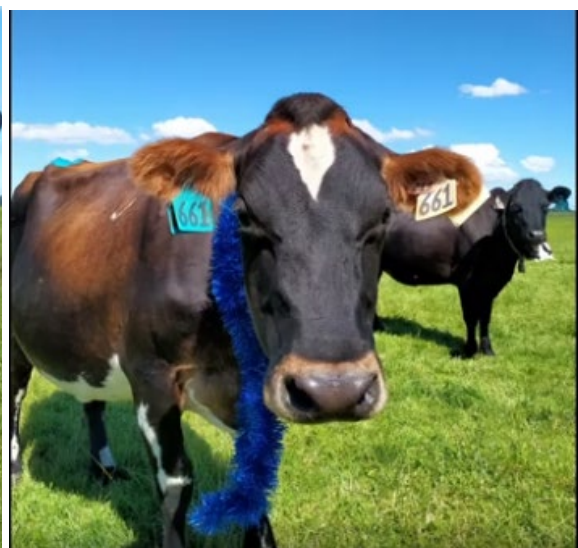




2021/22 Season
Hub Weekly Farm Update
Date: 23/12/2021

The Southern Dairy Hub would like to wish everyone a **Merry Christmas and Happy New Year!**

It has been another challenging year on many fronts across the region and nationally. We are looking forward to what 2022 brings and all the exciting things we plan to achieve!





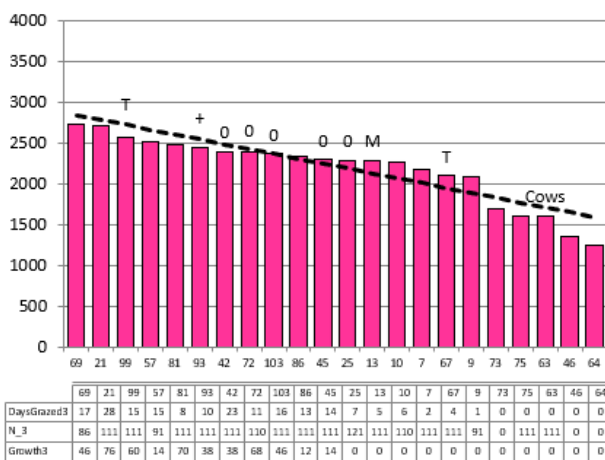
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Date 22-12-21

| | | | |
|-----------------------------------|------|------------------------|------|
| Herd size (cows) | 192 | Average Cover | 2194 |
| Target residual (kg DM/ha) | 1600 | Average Growth | 44 |
| Target pasture intake (kg DM/cow) | 15 | Farmlet area | 62.8 |
| Target Area offered (ha/day) | 2.30 | Target rotation length | 27 |
| Last week actual rotation (d) | 26 | Target demand | 46 |
| Last week supp (kg DM/cow) | 0.6 | YTD supp (kg DM/cow) | 316 |
| Last week N (kg N/ha) | 7 | Fert N YTD | 97 |
| Milk yield (L/cow) | 19.5 | Effluent N YTD | 3 |
| Fat% | N | Last wk MS | W |
| Prot% | E | YTD MS/cow | E |
| SCC | X | YTD MS/ha | E |
| Average BCS | T | % less than BCS 4 | K |

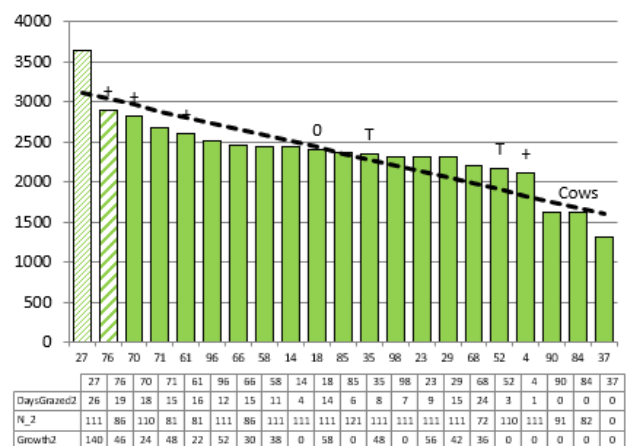
| | | | |
|-----------------------------------|------|------------------------|------|
| Herd size (cows) | 193 | Average Cover | 2359 |
| Target residual (kg DM/ha) | 1600 | Average Growth | 49 |
| Target pasture intake (kg DM/cow) | 18 | Farmlet area | 60.6 |
| Target Area offered (ha/day) | 2.3 | Target rotation length | 26 |
| Last week actual rotation (d) | 27 | Target demand | 57 |
| Last week supp (kg DM/cow) | 0.2 | YTD supp (kg DM/cow) | 255 |
| Last week N (kg N/ha) | 3 | Fert N YTD | 92 |
| Milk yield (L/cow) | 18.5 | Effluent N YTD | 5 |
| Fat% | N | Last wk MS | W |
| Prot% | E | YTD MS/cow | E |
| SCC | X | YTD MS/ha | E |
| Average BCS | T | % less than BCS 4 | K |

