

Weekly Farm Summary

Farm-system impacts of: Kale vs Fodder beet for winter AND Reducing N loss to water by 30%.

| KPI | Std Kale Pink | LI Kale Blue | Std FB Green | LI FB Yellow |
|-----------------------------------|--|--------------|------------------------------------|--------------|
| Farmlet area including 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 |
| Current Herd size (cows) | 170 | 138 | 164 | 141 |
| Pasture Stocking rate | 2.7 | 2.3 | 2.6 | 2.3 |
| Winter Feed Milking supplement | Kale In-Shed feed | | Fodder beet Fodder beet/Baleage | |
| Average Cover | 2198 | 2217 | 2278 | 2165 |
| Average Growth | 29 | 32 | 32 | 30 |
| Target rotation length | 41 | 40 | 42 | 40 |
| Last week act rotation (d) | 35 | 33 | 32 | 36 |
| Last week supp (kg DM/cow) | 4.6 | 4.2 | 3.6 | 3.6 |
| Average BCS | 4.5 | 4.4 | 4.3 | 4.5 |
| % of herd on OAD/Priority feeding | 17% | 17% | 19% | 9% |
| Milk yield (L/cow) | 14.6 | 13.9 | 13.4 | 13.5 |
| Milk yield (kgMS/cow) | 1.62 | 1.54 | 1.48 | 1.52 |
| Nitrogen Cap kgN/ha/yr | 193 | 50 | 193 | 50 |
| % Nitrogen used (kgN/ha) YTD | 73% (141kg) | 76% (38kg) | 68% (132kg) | 78% (39kg) |
| Effluent N YTD | 7 | 11 | 18 | 18 |
| Profit/ha comp to Control | \$0 | -\$210 | -\$173 | -\$166 |
| YTD supp (kg DM/cow) | 546 | 438 | 435 | 397 |
| YTD MS/cow | 336 | 339 | 315 | 321 |
| YTD MS/ha | 1,032 | 907 | 963 | 859 |
| Business Area | Current Status | | | |
| Feed | Growth rate still well below demand for 17 kg/cow DMI; targeting a rotation length of 40 days by reducing milking frequency; fresh pasture offered after every milking and each paddock is grazed for 48 hours. | | | |
| Milk Production | Milk yield has increased slightly this week with the switch to 3-2 milking & change in feeding regime. Feed allocation and the quality of feed in the diet will be monitored closely as the cows settle into the new milking routine. | | | |
| People | Team had adjusted well to the 3-2 milking regime. RAT tests available for all staff as a precaution for Covid-19 on farm; business registered as an essential service | | | |
| Animals | No new mastitis or lameness this week. More culls have left, relieving some feed pressure. | | | |
| Environment | No nitrogen fertiliser as conditions too dry; planning being completed to ensure low impact farmlets get their full allocation before 10 th April. Effluent applications have been resumed as the pond levels have lifted with yard wash water. | | | |
| Wintering | Patches of the fodder beet are yellowing so will be checked by our technical field rep and sprayed if required. Paddocks earmarked for autumn grazing will not be sprayed due to withholding periods on chemicals. | | | |
| Research | Assessment of the clover content of all the paddocks has been completed. Still more clover in the LI farmlet paddocks but overall proportions are less this season | | | |

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AND Reducing N loss to water by 30%.**

Feed

Principles of Pasture Management this week

| | |
|-------------------------------|--|
| Pasture Quality | <p>Quality is again being challenged this week with the dry spell, with prominent dry patches being seen particularly on the bottom terrace of the farm.</p> <p>Lucerne baleage is being fed across all farmlets as a way of increasing the protein content in the diet.</p> <p>There are paddocks across all farmlets that are now looking nitrogen hungry.</p> |
| Growth Rate Management | <p>Extending the rotation to 40 days by splitting each paddock into thirds, with cows getting a new break of pasture plus baleage after every milking; maintaining same supplementary feeding strategy</p> <p>Calibration cuts suggest there is more DM in the pastures than initially thought however there is still a significant amount of dead material in the base on many paddocks so available DM will be less.</p> |
| Nitrogen Strategy | <p>N applications remain on hold. A strategy is being worked on to ensure that the LI farmlets get their total allocation before the 10th of April and the Std farmlets get as close to their allocation as possible.</p> |

