if they continue to show higher than optimum Olsen P levels. The natural variability of Olsen P soil tests (+/- 20%) cautions against immediate application of below maintenance Phosphate this season.

Last year's individual paddock Olsen P tests are graphed against this year's results below. The 2011 capital fertiliser applications identify the increase in P from last year to this year.



The farms average Olsen P has remained at 39 in both 2011 and 2012.

DairyNZ Forage Value Index

Update: October 2012

David Chapman and Jeremy Bryant (DairyNZ); Graham Kerr (NZ Agriseeds Ltd.)

Key points

- The Forage Value Index (FVI) is currently based ***only*** on seasonal dry matter (DM) yields. It provides a comparative estimate of profit ($/ha) for combinations of perennial ryegrass cultivars and endophytes.
- FVI are currently estimated from small-plot, independent National Forage Variety Trials run under the auspices of the New Zealand Plant Breeding & Research Association (NZPBRA) that comprise members from the major seed companies
- The FVI is most similar to the Production Worth of dairy cows
- Four regional zones (Upper North Island, Lower North Island, Upper South Island, and Lower South Island) that consider the different value of extra feed within seasons in each region are used to group the FVI
- FVI ratings are only available for a limited combination of cultivars and endophytes (www.dairynfvi.co.nz). More will be eligible in late 2012, and each year subsequently.
- The FVI will become more comprehensive (e.g. increasing number of eligible cultivars and endophyte combinations, *persistence and nutritive value information*) ***over the next 2-5 years***.

Practical FVI example - Nui

First, it is given a star rating for its individual ***Performance Values*** (PV); top 20% = five stars and bottom 20% = one star for FVI eligible cultivar x endophyte combinations (Figure 1). PV are then multiplied by ***Economic Values*** (EV) and summed to calculate its FVI. Over time as persistence and nutritive value information is added to the FVI, its FVI could increase or decrease but this information is not yet available.

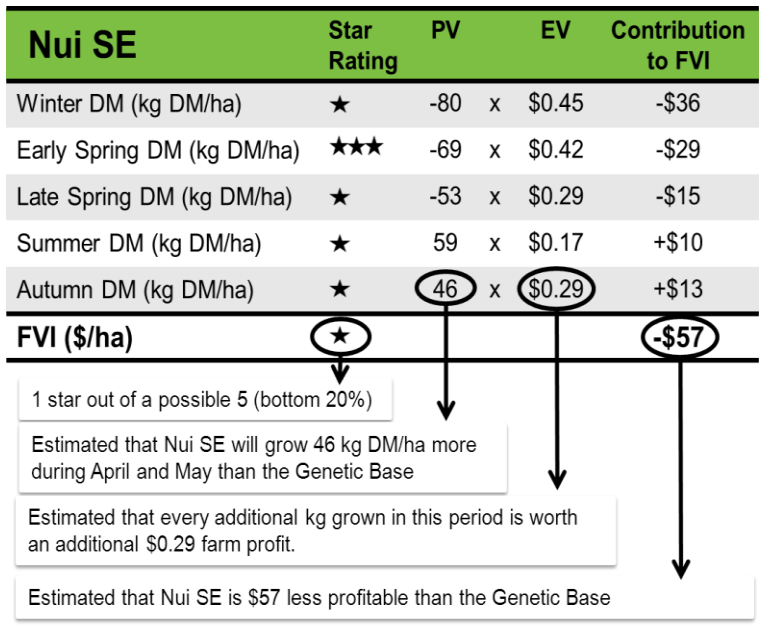


Figure 1: Illustration of how the FVI is calculated and what it means in practical terms for the Upper South Island region

DairyNZ and NZPBRA initiatives to produce a robust FVI

Nutritive value trials (NZPBRA)

Nutritive value is being assessed also in small plots, under irrigation, in Canterbury, starting in 2013. Most of the current commercial perennial ryegrass cultivars will be included, and their digestibility, fibre content, and protein content monitored directly throughout two full years. ***This information will feed into the FVI system to provide nutritive value performance values – estimated time frame 2 years*.**

Persistence trials (NZPBRA)

Small plots, set up at multiple localities across New Zealand, have been sown at sites known to 'challenge' perennial ryegrass survival. Each persistence trial will run for at least five years. Over this time, the cultivars will be subject to 'normal' farm management on commercial dairy farms, and their physical survival will be assessed annually. ***This information will feed into the FVI system to provide persistence performance values – estimated time frame 3 - 5 years*.**

Species interaction trials (DairyNZ)

Eight cultivars of perennial ryegrass are being grown with or without white clover, and at two levels of N fertiliser input at four locations in NZ to investigate:

- If the rankings seen in NFVT trials (where only the ryegrass component is measured) are the same as the rankings calculated when grass and clover are grown as a mixture (where total pasture yield is measured).
- If the rankings do differ, what are the factors responsible for re-ranking?
- ***How to adjust NFVT data to produce a robust estimate of relative rankings for total pasture yield including clover***.

