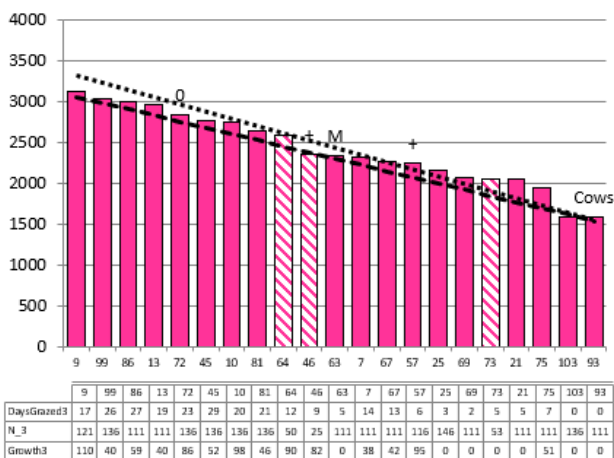




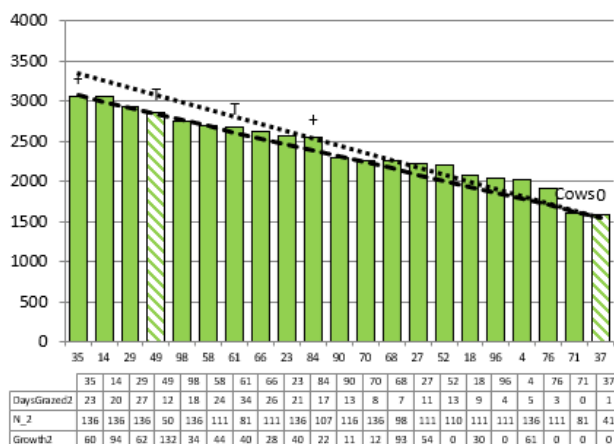
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Standard Kale



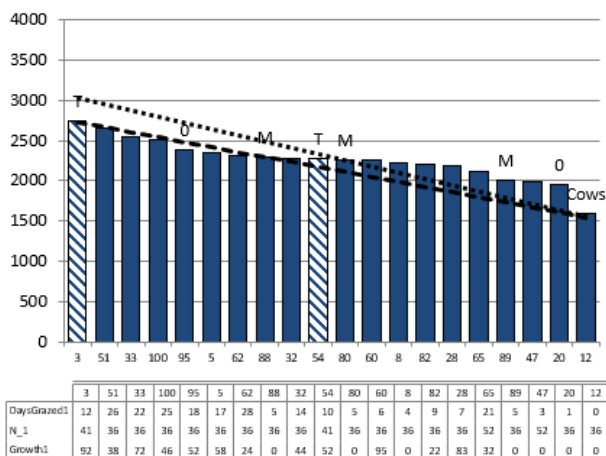
Farmlet notes: Visual APC 2508, GR 57; nice to see lift in pasture cover this week but still growing below demand; targeting 3 kg DM inshed feeding; N to continue behind cows if forecast rain eventuates; commencing proactive BCS management for low BCS, early calving cows to minimise need for winter BCS gain; checking brassica crops for caterpillars after more white butterflies

Standard Fodder Beet



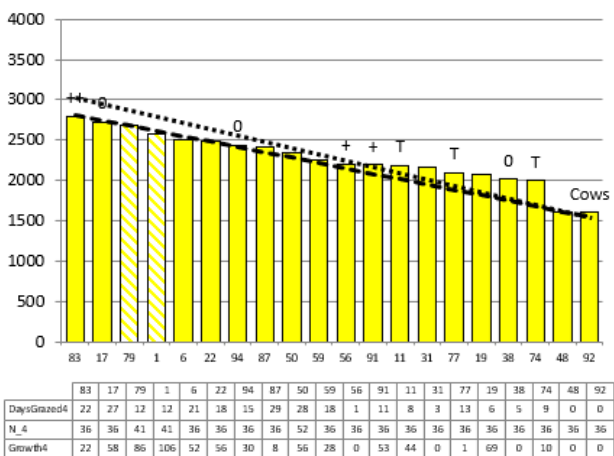
Farmlet notes: Visual APC 2497, GR 48; insufficient supplement offered this week hence production drop; plan for 2 kg PKE inshed plus 1 kg baleage/day for next week & monitor residuals; N to continue behind cows if forecast rain eventuates; commencing proactive BCS management for low BCS, early calving cows to minimise need for winter BCS gain; weed spray for FB

