

Future Dairy Farm Systems Project – NARF (Dargaville)

Save the Date - NARF field day 7th June 2023. Topics – 2023 farm profitability, alternative pastures species, low input systems, nitrogen/clover dynamics.

This project compares the productivity, profitability and impact on people and the environment on three farms, being:

1. **Current Farm** – Kikuyu & ryegrass based pastures with up to 190 kg N/ha/annum, 3.1 cows/ha
2. **Alternative Pastures Farm** – Fescue & cocksfoot based pastures, up to 190 kg N/ha, 3.1 cows/ha
3. **Low Emissions Farm** – Kikuyu & ryegrass based pastures, designed to reduce methane emissions by 25% and nitrous oxide by 50%, no nitrogen applied, 2.3 cows/ha

This project is funded by DairyNZ, MPI (Sustainable Food & Fibre Futures) and Hine Rangī Trust.

| Update – 4th May 2023 | Current Farm | Alternative Pastures Farm | Low Emissions Farm |
|---|---------------------|----------------------------------|---------------------------|
| Avg Pasture Cover (kg DM/ha, excl silage pad) | 2128 | 2010 | 1975 |
| Pasture Growth (kg DM/ha/d, last 2 weeks) | 56 | 49 | 50 |
| Rotation Length (days) | 36 | | |
| Cows in Milk/Peak Cows | 55/66 | 51/67 | 37/49 |
| Production/cow/day (kg MS) | 0.90 | | |
| Production/ha/day (kg MS) | 1.67 | | |
| Production/cow – 2022/23 season (kg MS) | To be advised | | |
| Production/ha – 2022/23 season (kg MS) | To be advised | | |
| 6 week in-calf rate | 81% | 82% | 82% |
| Empty Rate | 10% | 11% | 12% |
| Supplement Fed (kg DM/cow/day) | 3.1 to milkers | | |
| Total Purchased Supplement Fed (kg DM/cow 2022/23 season) | To be advised | | |
| Homegrown Silage Fed (kg DM/cow) | To be advised | | |
| Homegrown Silage on hand (kg DM/cow) | To be advised | | |
| Average Body Condition Score (Milkers) | 4.2 | 4.2 | 4.2 |
| Worry Score (1 = Low, 10 = High) | 4 | 4 | 3 |
| Nitrogen – Season to Date (kg N/ha) | 154 | 159 | 0 |
| Rainfall (mm last 2 weeks) | 71 mm | | |

CURRENT MANAGEMENT

- We have restarted our individual farms after flood damage from cyclone Gabrielle wiped out pastures and caused us to stop our project. Pastures are now re-established and cows split up again onto their individual farms.
- Warm rain in the last week has lifted pasture growth rates. Kikuyu growth is very strong and ryegrass and tall fescue growth are close behind.
- We are anticipating pasture covers increasing fast over the next week or two. To help keep kikuyu pastures under control we will stop feeding supplement on all farms and target a rotation length of 28 days for now. This will be extended dramatically when kikuyu growth slows and/or cows are dried off.

- Newly re-established tall fescue/cocksfoot/chicory pastures are looking good. We will apply a dressing of nitrogen (sustain) to these at 23 kg N/ha, behind the cows.
- Around 75% of our kikuyu based pastures have now been mulched and under-sown (drilled) with Italian ryegrass which is coming through nicely. We are not applying nitrogen to these kikuyu based pastures yet as with the current warm conditions nitrogen would boost the kikuyu growth too much and smother the emerging rye seedlings.
- Around 20% of cows are already dried off (light conditioned and low producing cows). We will drop a few more cows out in the next few days but intend to keep others milking until 19th May.
- We are content with current cow condition, average 4.2, but will have to monitor it carefully to ensure 5.0+ by calving (10th July).