On-farm cultivar proving scheme (DairyNZ)

Three to five perennial ryegrass cultivars are sown in a mixture with two standard white clovers in strips lengthwise in paddocks on six commercial dairy farms. Paddocks are subject to normal farm management, with the farmer carrying out regular farm walks to determine growth of individual cultivar strips. ***Information from these farm trials will be used to test that cultivar rankings in a commercial farm environment match those derived from small plot trials, and may be used in FVI calculations in the future.***

Identifying poor paddocks – the game breaker!

On NZ dairy farms we are pretty good at most parts of pasture renewal - sowing new pasture, fertilising, spraying weeds. The question we raise is – *How good are you at identifying your poor producing paddocks?* Often this is done visually, or by 'gut-feel'. We congratulate those amongst you who are looking for better ways, trying to QUANTIFY what is going on your farm.

If you choose a paddock for renewal that is underperforming by 6t DM/ha, rather than by 3t DM/ha, you could grow another 3t DM/ha with a value of $1275/ha/year! (Based on 85% eaten, converted at 12 kgDM/kgMS & $6/kgMS.)

How we do it at LUDF

We collect and analyse grazing records. Our best paddocks grow faster, are ready for grazing quicker, and feed more cows.

Even on the LUDF, where we renew 10-15% of the farm each year, and actively target the poor performing paddocks, some paddocks are grazed 4 or 5 times more each season than others.

1. Grazing record spread sheet

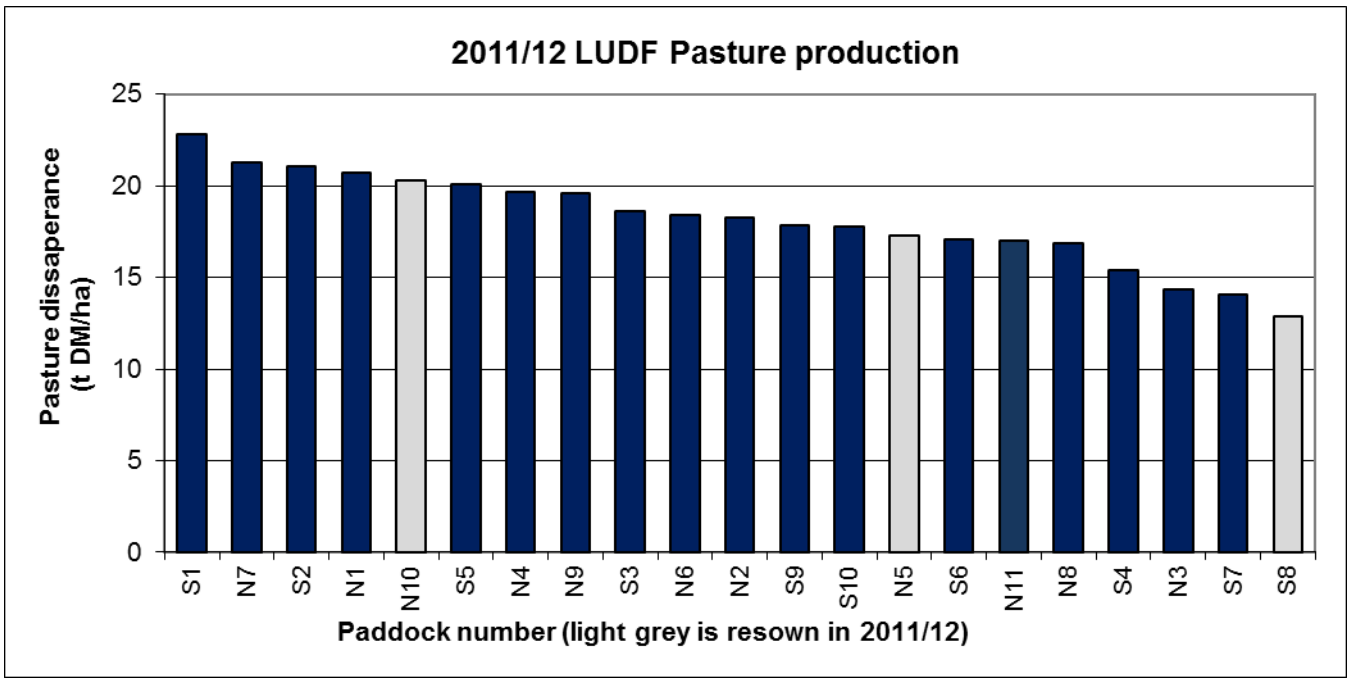
This is the core tool we use, recording what stock are in each paddock and the silage fed.