Low Impact Kale



Farmlet notes: Visual APC 2318, GR 53; this herd is the tightest for pasture this week so inshed feeding increased to 4 kg DM/day; increase in proportion of the herd below BCS 4 so more cows onto OAD milking; commencing proactive BCS management for low BCS, early calving cows to minimise need for winter BCS gain; pest management for caterpillars in brassica crops

Low Impact Fodder Beet



Farmlet notes: Visual APC 2388, GR 43; offering PKE at 1.6 kg DM/cow/day plus 1 kg DM baleage; commencing proactive BCS management for low BCS, early calving cows to minimise need for winter BCS gain; structuring grazing plan to ensure pdks grazed within 30 days of previous grazing to get cows into better quality feed; maintaining current rotation; N fert onto new grass

NB hatched bars are our 2021 new grass paddocks which we need to keep on top of grazing



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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	2430	2260	2389	2269
Average Growth	66	55	51	45
Target rotation length	32	31	32	31
Last week act rotation (d)	32	31	32	30
Last week supp (kg DM/cow)	1.9	2.5	2.8	2.5
Average BCS	4.44	4.53	4.36	4.43
% of herd on OAD	5%	11%	13%	4%
Milk yield (L/cow)	17.4	16.7	15.5	16.5
Milk yield (kgMS/cow)	1.79	1.77	1.58	1.68
Nitrogen Cap kgN/ha/yr	193	50	193	50
% Nitrogen used (kgN/ha) YTD	59% (113kg)	74% (37kg)	57% (110kg)	72% (36kg)
Effluent N YTD	5	8	11	9
Profit/ha comp to Control	\$0	-\$210	-\$173	-\$166
YTD supp (kg DM/cow)	420	320	323	307
YTD MS/cow	285	290	268	273
YTD MS/ha	876	776	819	731



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General Farm Information

Table 2: Key Weather and Feeding Numbers 3 February 2022

Soil Temp (°C) (weekly average)	19.2			
Rainfall (mm)	10.4			
Allocation Target kg DM/cow/day	Std. Kale	LI Kale	Std FB	LI FB
Milkers	18 kg DM 15 kg pasture 3 kg DM PKE:barley blend	18 kg DM 14 kg pasture 4 kg DM PKE:barley blend	18 kg DM 15 kg pasture 2 kg DM PKE 1 kg DM baleage	18 kg DM 15 kg pasture 1.5 kg DM PKE 1.5kg Baleage as required

Key Decisions

Feed:

- With 25 mm rain in the last 2 weeks, less wind and some N on our standard paddock, we have growth again this week! While still below demand for a full pasture diet in both the low and standard farmlets, growth is allowing us to offer approximately 15 kg DM as pasture.
- Covers across all farmlets have lifted over the past week, however milk production continues to be a challenge.
- Pasture samples taken last week came back with crude protein (CP) levels between 12% and 16%, except for the new grass paddocks which were >25%. These low crude protein contents will be one reason behind the milk production challenges we are experiencing as they are below recommended levels of >18%
- This time last year the average crude protein across the farm was 18.6%
- The ME for older pastures also dropped to an average of 11 MJ ME/kg DM, with the new grasses around 12 MJ/kg DM.
- Kale farmlet paddocks tested slightly higher for CP and energy than the FB farmlet paddocks while the Std pastures had higher levels than the LI pastures
- Interestingly, we are seeing aftermath seed head emergence in the ryegrass in several paddocks which is unusual for this time of year in Southland.
- A farm wide decision has been made to avoid grazing paddocks longer than 30 days post grazing, in a bid to ensure that the cows are going into paddocks of better quality. This will require careful consideration of paddock order in the grazing plans for each farmlet to ensure slow growing paddocks are pulled up the grazing order and longer paddocks above them on the wedge dropped for conservation.
- Supplement will be going into all herds this week with a minimum of 3kgs DM for all herds and the LI Kale herd getting 4kgs DM.