Standard Kale



Farmlet notes: Visual APC 2091, GR 47; with growth still below demand APC has dropped; to hold current rotation 3 kg barley:PKE blend to be offered at milking; Total DMI target of 18; looking to extend rotation to 30 days as pasture cover allows & now that 3 new grass pdks are back in the rotation; new grass pdks plus winter italians to have nip off grazing next week;

Standard Fodder Beet



Farmlet notes: Visual APC 2248, GR 54; with growth still below demand APC has dropped; pdk 27 will be pre-graze mown and return to the rotation; pdk 76 still earmarked for baleage due to quality; Total DMI target of 18; looking to extend rotation to 30 days as pasture cover allows; only x1 new grass pdk back in; new grass pdk plus winter italians to have nip off grazing next week;

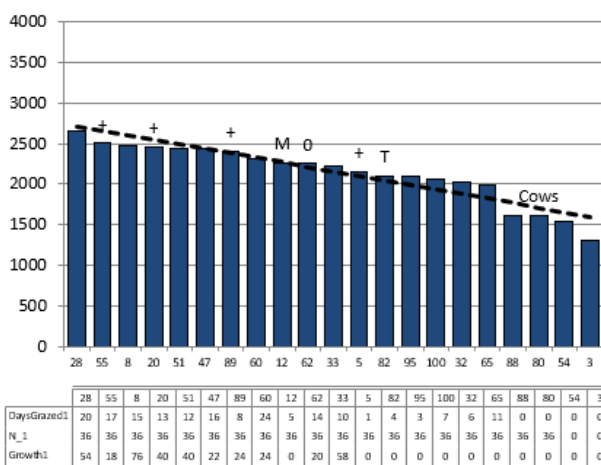


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| | | | |
|-----------------------------------|------|------------------------|------|
| Herd size (cows) | 160 | Average Cover | 2141 |
| Target residual (kg DM/ha) | 1600 | Average Growth | 38 |
| Target pasture intake (kg DM/cow) | 16 | Farmlet area | 61.1 |
| Target Area offered (ha/day) | 2.3 | Target rotation length | 27 |
| Last week rotation avg | 25 | Target demand | 42 |
| Last week supp (kg DM/cow) | 0.8 | YTD supp (kg DM/cow) | 236 |
| Last week N (kg N/ha) | 1 | Fert N YTD | 31 |
| Milk yield | 19.1 | Effluent N YTD | 5 |
| Fat% | N | Last wk MS | W |
| Prot% | E | YTD MS/cow | E |
| SCC | X | YTD MS/ha | E |
| Average BCS | T | % less than BCS 4 | K |

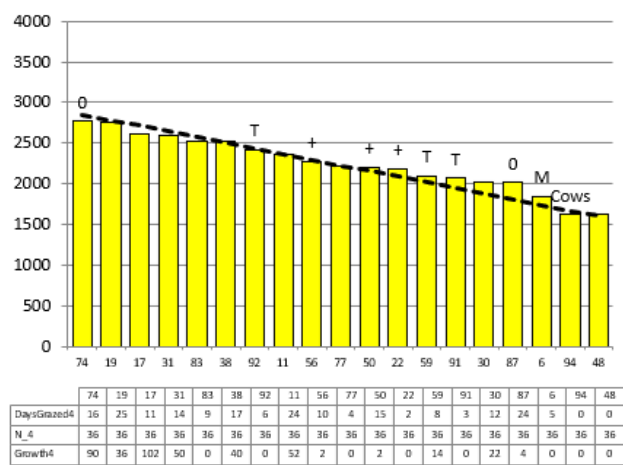
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|-----------------------------------|------|------------------------|------|
| Herd size (cows) | 160 | Average Cover | 2249 |
| Target residual (kg DM/ha) | 1600 | Average Growth | 38 |
| Target pasture intake (kg DM/cow) | 18 | Farmlet area | 55.1 |
| Target Area offered (ha/day) | 2.3 | Target rotation length | 24 |
| Last week rotation avg | 24 | Target demand | 52 |
| Last week supp (kg DM/cow) | 0.2 | YTD supp (kg DM/cow) | 228 |
| Last week N (kg N/ha) | 1 | Fert N YTD | 31 |
| Milk yield | 17.5 | Effluent N YTD | 7 |
| Fat% | N | Last wk MS | W |
| Prot% | E | YTD MS/cow | E |
| SCC | X | YTD MS/ha | E |
| Average BCS | T | % less than BCS 4 | K |