Date	Number of Cows	Am vs Pm	Paddock Number	Pasture allowance kgDM/cow	Suppl mob t DM	Suppl cow kg DM	Pasture eaten kgDM/cow
1-Oct	560	AM	N1	8			8.0
	560	PM	N1	8			8.0
2-Oct	560	AM	N1	8			8.0
	560	PM	N1	8			8.0
3-Oct	560	PM	N10	8			8.0
	560	AM	N10	8	2.5	4.5	3.5
4-Oct	560	PM	N10	8			8.0
	560	AM	N10	8	2.5	4.5	3.5
5-Oct	560	AM	N10	8			8.0
	560	PM	N11	8			8.0
6-Oct	560	AM	N11	8			8.0
	560	PM	N11	8			8.0

(If you want a copy of this excel spread sheet email: gkerr@agriseeds.co.nz)

2. Analyse grazing records for season

Total up what number of cows each paddock has fed. Correct for different paddock sizes. Add in any SILAGE MADE (as that's growth too). For 2011/12 the LUDF looked like this:



3. Compare ACTUAL growth with POTENTIAL

To look at potential benefit of renewal, need to also consider whether there are reasons holding it back. E.g. at LUDF paddock S10 is the wettest paddock on the farm and won't produce 20 t DM/ha without a major investment in drainage.

4. Check for underlying problems

Sometimes it is simply the wrong pasture species. But not always. Check if there have been reasons behind poor performance you need to rectify e.g. soil P levels, soil pH, drainage, pests, compaction.

5. Get going!

You now know what your farm looks like for a key asset – it's pastures.
The analysis tells you whether you should be renewing 5%, 10% or 15% a year.
And you will be REGRASSING THE CORRECT PADDOCKS – to give you the best return on your investment into pasture renewal.

Review of the last 4 seasons pasture renewal at LUDF

Each year the LUDF team identify paddocks to renew. This is based on the performance of the paddock in terms of total pasture eaten per ha and a judgement of pasture eaten relative to the potential of the paddock.

Most pasture renewal has occurred on South Block paddocks as the initial sowing down at conversion did not work as well, and we have seen that pastures do not persist as well on the heavier, wetter and potentially more compacted soils.

Below is a record of pasture disappearance for all paddocks renewed from 2008 to 2012. What it shows is:

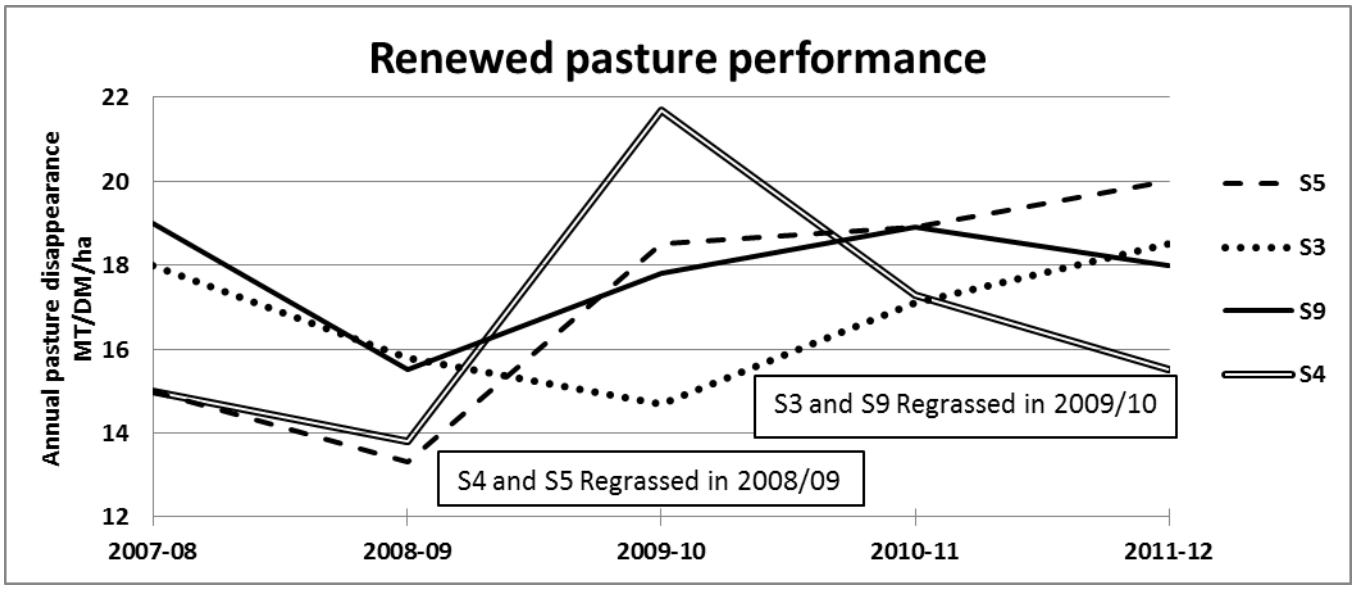
- Of the 6 paddocks renewed from 2008 to 2011, [ie. Those for which we have a subsequent years production measure] there was on average a 2.5 t DM/ha/year improvement in pasture eaten in 2011-12 (from 16 t DM/ha to 18.5 t DM/ha)
  - This has a value of: 208 kgMS/ha, or $1250/ha/year (at $6/kgMS)

- Some paddocks can take a season to get well established and up to peak yield, we need to be mindful of this in managing young pastures.

- Whilst S4 and S5 are apparently similar paddocks (side by side), the pasture renewal of S4 has been much less successful. Recent investigations show that S4 has a soil compaction issue. We intend to use subsoiling to overcome this issue, NOT regrassing, as the pasture has a good density of ryegrass, of relatively new pasture genetics.
  - S4 vs S5 demonstrates the need to identify & fix any underlying problems (e.g. compaction) when renewing pasture. Otherwise you may just end up with the same result again.