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- If long graze paddocks are stepped over supplement will be increased to fill any short term deficits.
- Round length, based on area allocation, is to remain at 30 days for all farmlets. This means we can allocate up to two paddocks per farmlet each week for 2 grazing's rather than 3. To facilitate this, we have a list of paddocks that struggle to reach the necessary pre-graze targets within 30 days. Grazing these paddocks at a lower pre-graze cover will hopefully result in less paddock-to-paddock variation in milk yield due to quality differences.
- Nitrogen applications will only be applied this week on the standard farmlets if there is a change in weather forecast and more rain eventuates.
- There is a lot of willow weed in many of the new grass and crop paddocks. Once the new grass has been grazed, the mower will be used as a control method for this weed. Spraying may be required in the crop paddocks. As an annual weed it should not continue to persist once we get it under control.

Milk Production:

- Production has been very variable this week across all 4 farmlets, however given the range in CP levels from samples collected last week, especially in those paddocks with longer return times, we are confident the poor production is quality rather than quantity driven.

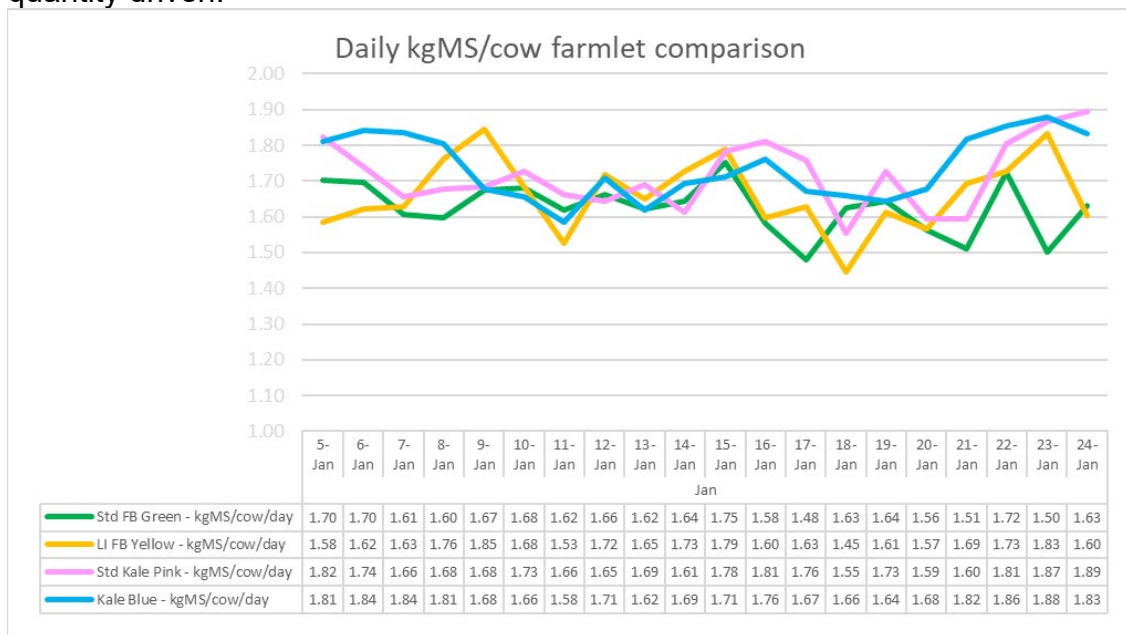


Figure 1: Daily kgMS/ cow comparison

- Overall, the protein to fat ratio has decreased, however with a slightly lower protein (4.1 vs 4.0) and higher fat (4.9 vs 4.8) in the fodder beet herds their ratio is lower. With dietary energy and protein driving milk yield this will be a contributing factor to the drop in volume over the last week.
- When looking at both litres and milk solids the Std FB herd continues to be the lowest performers. In the last week they grazed more long grazing interval paddocks



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paddocks and for a couple of paddocks total DMI was lower. Interestingly the FB herds are less likely to complain if they are tight in their paddocks, potentially another impact of the low crude protein diet as protein is important for appetite.

- When looking at farm kgMS/ day compared to this time last year in Figure 2, daily production is behind last season and has dropped away earlier in the season this year.