| | Standard Kale Pink | Low Impact Kale Blue | Standard Fodder beet Green | Low Impact Fodder beet Yellow |
|---------------------------|---|--|---|---|
| Quantity | Growth only 63% of demand | Growth only 82% of demand | Growth only 73% of demand | Growth 82% of demand |
| Quality | Very dry pastures, samples taken this week | Very dry pastures, samples taken this week | Very dry pastures, samples taken this week | Very dry pastures, samples taken this week |
| Surplus Management | None | None | None | None |
| Deficit Management | 3.3kg inshed (down 0.2 from last week) 1.3 kg DM baleage | 2.9 kg inshed (down 0.1 from last week) 1.3 kg DM baleage | 2.0 kg inshed (down 0.6 from last week) Baleage 1.6 kg/cow/day | 1.7 kg inshed (down 1.3 from last week) Baleage 1.9 kg/cow/day |
| Rotation Length | Aiming for 40 days | Aiming for 40 days | Aiming for 40 days | Aiming for 40 days |

Milk Production

Principles of Milk production management this week

| | |
|--|--|
| Milk Production | <p>Milk production has varied over the last 4 days as the cows adjust to the 3n2 milking regime.</p> <p>Only the LI Kale herd is ahead of last season, with the Std FB herd the furthest behind.</p> <p>Milk as many cows to the end of season but not at the expense of BCS gain; cows will be dried off early if required</p> |
| Key influences on milk production | <p>Still adapting to the change in milking frequency at the beginning of the week</p> <p>Proportion of the supplementary feed as silage: On average the gap between fodder beet and kale herds continues to reduce, but the fodder beet herds have not responded as well to the move to 3n2. FB herds receive a higher proportion of their supplement as baleage (44-53%) compared with 28-31% for the kale herds & the PKE is lower digestibility than the 50:50 barley:PKE blend for the kales</p> |
| Cow Management | <p>Cow Management Rules:</p> <ol style="list-style-type: none"> 1: Cows previously on OAD have been put back onto 3-2 regime 2: Priority management cows (early calvers and low BCS) continue to be preferentially fed in shed 3: The first group of high risk low BCS cows have been identified and these animals will be dried off at the end of March if significant BCS improvements aren't made. |

| | Standard Kale Pink | Low Impact Kale Blue | Standard Fodder beet Green | Low Impact Fodder beet Yellow |
|---|--|--|-----------------------------------|--|
| kg Milksolids per cow this week / (last week) | 1.62/(1.56) | 1.54/(1.47) | 1.48/(1.48) | 1.52/(1.46) |
| kg Milksolids per ha this year / (this time last year) | 1032/(1063) | 907/(861) | 963/(1014) | 859/(833) |
| Season to date compared to last year | Down 3.0% total milk Half paddock extra in grass this year affects KPI. | up 5.3% total milk One paddock less in grass this year affects KPI. | Down 5.1% total milk | Up 3.1% total milk One paddock less in grass this year affects KPI. |
| Cows needing preferential feeding (% herd) | 29 cows (17%) | 23 cows (17%) | 31 cows (19%) | 12 cows (9%) |
| Animal health peculiarities | None | None | None | None |