Annual pasture disappearance from grazing records [t DM/ha]

Paddock	Regrass Year	2007-08	2008-09	2009-10	2010-11	2011-12
N10	2011-12	16	18.7	17.7	17.5	20
N5	2011-12	17	16.5	19.3	16.4	17.5
S8	2011-12	21	18	19	14.2	13
N2	2010-11	15	15.9	16.8	16.2	18
S2	2010-11	21	16.3	17.8	17.3	21
S3	2009-10	18	15.8	14.7	17.1	18.5
S9	2009-10	19	15.5	17.8	18.9	18
S5	2008-09	15	13.3	18.5	18.9	20
S4	2008-09	15	13.8	21.7	17.3	15.5
	Shaded cell = Year of Regrassing					



Delivering and Achieving Appropriate Liveweight Targets for Young Stock

LUDF Focus Day October 2012

Greg McNeil
Jack Hooper

South Island Dairy Farms

Breed Choices for their Future Herd

2011 PS Inseminations Breed of AI Sire Used

%	SI	NZ
HF	52	52
KX	35	31
Jer	12	16

% Inseminations by Cow Breed

Total Insems	SI	NZ
HF %	36	37
KX %	55	51
Jer %	9	12

Calves Born 2012 by Breed

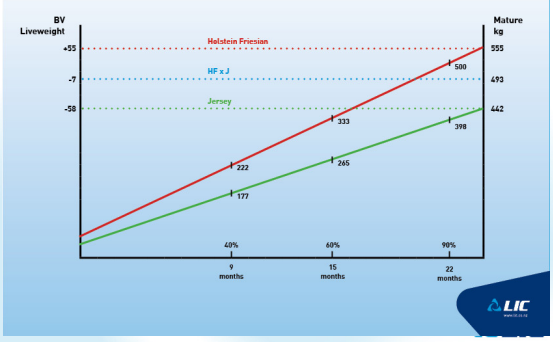
	SI	NZ
Jer %	4	7
HF %	23	26
KX %	73	67

Crossbreeds
- 35 % from KX PS Team
- 38% from Designer Crossing

Breed Choices for Replacements

KX (dark)	36.5 %
HF	23.2 %
KX (status quo)	23.1 %
KX (light)	7.7 %
KX (first x)	6.0 %
Jersey	3.5 %

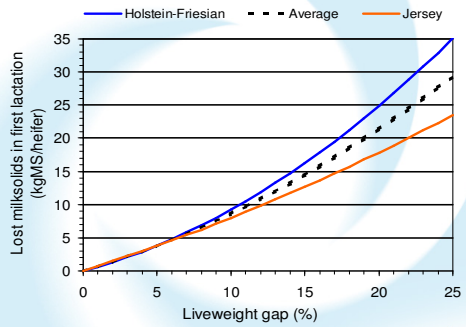
Breeding Values and Growth Rate targets



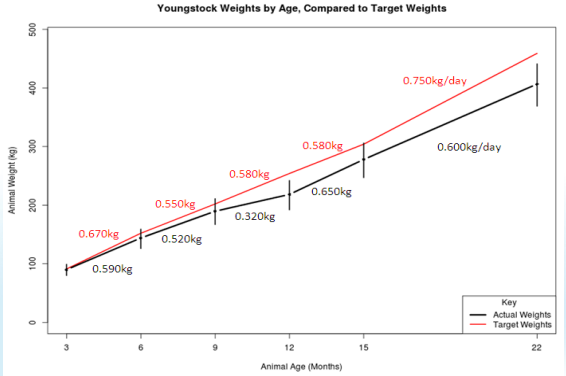
The Brutal Facts

- It costs $1360 to raise a heifer to calving as 2yo
- Heifers don't break into profit until their 2nd lactation
- Of the young stock that are weighed, 73% are >5% underweight at 22 months (**127,000** weighings on Database)
- Study of 2007 born animals **(28,271)**
- **15%** did NOT record a 2nd calving
- **35%** did NOT record a 3rd calving
- Only 10% of MINDA customers are putting liveweights on the database

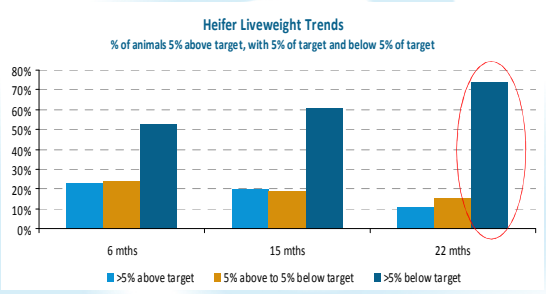
Heifer live weight pre-calving: Lost milk production in first lactation