Low Impact Kale



Farmlet notes: Visual APC 2071, GR 52; with growth still below demand APC has dropped; to hold current rotation 2 kg barley:PKE blend to be offered at milking; Total DMI target of 18; looking to extend rotation to 30 days as pasture cover allows & now that 2 new grass pdks are back in the rotation; new grass pdks plus winter italians to have nip off grazing next week;

Low Impact Fodder Beet



Farmlet notes: Visual APC 2150, GR 40; with growth still below demand APC has dropped; Currently enough pasture for 18 kg DMI target but baleage may be required in some pdks that are not at pre-graze target; looking to extend rotation to 30 days as pasture cover allows; no new grass pdks back in rotation on this farmlet; winter italians to have nip off grazing next week;

NB: shaded paddocks are earmarked for pre-graze mowing or conservation

Table 1: Key Herd Numbers 23/12/2021 – number of cows in each mob

| DATE: 23 rd Dec 2021 | Std Kale | LI Kale | Std FB | LI FB | Total |
|---------------------------------|----------|---------|--------|-------|-------|
| Cows on Farm | 192 | 160 | 193 | 160 | 705 |
| Milkers TAD | 171 | 143 | 172 | 151 | 637 |
| Milkers OAD | 17 | 13 | 20 | 8 | 58 |
| Sick OAD | 4 | 4 | 1 | 1 | 10 |
| Slips/empty/deaths | 9 | 6 | 16 | 6 | 37 |

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General Farm Information

Table 2: Key Weather and Feeding Numbers 23rd December 2021

| | | | | |
|--|---------------------------------------|---------------------------------------|---|--|
| Soil Temp (°C) (weekly average) | 17.8°C | | | |
| Rainfall (mm) | 21.2mm | | | |
| Allocation Target kg DM/cow/day | Std. Kale | LI Kale | Std FB | LI FB |
| Milkers | 18 kg DM 15 kg pasture 3 kg PKE | 18 kg DM 18 kg pasture 2 kg PKE | 18 kg DM 18 kg pasture Baleage (only if required) | 18kg DM 18 kg pasture Baleage (only if required) |

Key Decisions and Why?

- As we head into the summer and with different nitrogen and supplements available the feeding strategies across all 4 farmlets are starting to diverge, especially as the FB farmlets don't have the ability to offer feed through the shed like the kale farmlets do.
- We will start to push the round length out to 30 days which will mean that majority of the paddocks will require pre-graze covers for 3 feeds (36 hours grazing).
- Feed quality appears to be on the improve over the last week. The farm and tech teams are starting to notice a lot more leaf and less seedhead present in the sward.
- The clover is really starting to flourish in all four farmlets. Clover has a higher temperature for optimum growth so with soil temperatures between 17 and 18 °C it is growing well.
 - Bloat oil has been going through the inline dispenser for the water troughs for the last 3 weeks as the clover proportions started to increase in the pastures.



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Figure 1: White Clover present in the sward

- As noted above supplement will be going back into both kale herds via in-shed feed and baleage will be used as required for the FB herds.
 - Why: Heading into the Christmas break, the number of staff on farm will be fewer than usual, so the decision was made to be more conservative with our feed planning this week to ease the pressure on those staff who are still working through this time. Adding supplement will also minimise the risk of lower feeding levels impacting on production whilst we wait for the moisture and N fertilizer to start working in the system.
 - The Std Kale herd's average pasture cover has dropped off significantly in the past week so the supplement in their diet will allow us to hold the rotation and give covers the chance to lift again.