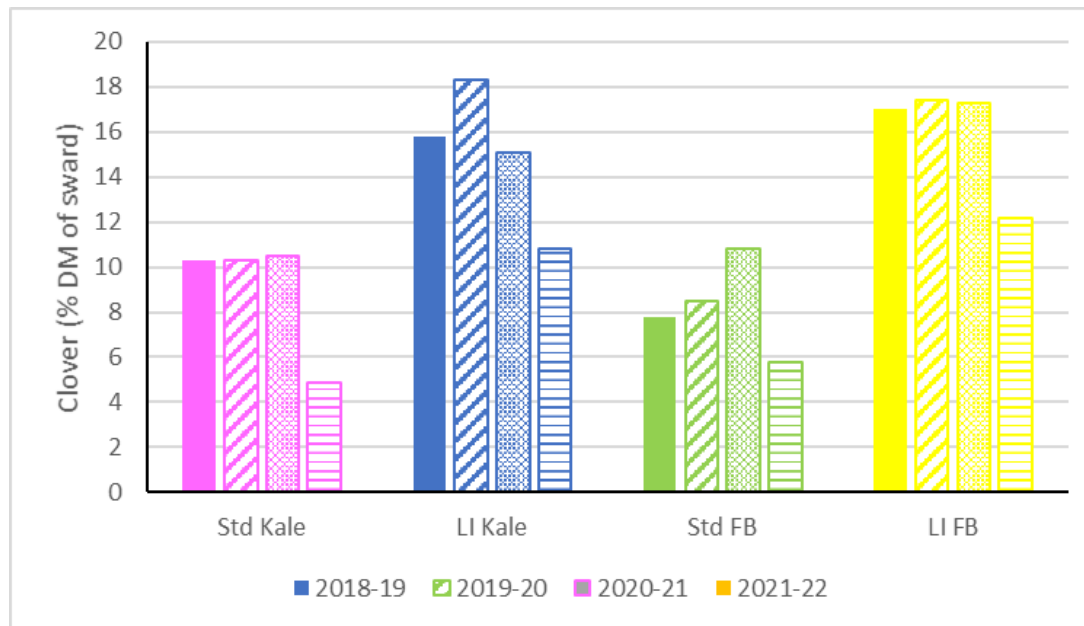
Research

Impact of nitrogen fertiliser, stocking rate and season on pasture composition

Each summer we complete botanical composition analysis on all the pasture paddocks on the farm to assess the impact of farm system on the proportion of clover, as previous research has shown increasing clover content with reduced N fertiliser inputs. The process involves collecting a representative sample of pasture from each paddock (cut to ground level) and separating it into ryegrass, other grasses, clover, weeds and dead material