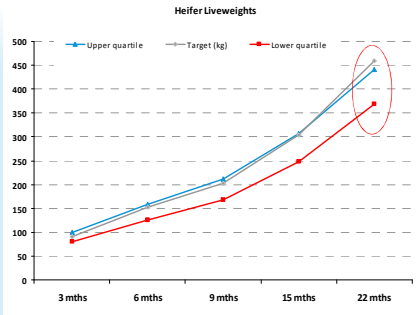
Youngstock Weights by Age, Compared to Target Weights



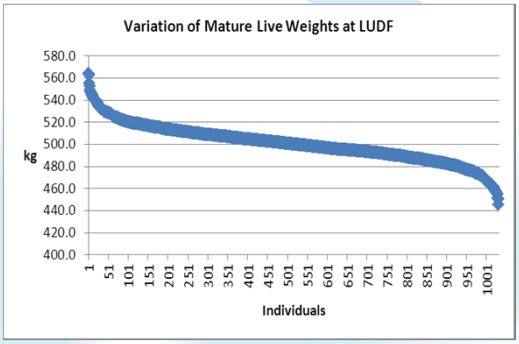
73% were more than 5% below their target liveweight at 22 months of age.



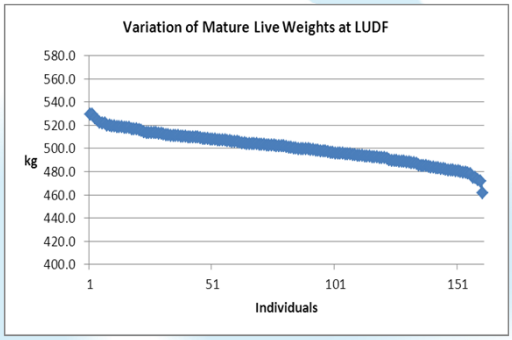
The average weight of a 22 month animal was 52kg (11%) below target. BUT the lower quartile were 90kg (20%) below target.



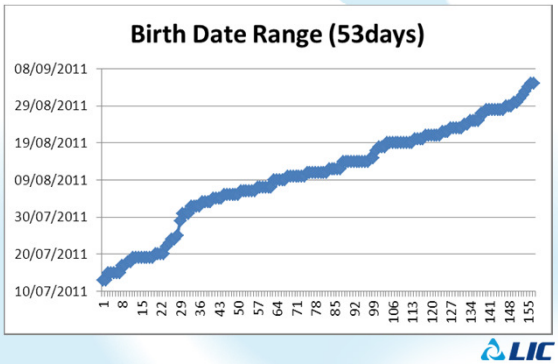
LWT (bv) Variation at LUDF – All



LWT (bv) Variation at LUDF – 2011 born



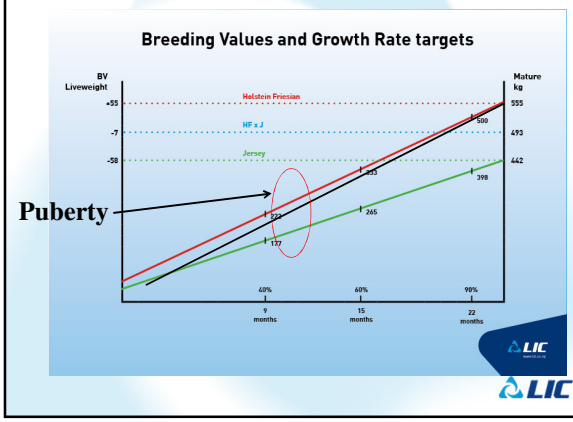
LUDF Age Variation – 2011 born



Impact of birthdate on reaching liveweight targets

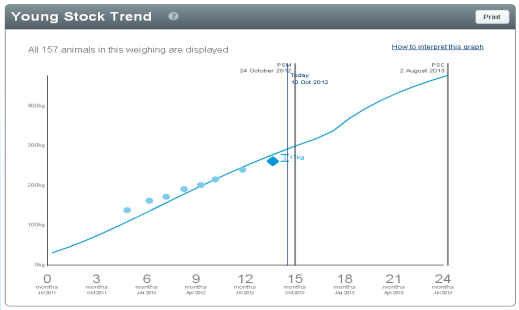
15-Jul-11	15-Aug-11	1-Sep-11
35 kg	35 kg	35 kg
PSM 18-Oct-12 (to calve 1-week prior to herd) Target = 300 kg		
0.6 kg/day	0.65 kg/day	0.68 kg/day