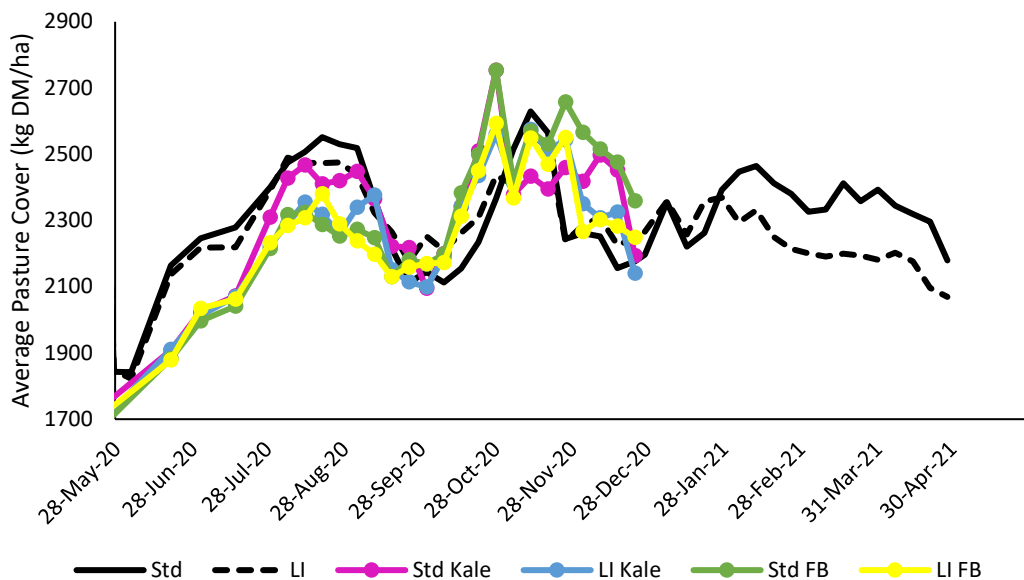


Figure 2: APC season to date for all farmlets

- The Std Kale herd will be offered 3kgDM of Barley/PKE and the LI Kale herd 2kgDM Barley/PKE blend from Thursday afternoon to fill the slight deficit in these herds. This will be monitored closely over the next week to ensure that residuals are still being hit and we do not create substitution through over offering supplement.
 - When looking at the feed wedge for the LI Kale herd, they will likely move away from requiring the supplement faster than the Std Kale herd will, however this will depend on how long it takes the nitrogen to respond in this farmlet.
- Cows in both the Std FB and LI FB herds that currently have a BCS of 3.5 will be offered 2kg of PKE through the shed to protect their BCS from dropping further. On a normal farm these cows would be put on OAD and run as a separate mob with priority feeding but this would add another layer of complexity to an already complicated farm so PKE in the shed is the solution we have landed on.
 - Why PKE and not the blend offered to the kale herds? PKE is the supplement of choice for farms without inshed feeding as it can be safely group fed in paddocks. We have just bypassed the group feeding option but do inflate the



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amount fed by 15% to account for the additional wastage that would occur if it was offered in paddock in trailers.

- Pdk 27 for the Std FB herd will be brought back into the rotation and pre-graze mown.
 - Why: While it is above the required pre-graze target the quality is still OK and with a potential pasture shortfall a bit further down the wedge, grazing this paddock will allow the others a few more days to grow
- N fertilizer was planned to be applied to the standard farmlets over the next week, however with the current drying winds and lower soil moisture, this has been put on hold until the rain comes.
 - Why: To ensure we get the best response, waiting for rain will ensure a better uptake of the N by the plant as they will be growing better. The tech team have also noted some patches of nitrogen burn from the last application so to avoid this again, waiting until after a wet period should protect the pastures from this and ensure we get a good response from our \$\$ investment.
- Several new grass paddocks are close to their first nip off grazing but not for all farmlets due to the staggering of replanting based on soil conditions. The pull test will be used to identify those that are ready for grazing and they have been included in the grazing plan for next week.

General Notes:

- Several of the Italian paddocks are ready to have their first light grazing. As these paddocks are not technically part of the farmlets now (they would have been in winter crop in previous seasons) the DM that is consumed when they are grazed will be treated as supplementary feed for data management purposes. While not all farmlets have Italian paddocks we will ensure all herds have at least one grazing from these paddocks in the next week.
- With the differences in stocking rate, paddocks available and average pasture cover we are now offering different amounts of pasture across the farmlets. This results in each herd having a different pre-graze target to achieve our 25 day rotation. Added to this is the complication of grazing some paddocks for 24 hours and others for 36 hours. To help with feeding decisions the weekly grazing plan includes the pre-graze target for each paddock for each farmlet (Table 3; Figure 3).