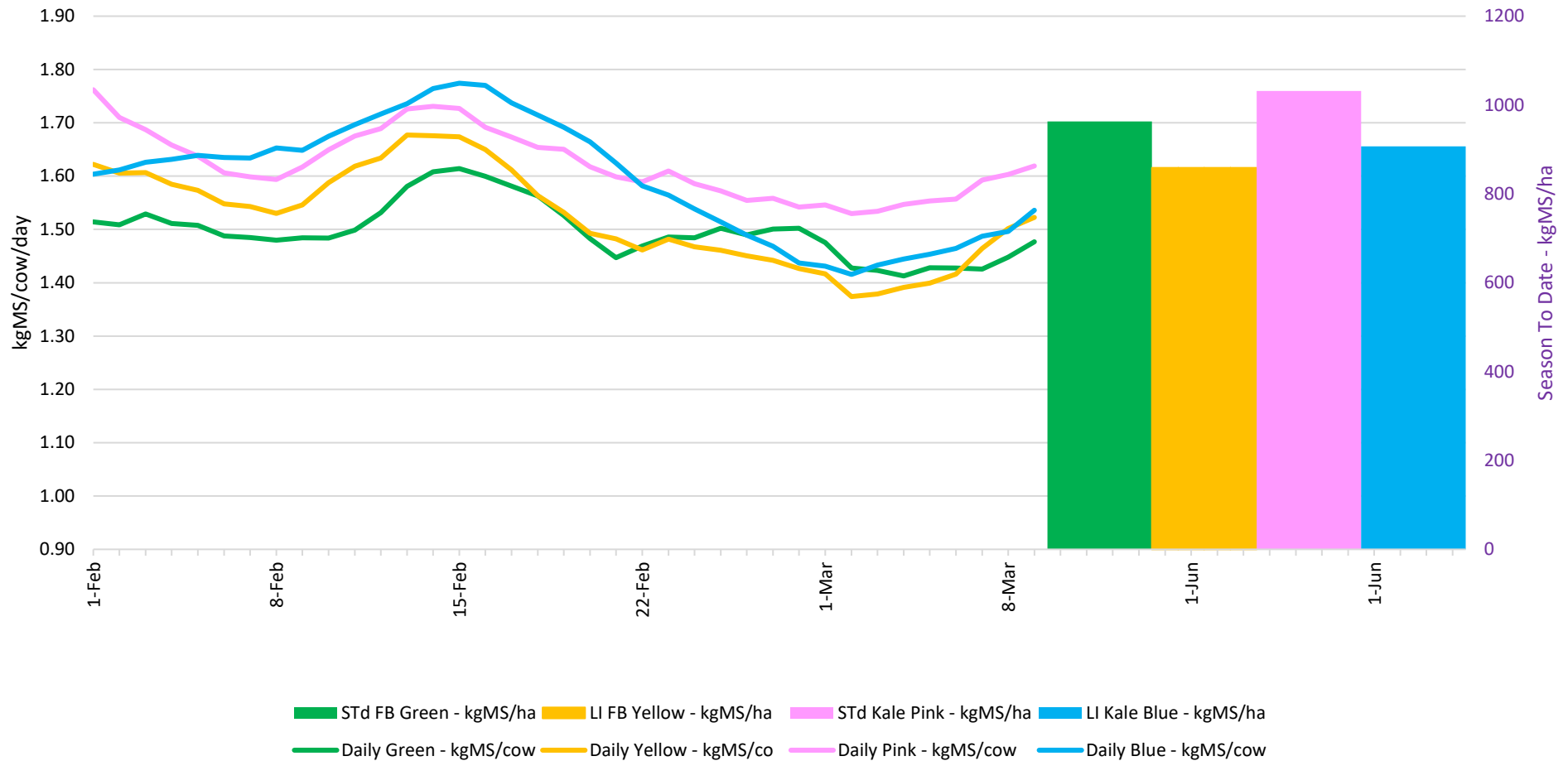
Key observations from this season include:

1. higher proportion of clover in the LI compared with Std farmlets ie. 11.5 vs 5.4%
2. much lower proportion of clover compared with previous seasons for all farmlets
3. higher proportion of ryegrass on the Edendale soils compared with the Pukemutu i.e. 58 vs 48%
4. more dead material in the pastures this year compared with previous seasons (25% compared with 11-16% in previous years), most likely the result of the dry summer conditions