Breeding Values and Growth Rate targets

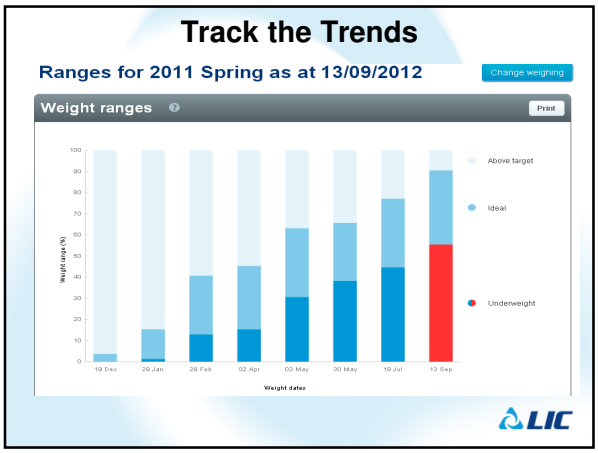


Monitor the Mob

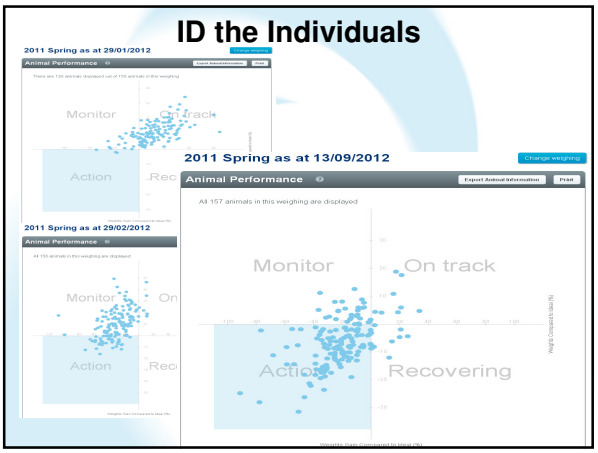
Overview of 2011 Spring as at 13/09/2012



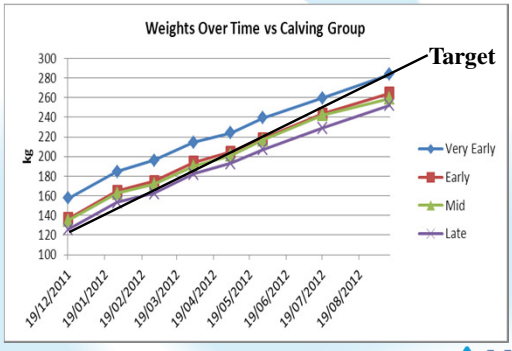
Track the Trends



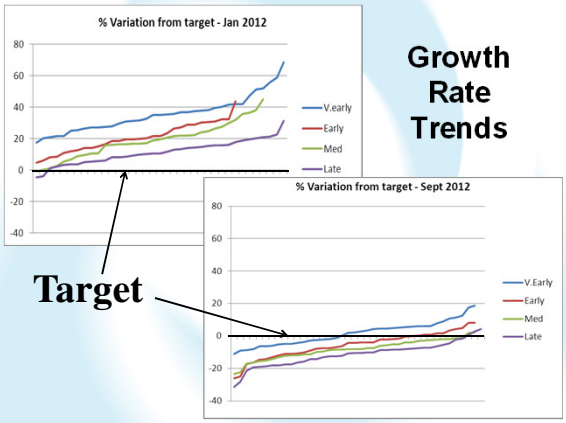
ID the Individuals



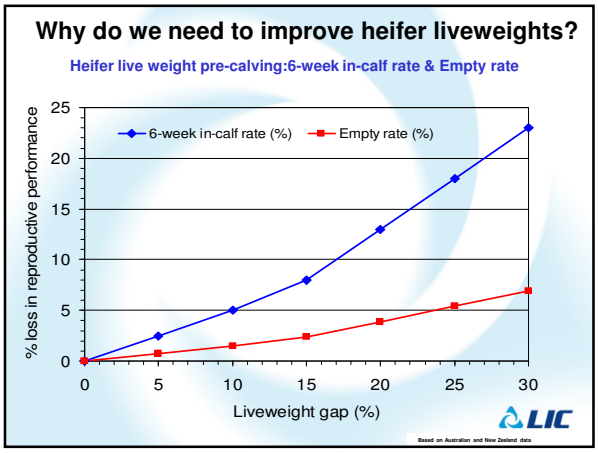
Birth date / Age Impact

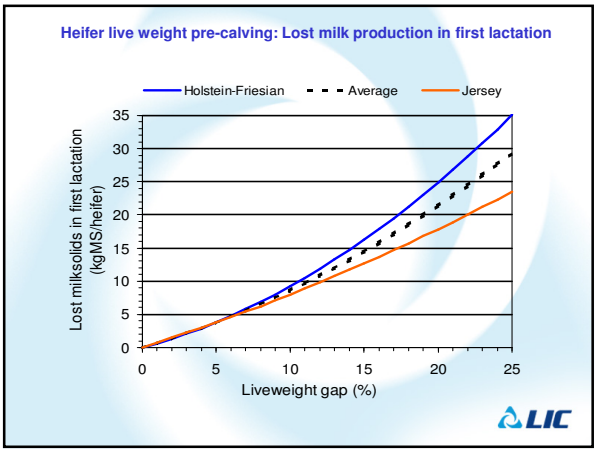


Growth Rate Trends



Why do we need to improve heifer liveweights?