Table 3: Current pasture DM allocation and pre-graze target to achieve a 25 day rotation with a mix of 2 and 3 feeds per paddock

| | Pasture DM allocation | 2 feeds/pdk (24 hours) | 3 feeds/pdk (36 hours) |
|----------|-----------------------|------------------------|------------------------|
| Std Kale | 15 | 2550 | 3050 |
| LI Kale | 16 | 2450 | 2880 |
| Std FB | 18 | 2750 | 3350 |
| LI FB | 18 | 2550 | 3050 |



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| 23-Dec | Pink | | Blue | | Green | | Yellow | | Sicks |
|------------------|---|------|--|------|---------------------|---------|---------------------|----------|-------|
| No. in herd | 189 | | 158 | | 190 | | 160 | | 11 |
| 3/2 feed target | 3050 | 2550 | 2880 | 2450 | 3350 | 2750 | 3040 | 2550 | |
| | am | pm | am | pm | am | pm | am | pm | |
| 23-Dec Thu | 75 | 75 | | 55 | 90 | 90 | 48 | 11 | 53 |
| Pre-graze target | | | | 2450 | | | | 2550 | |
| Baleage | | | | | | | | | |
| 24-Dec Fri | 42 | 42 | 55 | 2 | 27 | 27 | 11 | 97 (40%) | 53 |
| Pre-graze target | 2550 | | 1/2 by pdk 1 | | 3350 | | | | |
| Baleage | | | | | Pre mow | Pre mow | | | |
| 25-Dec Sat | 97 (60%) | 57 | 28 | 28 | 2 | 27 | 38 | 38 | 53 |
| Pre-graze target | | 2550 | 2880 | | 1/2 by pdk 5 | | 2550 | | |
| Baleage | | | | | | Pre mow | | | |
| 26-Dec Sun | 57 | 21 | 28 | 60 | 18 | 18 | 19 | 19 | 53 |
| Pre-graze target | | 3050 | | 2450 | 2750 | | 3040 | | |
| Baleage | | | | | | | | | |
| 27-Dec Mon | 21 | 21 | 60 | 47 | 70 | 70 | 19 | 56 | 53 |
| Pre-graze target | | | | 2880 | 3350 | | | 2550 | |
| Baleage | | | | | | 1 bale | | | |
| 28-Dec Tue | 73? | 69 | 54 | 47 | 70 | 68 | 56 | 34? | 53 |
| Pre-graze target | | 3050 | nipoff | | | | | | |
| Baleage | | | | | 1 bale ? | | Top plse | | |
| 29-Dec Wed | 69 | 69 | 47 | 8 | 37 | 71/61 | 74 | 74 | 53 |
| Pre-graze target | | | | 2880 | nip off | 3350 | 3050 | | |
| Inshed feed | | | 1 bale ? | | | | | | |
| 30-Dec Thu | 103 | 103 | 8 | 8 | 71/61 | 71/61 | 74 | 17 | 53 |
| Pre-graze target | 3050 | | | | | | | 3050 | |
| Baleage | | | | | | | | | |
| 31-Dec Fri | 102 | | 20/62 | | | | 17 | 17 | 53 |
| Pre-graze target | | | | | | | | | |
| Baleage | | | | | | | | | |
| Supplements | 3 kg as feed inshed Adjust as required | | 2 kg as fed inshed Adjust as required | | Baleage as required | | Baleage as required | | |
| Conservation | | | | | 76 | | | | |

Figure 3: Weekly grazing plan for each herd

- From the Allflex collar data, it has recorded an additional 18 cows that have been mated by the bull, taking the total to 51 cows. An interesting point to note was after the first day of pre mowing, many cows were alerting with higher activity and lower rumination which the collar software identified as a heat. However, upon further investigation the activity increase was not as high as it would be if a cow was truly on heat.
- Tail paint will be reapplied on Friday morning, as it is every week and the cow numbers recorded.
- After sending one of the non-cyclers away as a cull cow, the remaining 2 cows that had not cycled were given a CIDR on Wednesday and will have it removed and then given a GnRH shot next week giving them one opportunity to conceive before the bulls are removed.
- 23 cows were put back onto TAD milking because of an increase in BCS last week.
- The farm team all participated in a tractor health and safety course on Wednesday to ensure everyone has the same level of understanding and provided the more experienced team members with a refresher of the key things to remember when operating the tractors.