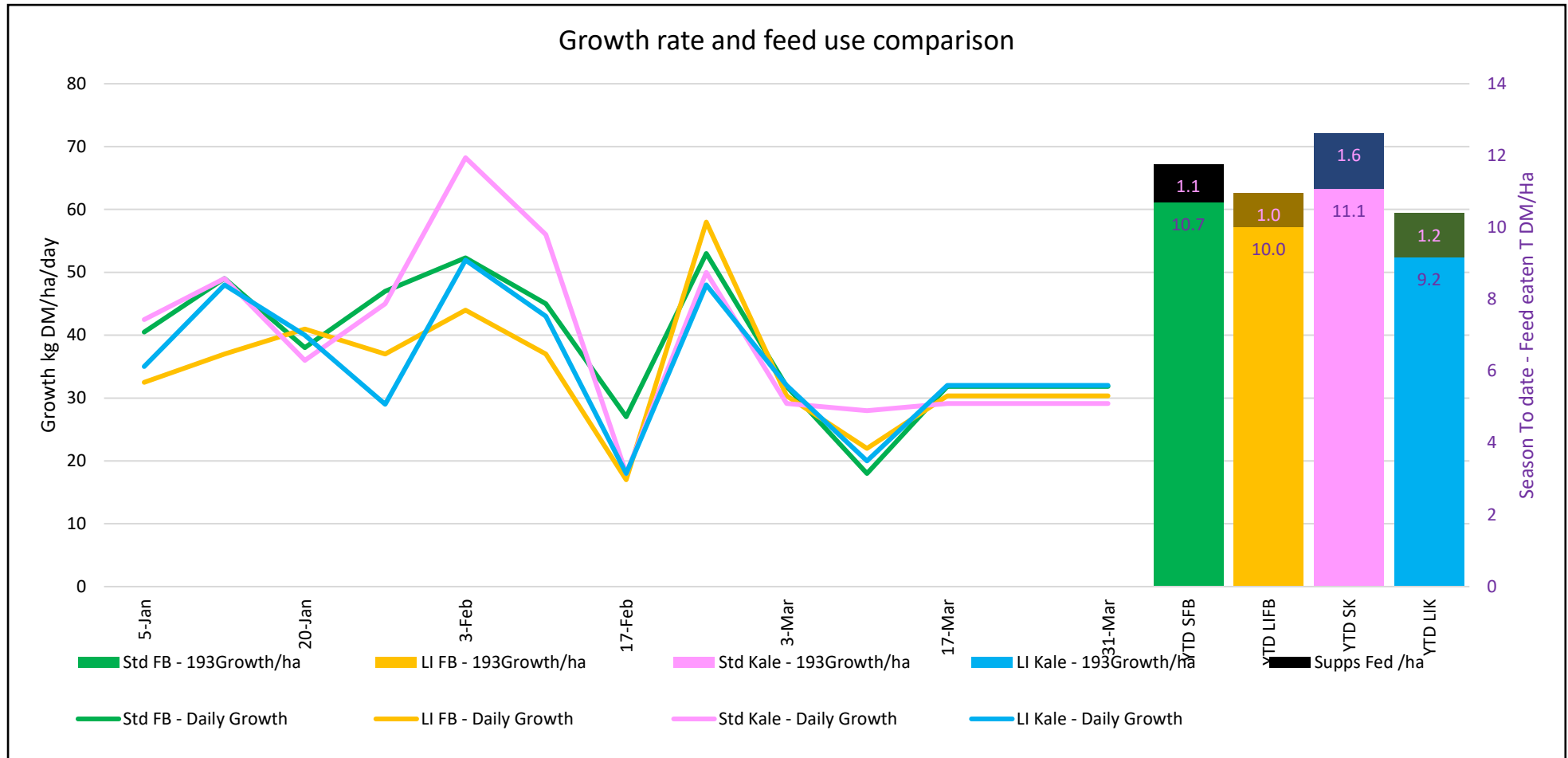


Farm system impacts: of Kale vs Fodder beet for winter AND Reducing N loss to water by 30%.
Kale, Winters on kale - in-shed feed available. Fodder beet, winters on Beet, Beet as lactation supp. Low impact (LI) limited Max 50kg N/ha/year vs Std 193kg N/ha/year

