

Future Dairy Farm Systems Project – NARF (Dargaville)

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 2 nd November 2023	Current Farm	Alternative Pastures Farm	Low Emissions Farm
Avg Pasture Cover (with silage, kg DM/ha)	2411	2257	2207
Pasture Growth (kg DM/ha/d, last 2 weeks)	81	75	58
Rotation Length (days)	26	27	27
Cows in Milk/Peak Cows	81/81	83/83	61/61
Production/cow/day (kg MS)	1.93	1.87	1.60
Production/ha/day (kg MS)	5.61	5.59	3.51
SCC ('000)	89	108	58
Supplement Offered (kg DM/cow/day)	0	0	1.8 PKE
Purchased Supplement Fed (kg DM/cow)	499 PKE	468 PKE	222 PKE 113 Baleage
Homegrown Silage Fed (kg DM/cow)	0	46 Baleage	512 Baleage
Homegrown Silage on hand (kg DM/cow)	0	0	0
Average Body Condition Score (Milkers)	4.2	4.2	4.1
Manager Worry Score (1 = Low, 10 = High)	3	3	4
Nitrogen to date – 2023/24 Season (kg N/ha)	142	143	0
Rainfall (last two weeks)	47 mm		

CURRENT MANAGEMENT

- Pasture growth and pasture covers have lifted in the last fortnight. The Current Farm has 19% of land closed for silage while only 3% on the Alternative Pastures Farm. We expect more paddocks to be closed on all three farms in the next week.
- The Low Emissions Farm, where no nitrogen is applied, has been struggling for pasture cover all season. Cows have been receiving supplement for almost 5 months. Supplement will stop now as pastures have lifted. Clover presence on this farm is now at 27% of pasture, finally lifted after being wiped out by flooding during cyclone Gabrielle.
- Some fescue paddocks are being topped behind the cows.
- Sustain at 70 kg/ha continues behind the cows on the Current and Alternative Pastures farms, while conditions are suitable.
- Comparing pasture growth between the Current and Low Emissions Farms provides an indication of response to nitrogen. This shows we have had a high response this season - 19 kg DM/kg N applied.