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- Milk production continues to fluctuate around 1.6 to 1.8 MS/cow/day. With an improvement in pasture quality we just need better growth to keep milk production on track without lots of supplementary feed.

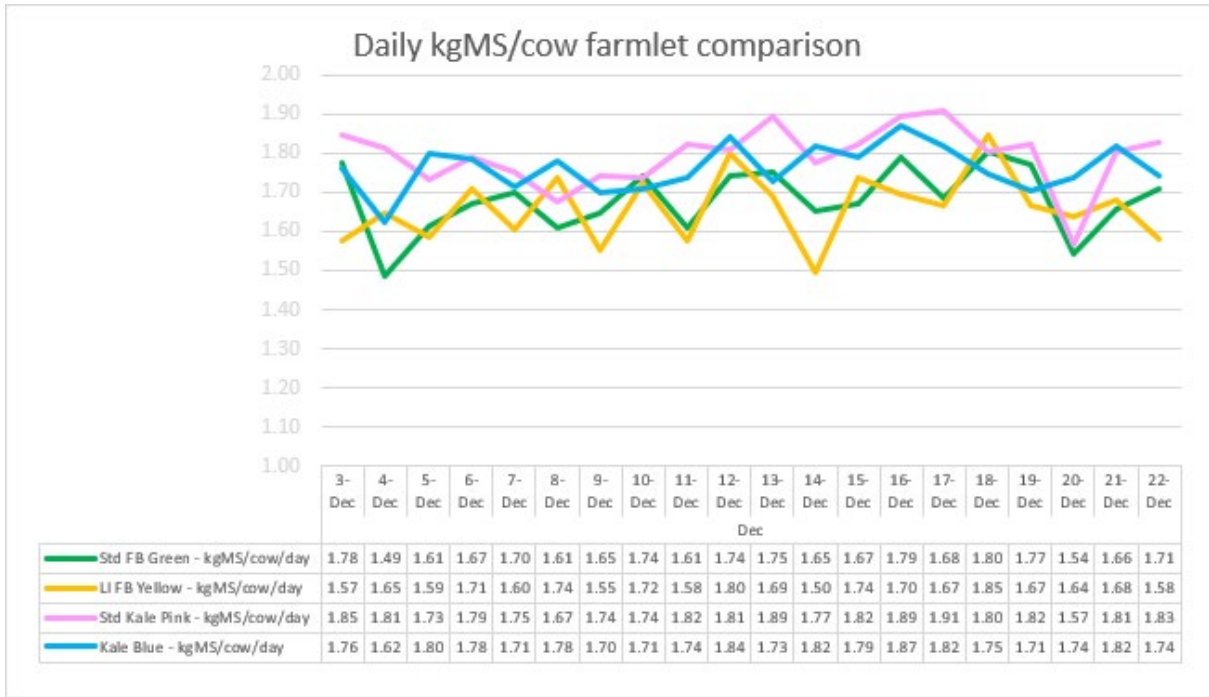


Figure 4: Daily milk solids per cow comparison between farmlets

- There was a slight reduction in production earlier in the week due to a OAD milking on Monday to prioritise a team Christmas day out to acknowledge the achievements over the last year before people start taking time off over the festive period.
- The pre mowing in both Kale herds and the LI FB on the 16th & 17th Dec did impact on production but this was not unexpected due to the maturity of the pastures that were being grazed.
- Both the LI herds are still ahead in production season to date however the Std FB is 20 kgMS/ha less and the Std Kale has slipped a bit and are now even with last seasons production.