Milk Performance

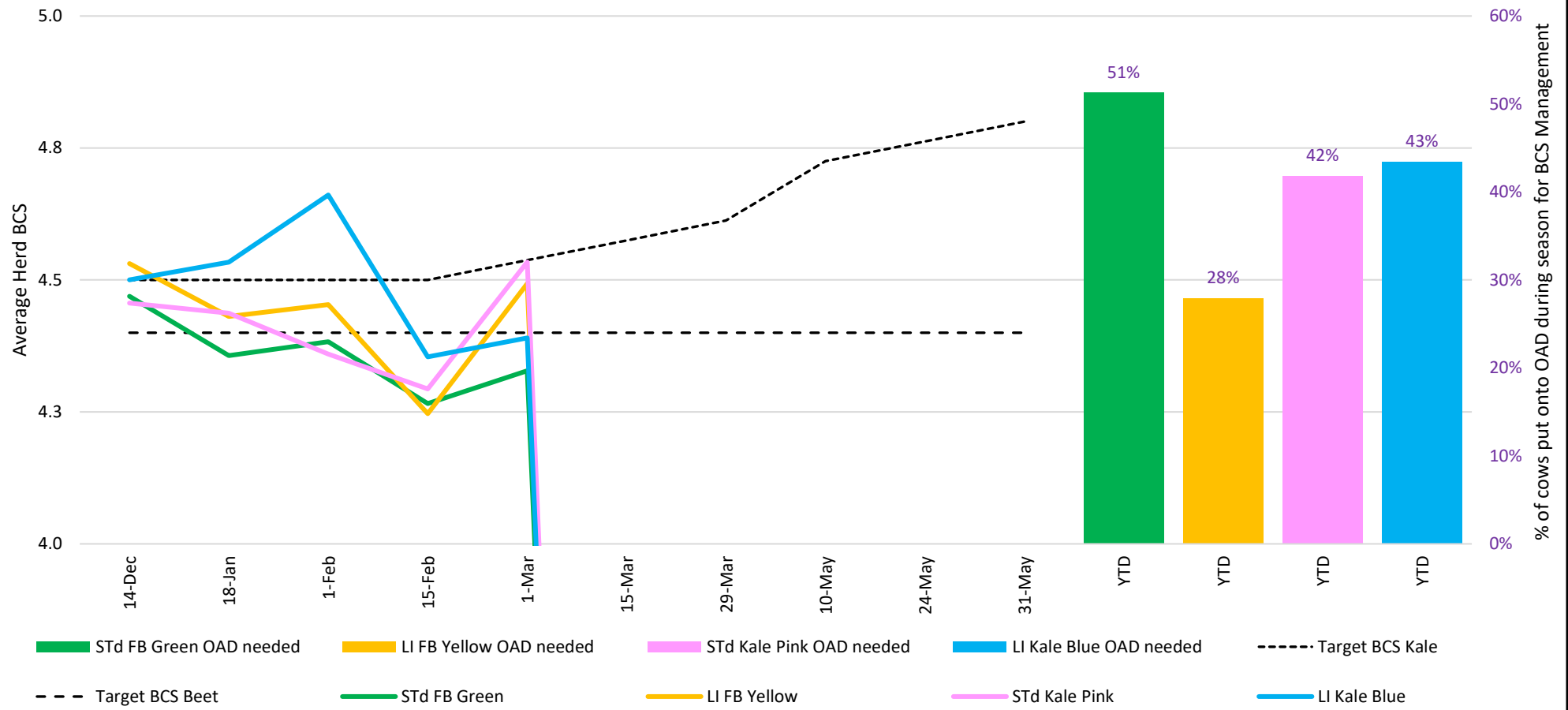