Lincoln University Dairy Farm - Farm Walk notes

Tuesday, 16th October 2012

Critical issues for the short term

1. **Monitor average pasture cover and respond to surplus or deficit.**
2. **Maintain post grazing residuals of 7 - 8 clicks.**
3. **Use back-fences on all herds whenever paddock grazing takes more than 36 hours.**
4. **Continue Mg supplementation via water system.**
5. **Oversee heifer mating off-farm.**
6. **Observe and record pre-mating heats and identify non-cyclers.**
7. **Achieve high intakes with an energy intake target of 250 MJME/cow/day.**

Herd Management

1. 629 cows have calved, 623 cows are milking into the vat, and there are 2 colostrum cows and 4 treatment cows. The 2 herds will continue to be managed separately until the end of the season; there are 233 cows in the small herd, 382 in the big herd.
2. 2 cases of mastitis this week, 41 to date, with 5 new cases of lameness.
3. AI mating of heifers started off farm, we are mating 159 with 10 mated this morning. Heifers will be yarded and observed and mated daily for three weeks.
4. 550 cows had calved by the end of 6 weeks calving i.e. 87% of the peak herd [630] against a target of 87%.
5. All cows have been tail painted to enable monitoring of pre mating heats, there have been 148 observed pre-mating heats this last week, equivalent to 70%.
6. Jersey bulls have been purchased, and tested and vaccinated for BVD. They were selected on scrotal circumference in addition to the usual mating suitability criteria and are currently being well fed at grazing.
7. The herd was vaccinated for BVD on 24th September.
8. Mating of the herd will begin on 25th October

Growing Conditions

9. Pasture growth has been 88 kg DM/ha day, up from last week's 74.
10. Soil temperatures at 9 am have been an average of 10.3 degree, similar to last week.
11. There was 47 mm rain almost in one continuous event at the weekend. The farm has stood up very well to this with only small areas of superficial pasture damage. The Aquaflex soil moisture meters indicate that soil moisture levels are now at around 80-90% of field capacity. We will irrigate over the next week as required to hold soil moisture.

Pasture Production and Management

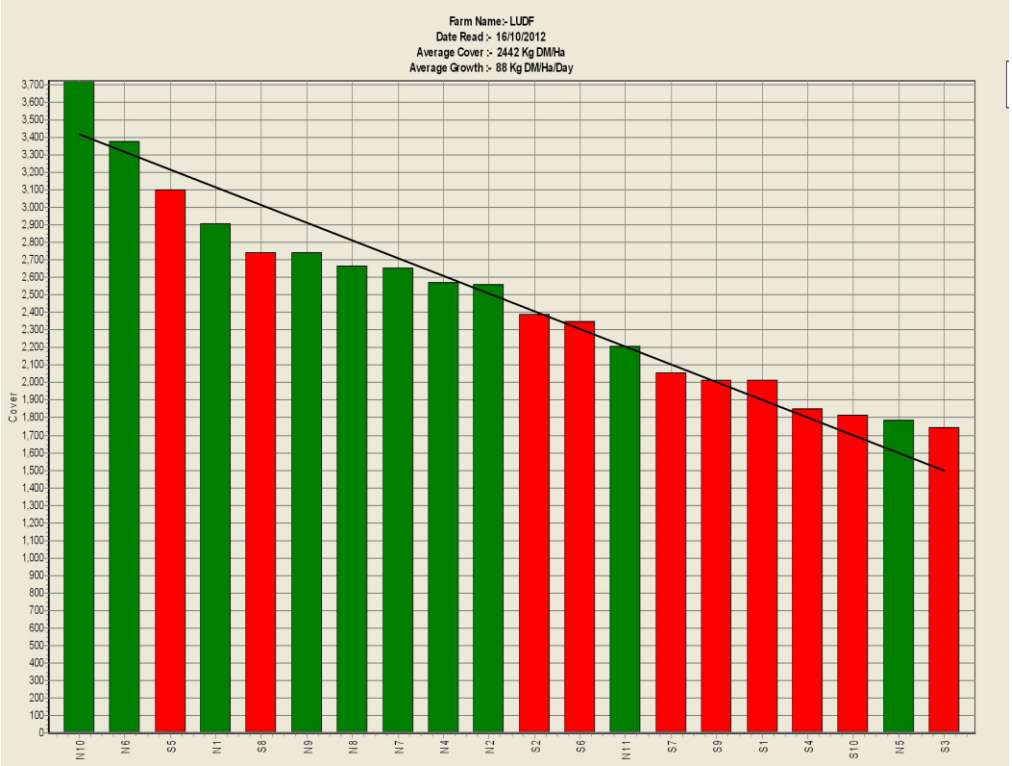
12. 22ha of pre mowing has occurred.
13. 40kg N applied to 46 ha.
14. The last of our maintenance fertiliser has been applied. 500kg superphosphate applied to all of the non-effluent areas and 300kg sulphur super applied to the effluent area. 3 paddocks on the farm have Olsen P levels less than 30 and MAY get a further 500kg Super during the season. Another 4 have Olsen P's between 30 and 35 and MAY get a further 300kg Super.
15. Paddock N-3 was sprayed out on 2nd October for re-grassing, drilling has been delayed due to the weekend's heavy rain but it is expected it will be done over the next 2-3 days. N-3 has been re-grassed despite being in a feed deficit as in 3 weeks when it would be due for grazing again we should have a surplus.
16. The farm has a 1.6t DM feed surplus, an improvement on last week as we have also increased our per cow intake targets to 250 MJME/cow/day leading up to mating. Average cover is 2442 kg DM/ha, an

increase of 178kg DM/ha from last week. 4.4kg DM of silage per cow/day was fed out to all cows, and we expect to revert to feeding all cows pasture from tomorrow. The weather outlook is for more cool Southerly weather but indications are that the farm can now grow demand and we will look to marginally shorten round length [currently 22 days]. Cows have held liveweight.

