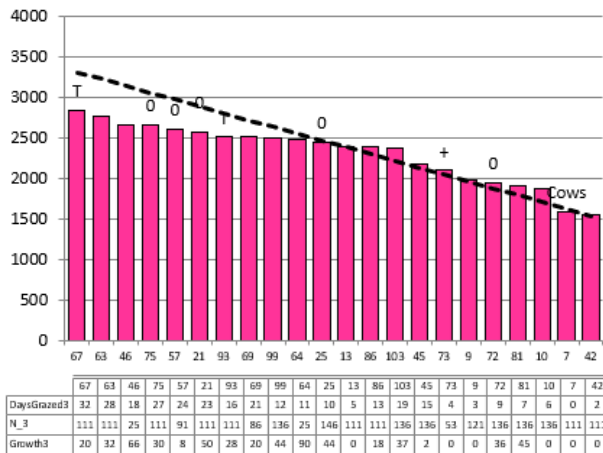




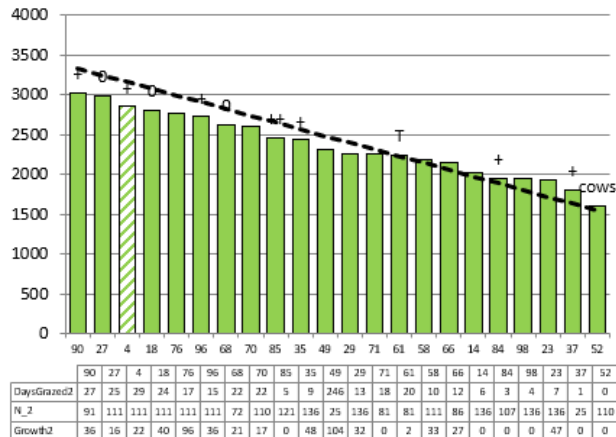
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Standard Kale



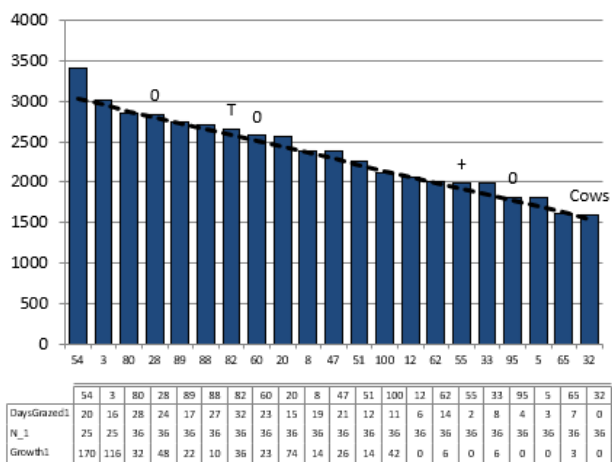
Farmlet notes: Visual APC 2372, GR 46; average pasture growth below demand this wk, except new grass pdks which we target for a 15-20 grazing interval; pasture cuts indicating 2-400 kg DM more in pdks than plate meter is estimating; x1 pdk mown for baleage; Inshed feed increased to 1.5 kg DM for next week; plan to step over poor quality high mass pdks

Standard Fodder Beet



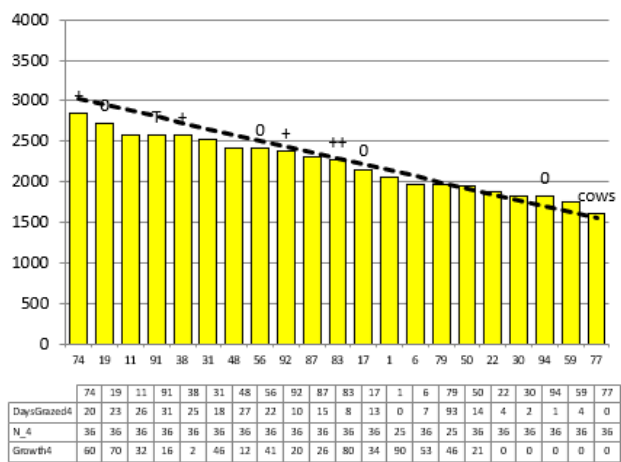
Farmlet notes: Visual APC 2434, GR 45; average pasture growth below demand this week, except new grass pdks which we will be targeting for a 15-20 grazing interval; pasture cuts indicating 2-400 kg DM more in pdks than plate meter is estimating; x1 pdk mown for baleage; x4 pdks topped post grazing this week; PKE only to light BCS cows; crop pdks sprayed