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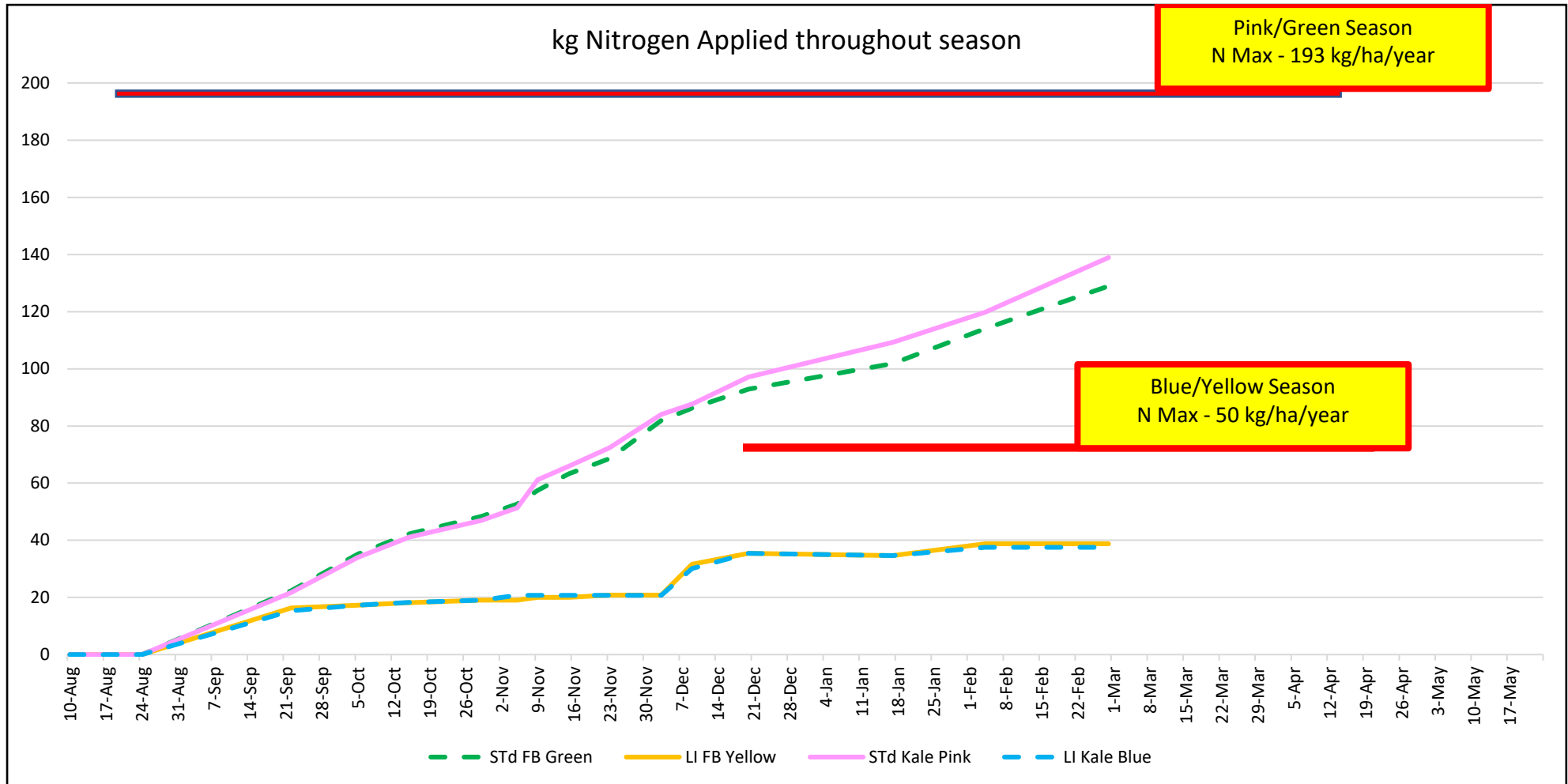