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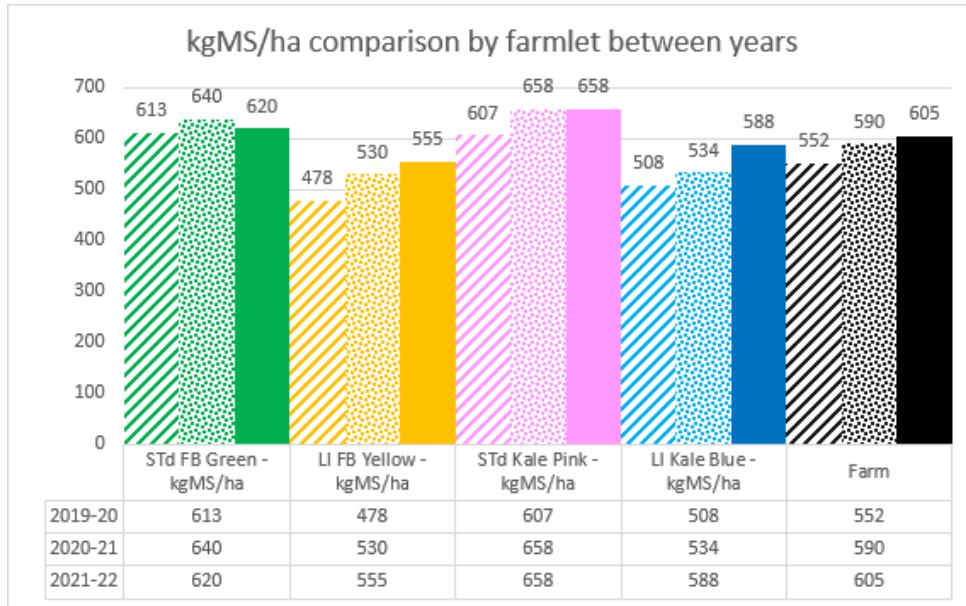


Figure 5: Season to date milk solids production comparison between farmlets and years

- **Young Stock**

- The remaining 12 calves were weaned from milk this week, and all weighed at the same time.
- With the pasture growth throughout the week, this has removed the need for baleage in the diet for the calves, however they are still getting PKE in the paddock.
- The R2's had the bulls taken out this week and received their next dose of minerals in the form of selenium, copper and a B12 injection.

- **Animal health**

- With the amount of clover present, bloat oil has now been added into the inline dispenser.
- 2 new cases of mastitis this week.
- One of the 8 lame cows has now been in this herd for over a month and is not responding to any of the treatments to date. She has been checked over by the vet numerous times and nothing strange has been detected so she will be reassessed in the New Year.

SDH Research & Demonstration

- The feed quality results from samples collected earlier in December are now available and there were a few differences noted between the farmlets
 - The Std pastures were on average lower in dry matter, lignin and neutral detergent fibre (NDF) indicating potentially less stem/seed head and more leaf.
 - The Std pastures were on average higher in crude protein, energy, phosphorus (P) and sulphur (S). Crude protein differences will be driven by the different N fertiliser regimes. We were not expecting differences in P & S as the maintenance fertiliser applications are calculated to achieve similar



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Olsen P levels across the farmlets and a special ammo blend is used for the LI farmlets in spring to balance the S applications

- The fodder beet farmlet pastures were higher in potassium (K) but lower in Ca. This may be a random result but was not linked to whether the paddocks were in the effluent area or not.

Table 4: Pasture and supplement quality results from earlier in December

| | DM (%) | Crude protein (%) | Lignin (%) | NDF (%) | ME (MJ/kg DM) | P (%) | K (%) | Ca (%) | S (%) | Mg (%) |
|-----------|--------|-------------------|------------|---------|---------------|-------|-------|--------|-------|--------|
| Std Kale | 18.2 | 17.8 | 5.8 | 44.0 | 11.3 | 0.39 | 2.5 | 0.70 | 0.37 | 0.22 |
| LI Kale | 19.5 | 16.5 | 6.1 | 46.3 | 11.1 | 0.37 | 2.7 | 0.62 | 0.35 | 0.19 |
| Std FB | 17.6 | 17.8 | 5.5 | 43.4 | 11.4 | 0.40 | 3.0 | 0.56 | 0.38 | 0.19 |
| LI FB | 19.4 | 15.1 | 5.8 | 45.4 | 11.1 | 0.36 | 3.0 | 0.55 | 0.34 | 0.17 |
| PKE | 90.3 | 18.0 | | 70.6 | 11.0 | 0.67 | 0.7 | 0.55 | 0.22 | 0.32 |
| Blend | 88.0 | 14.1 | 4.4 | 27 | 10.5 | 0.49 | 0.6 | 0.19 | 0.17 | 0.20 |
| FB Lifted | 19.2 | 8.3 | 2.0 | 12.9 | 12.6 | 0.08 | 0.8 | 0.18 | 0.05 | 0.17 |

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>