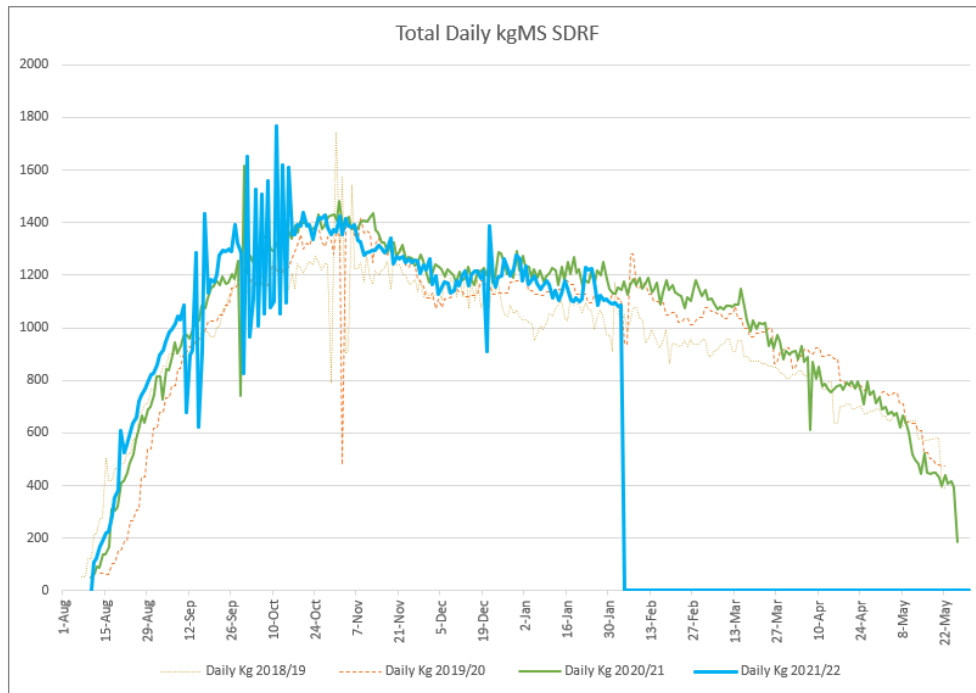


Figure 2: Yearly comparison of total daily kgMS

General Notes:

Animals:

- From this week onwards BCS monitoring will be used to identify animals that need more time to gain BCS before calving i.e. light conditioned, young, early calving animals. A list has been created of cows who need to gain more than 0.75 of a BCS unit and heifers that need to gain more than 0.6 of a BCS unit for first calvers before 25th May. So far there are 58 animals on this list as well as an additional 52 cows that are currently under 4.0 BCS. Effective immediately all cows on these lists will be on OAD milking and priority inshed feeding as we prioritise condition heading towards the end of the season.
- The LI Kale herd had the biggest swing in BCS in the last 2 weeks so more of their herd have gone onto OAD milking.

Animal health:

- Two cows were tested for Johnes this week, but both have returned negative results. From these animal's collar data, there was nothing out of the ordinary detected but both had dropped significantly in milk production and BCS.

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Environment:

- As mentioned above, N fertilizer will only go on behind the cows in the standard farmlets this week if we get more rain to maximise the response and minimise the potential volatilisation losses.
- N fertilizer was applied to the last of the crop paddocks via helicopter. The application rate across the crops was 150kg/ha urea on the brassicas and 110kg/ha urea on the fodderbeet crops.
- Several paddocks are being prioritised this week for effluent applications as they have not received any this year and did not receive any maintenance potassium fertiliser in the annual application as the expectation was they would get this from the effluent.
- Effluent continues to be applied to those paddocks in the application area, however the pond is only 29% full. Currently green wash is still being used on the yard but if the pond gets too low we may have to start hosing. Interestingly last year when the switch was made to hosing rather than green wash, the N content in the effluent halved due to the dilution from the fresh water.
- Riparian planting is being continued this week along the Makarewa tributary that runs through the farm. The northern and then western side of the waterway will be planted out to provide shade and promote increased stream health and biodiversity.

Research:

- Nicole and Tash are well into the botanical composition analysis of all paddocks on the farmlet just prior to grazing. An observation from this morning was the presence of clover root weevil and clover flea damage on the clover leaves.



Figure 3: Damage to clover leaves from insect pests

- On a positive note the team have observed fewer slugs when they have been doing calibration cuts in the last couple of weeks.



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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>