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Average BCS comparison

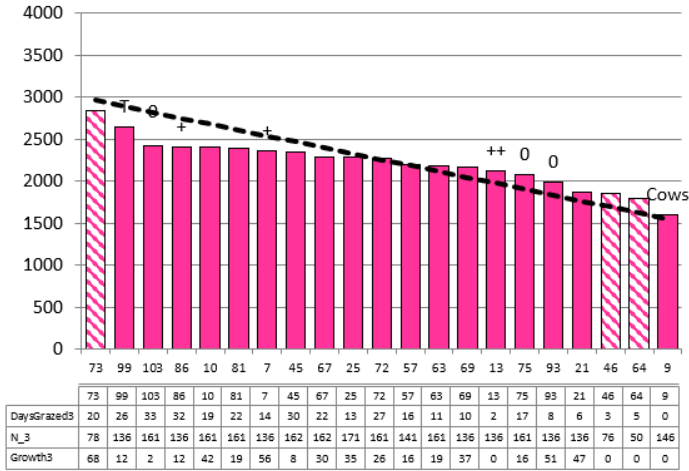


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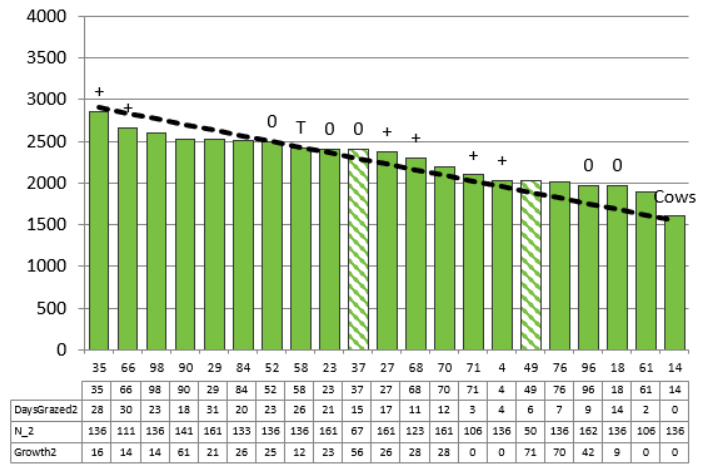


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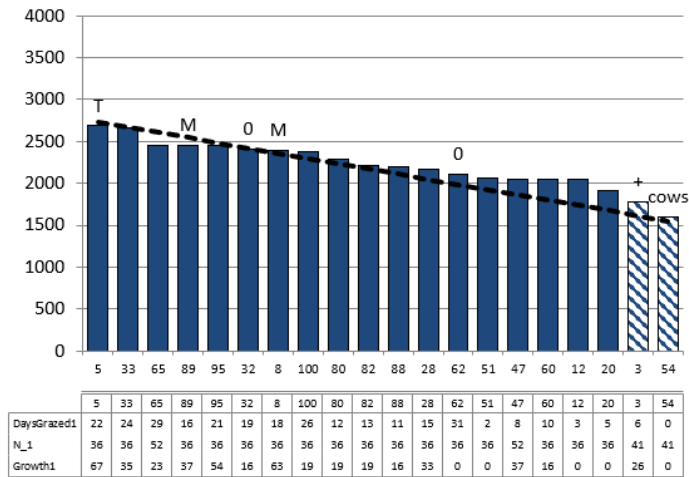
Standard Kale



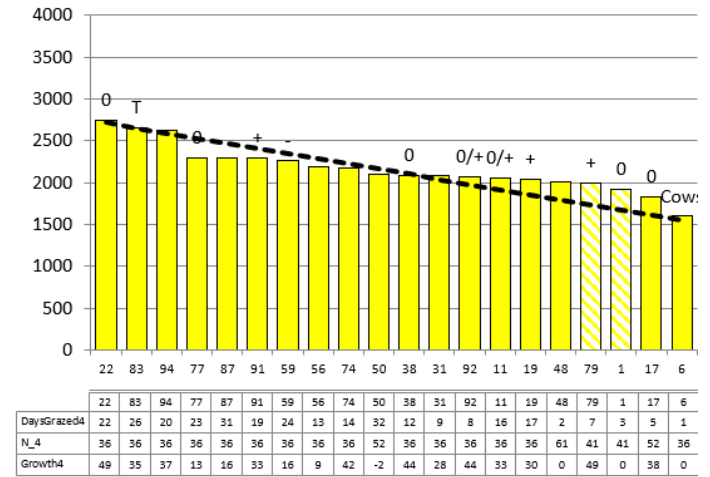
Standard Fodder Beet



Low Impact Kale



Low Impact Fodder Beet



NB: Hatched bars are new grass paddocks being grazed on a faster return interval to maintain quality