Low Impact Kale



Farmlet notes: Visual APC 2355, GR 58; average growth just below demand but farmlet in surplus with x2 new grass pdks at top of wedge; target new grass pdks for 15-20 day return interval to maintain quality; x2 pdks identified for conservation; inshed feed only to low BCS cows; N application to new grass pdks; x1 pdk topped this week; Good quality pasture on offer

Low Impact Fodder Beet



Farmlet notes: Visual APC 2307, GR 48; average growth just below demand except new grass pdks which will target for 15-20 day return interval to maintain quality; a lot of poorer quality pastures with lots of stem through the wedge; 1 kg PKE/cow; N application to new grass pdks; x2 pdks topped this week; Will step over any poor quality pdks above target for conservation



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Table 1: KPI Table across all farmlets

KPI	STd Kale Pink	LI Kale Blue	STd FB Green	LI FB Yellow
Farmlet area inc wintering	75.0	72.1	75.0	69.2
Peak cow numbers	195	162	194	162
Milking Area	63.4	60.5	63.4	60.5
Herd size (cows)	192	160	193	160
Pasture Stocking rate	3.0	2.6	3.0	2.6
Winter Feed Milking supplement	Kale In-Shed feed		Fodderbeet Fodderbeet/Baleage	
Average Cover	2325	2351	2351	2216
Average Growth	36	40	38	41
Target rotation length	33	32	33	32
Last week act rotation (d)	36	31	33	31
Last week supp (kg DM/cow)	0.9	0.7	1.0	0.5
Average BCS	4.46	4.50	4.47	4.53
% of herd on OAD	6%	7%	13%	7%
Milk yield (L/cow)	17.6	17.5	17.0	16.6
Milk yield (kgMS/cow)	1.82	1.87	1.66	1.66
Nitrogen Cap kgN/ha/yr	193	50	193	50
% Nitrogen used (kgN/ha) YTD	58% (111kg)	68% (34kg)	53% (102kg)	68% (34kg)
Effluent N YTD	5	5	7	7
Profit/ha comp to Control	\$0	-\$210	-\$173	-\$166
YTD supp (kg DM/cow)	391	295	291	275
YTD MS/cow	282	291	267	261
YTD MS/ha	734	654	690	612



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General Farm Information

Table 2: Key Weather and Feeding Numbers 20 January 2022

Soil Temp (°C) (weekly average)	20.0			
Rainfall (mm)	14.2 mm			
Allocation Target kg DM/cow/day	Std. Kale	LI Kale	Std FB	LI FB
Milkers	17.5 kg DM 16 kg pasture 1.5 kg DM PKE:barley blend	17.5 kg DM 17.5 kg pasture	17.5 kg DM 17.5 kg pasture Baleage as required	17.5kg DM 16.5 kg pasture 1 kg DM PKE Baleage as required