Feeding Management

17. The milkers need about 250 MJME to produce 2.2 kg MS, maintain themselves, and allow for 0.5kg weight gain per day. Cows are currently producing just over 2kg MS/day. It is estimated that the overall herd is eating about 13.6 kgDM of 12.4 MJME pasture per day and 4.4 kg DM of 11.6 MJME grass silage making intake around 224 MJME.

18. The focus is on ensuring calved cows are well fed and paddocks grazed to even consistent residuals with a target of 7-8 clicks on the rpm. This week's wedge is printed below.



19. Last week we had a 22 day round, we will allow the rotation to shorten to 20 days over the coming week if it appears that we are able to keep growing pasture.

20. Data sheet

LUDF Weekly report	25-Sep-12	02-Oct-12	9-Oct-12	16-Oct-12
Farm grazing ha (available to milkers)	160	160	160	160
Dry Cows on farm / East blk / other	40/0/0	17/0/0	5/0/0	2/0/0
Culls (Includes culls put down & empties)	5	0	0	0
Culls total to date	15	15	15	15
Deaths (Includes cows put down)	1	0	0	2
Deaths total to date	7	7	7	9
Calved Cows available (Peak Number 632…)	588	617	629	630
Treatment / Sick mob total	4	4	2	4
Mastitis clinical treatment	3	3	2	2
Mastitis clinical YTD (tgt below 64 yr end)	36	39	39	39
Bulk milk SCC (tgt Ave below 150)	120	114	108	132
Lame new cases	2	9	5	5
Lame year-to-date	57	66	71	76
Lame days YTD (Tgt below 1000 yr end)	791	861	896	966
Other/Colostrum	0/14	0/7	0/9	0/2

	25-Sep-12	2-Oct-12	9-Oct-12	16-Oct-12
Milking twice a day into vat	560	595	615	615
Milking once a day into vat	10	11	5	8
Small herd	198	202	224	233
Main Herd	362	393	391	382
MS/cow/day (Actual kg / Cows into vat only)	2.02	1.98	2.02	2.09
MS/cow to date (total kgs / Peak Cows 632	60	73	86	101
MS/ha/day (total kgs / ha used	6.18	7.25	7.75	8.00
Herd Average Cond'n Score	0.00	4.30	4.50	0.00
Monitor grp LW kg WOW 157 early MA calvers	457	454	450	450
Soil Temp Ave Aquaflex	8.5	10.5	10.2	10.3
Growth Rate (kgDM/ha/day)	43	60	74	88
Plate meter height - ave half-cms	11.5	11.7	12.6	13.9
Ave Pasture Cover (x140 + 500)	2111	2150	2264	2442
Surplus/[deficit] on feed wedge- tonnes	[20]	[17.7]	[1]	1.6
Pre Grazing cover (ave for week)	2744	2724	2742	2917
Post Grazing cover (ave for week)	1650	1550	1550	1650
Highest pre-grazing cover	2800	2866	2804	2992
Area grazed / day (ave for week)	6.80	7.02	6.59	7.14
Grazing Interval	24	23	24	22
Milkers Offered/grazed kg DM pasture	0.0	14.6	9.9	14.4
Estimated intake pasture MJME	0	181	121	179
Milkers offered kg DM Grass silage	0	4	7	4
Silage MJME/cow offered	0	11	11	12
Estimated intake Silage MJME	0	41	76	49
Estimated total intake MJME	0	222	196	227
Tgt total MJME Offered/eaten (incls 6% waste)	0	228	228	255
Pasture ME (pre grazing sample)	12.7	12.4	12.2	12.4
Pasture % Protein	22.8	25.4	31.5	26.8
Pasture % DM - Concern below 16%	20.2	18.9	16.2	14.7
Pasture % NDF Concern < 33	32.2	33.1	32.8	30.8
Mowed pre or post grazing YTD	93.1	113.4	113.4	135.0
Total area mowed YTD	114.9	135.2	135.2	156.8
Supplements fed to date kg / cow (632 peak)	41.3	66.6	112.9	143.9
Supplements Made Kg DM / ha cumulative	210.6	210.6	210.6	210.6
Units N applied/ha and % of farm	0	40units/20%	40units/37%	40units/28%
Kgs N to Date (whole farm)	82	92	114	165
Rainfall (mm)	11.6	3.8	21	47.6
Aquaflex topsoil rel to fill point tgt 60 - 80%	40-60	39 - 35	50-80	100

The next weekly farm walk will be on 23RD October at 9.00 am.

Remember LUDF Focus day, this Thursday 18th October at 10-15am

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. Phone SIDDC – 03 325 3629.

Management Group

Peter Hancox (Farm Manager), Steve Lee (DairyNZ).