Key Decisions

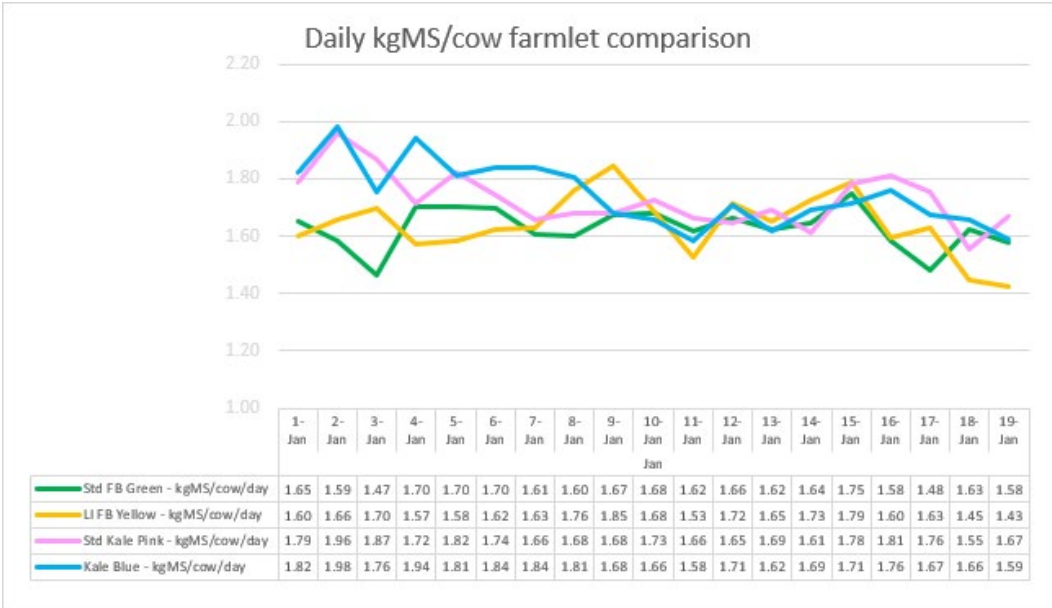
- **Feed:**
 - There is a critical focus on keeping cows in pasture of the correct length and best quality this week with any paddocks above pre-grazed target being earmarked for baleage. Both the LI Kale herd and Std FB herd have paddocks identified for conservation
 - Growth rates have slowed this week, however with the recent rainfall and more in the forecast plus N fertiliser going on the Std farmlets we expect to see that growth will increase again over the next week.
 - The 12-month-old grasses are going through a period of quite uneven growth potentially due to compaction issues. These paddocks are high priority for aeration once conditions allow. In the Std farmlets these paddocks will continue to get N after grazing, however for those in the LI farmlets the decision was made to bring forward their autumn application now to try and improve quality and growth.
 - Topping will continue post grazing in selected paddocks due to the amount of stem and seed head across the farm. This seasons' new grass paddocks will also be topped primarily for weed control.

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Figure 1: LI Kale herd grazing a new grass paddock, this will be mowed for residual control.

- Overall farmlet rotation length will remain at approximately 30 days with 3 feeds in most paddocks, however for new grass paddocks these will only be 2 feed paddocks with a return interval of only 14-20 days to ensure a shorter pre graze target for quality control and to ensure residuals are achieved.
 - Nitrogen will continue for standard herds this week as well as the new grasses to assist tiller development.
- **Milk Production**
 - Milk production has declined again this week despite sufficient feeding levels. We attribute this to a combination of quality of the pasture on offer and heat over the last week. Visible signs of heat stress were observed on several days and breathing data from the collars indicated increased respiration



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Figure 2: Daily milk production kgMS/cow/day for January to date

- The heat and humidity suppress the intake of the cows as they are “too hot to eat”. However, with the cooler nights, the recovery is good and grazing at night compensates for some of the daytime loss.
- Production season to date is still up for both the LI herds with the LI Kale herd performing better on a per ha basis, however total production is down because they have one less paddock in pasture so peak cow number was lower to maintain the 2.6 cow/ha stocking rate.
- The herds remain on twice a day milking (TAD) however we will continue to reassess this weekly based on pasture growth and BCS. In previous seasons all herds have moved to OAD milking in March.
- From the herd tests this week the Std and LI fodder beet herds had a higher average fat% (4.9 vs 4.8), lower protein % (4.0 vs 4.1) and higher SCC (126 000 vs 82 000) than the two kale herds.

General Notes:

- **Wintering:**
 - The FB crops for this coming winter have been sprayed over the last week. Due to the high weed content a heavier rate of chemical was used resulting in ‘burning’ of the outer leaves. It is also worth noting that it is recommended for most sprays that they should not be applied in hot conditions (above 29 C) so the weather may have also contributed to the leaf damage.



Figure 3: Fodderbeet leaves showing damage post spraying

- **Animals:**
 - BCS was completed this week and the Std Kale herd at a herd average level scored higher than the other 3 herds. As listed in table 1, the Std FB herd have twice as many cows on OAD as they have more cows below BCS 4 and the lowest BCS herd average.



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- We have started discussions around culling and identification of animals for reduced milking frequency to achieve pre-calving BCS targets of 5.0 or 5.5 (R3's). As in previous years calving date and BCS information will be used to determine when individual cows move to OAD milking or are dried off.

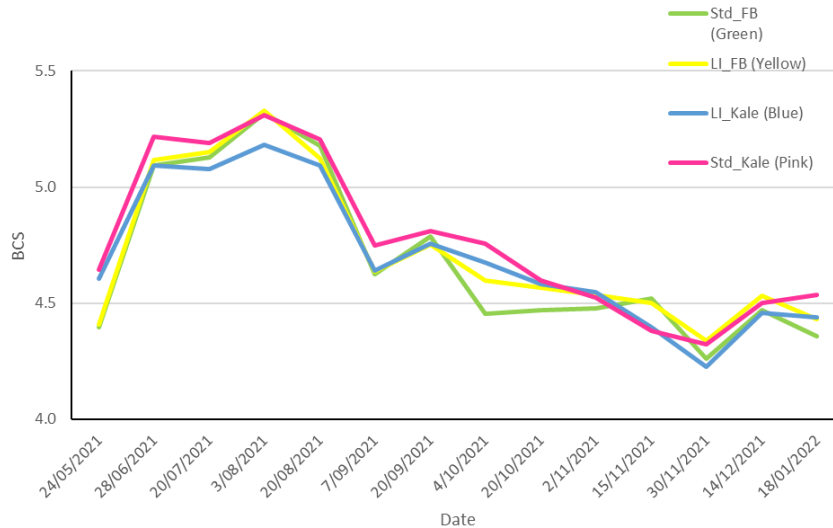


Figure 4: Farmlet average BCS season to date

- The collar data has provided useful insights this week regarding heat stress as indicated by increases in the breathing rate across the herds especially at the afternoon milking. There was a significant difference in breathing rate between the LI Kale herd and the other herds. On further investigation the likely reason for this was the herd grazing a paddock with a hedge providing shade, indicating the importance that shade plays in periods of hot weather.
- A sprinkler system has been used on the yard to provide the cows with water for cooling at the afternoon milking throughout this period of higher temperatures. Discussions are occurring around whether or not to add another one further round the yard to ensure that the water being applied is enough to be running off the cows and therefore effectively cooling them.
- After discussions with the agent, we have developed our planned culling numbers, with another 3 booked to go this month. After scanning is completed next week a list will be formed of potential culls and depending on works space, the bulk of these culls will go in February and March.
- The remaining bulls that were lame last week and could not be trucked have recovered quickly and have all now left the farm.
- There have been no new animal health incidences this week and the lame cow numbers continue to drop with only 5 cows in the lame mob.
- Results have come back from last week's blood tests for selenium and iodine levels. The Se levels are sufficient so the top-up of Se has been removed, however the additional iodine will remain in the system for another 6 weeks.

- **Environment**



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- Effluent application will be prioritised going forward on effluent paddocks that have had less than 15kgN for the season to date. There are a few paddocks that would benefit significantly from the additional moisture and nutrients that the effluent provides.
 - We test our effluent monthly and use this alongside the application rate data from Halo to calculate the kg N applied to each paddock.
 - An effluent summary season to date has been completed, with the data showing that over 7.5 million litres of effluent has been applied this season. The kgN/ha applied in paddocks eligible for effluent application range between 0 and 29.5kgN/ha so far this season.
- **Research**
 - We have received the results back for the faeces samples collected last week.
 - The average DM% for the faeces from the FB herds was 8.9% compared with 10.3% for the kale herds
 - The FB herd faeces had a lower Total N content (0.265 vs 0.283)
 - Faeces from the LI herds had a lower N content (0.268 vs 0.280) and higher DM content (10.2 vs 9.0%) than faeces from cows in the Std herds.

General Farm Systems information

The project farm systems comparison has been designed to better understand crop-based wintering in relation to consequences for environmental impact and profit

- *The four herds are split evenly on age, BW / PW, calving date and breed to ensure the herds are as even as possible.*
- *Each herd allocated a farmlet corresponding to their herd tag colour Green, Blue, Yellow and Pink.*
- *Farmlets have paddocks allocated so each herd has equal walking distance from the shed and the same proportion of each soil type and equal proportions of pastures in the FVI trial (forage value trial – refer web site section on research).*

Research Proposals

The SDH welcome research proposals for any sampling or research on the SDH, these are assessed by the Research Advisory Committee (RAC). Just send your request or ask for information via louise.cook@southerndairyhub.co.nz

For more information check out the DairyNZ link:

<https://www.dairynz.co.nz/about-us/research/research-farms/southern-dairy-hub>