

Future Dairy Farm Systems Project – NARF (Dargaville)

This project commenced June 2021. It will compare 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, 2.1 cows/ha

This project is funded by DairyNZ, MPI (Sustainable Farming Fund) and Hine Rangi Trust.

Update – 13 th January 2022	Current Farm	Alternative Pastures Farm	Low Emissions Farm
Avg Pasture Cover (kg DM/ha) excl silage pdks	2066	1875	2175
Pasture Growth (kg DM/ha/d, last 2 weeks)	20	22	19
Rotation Length (days) – avg last 2 wks	29	28	28
Cows in Milk/Peak Cows	85/85	85/85	59/59
Production/cow/day (kg MS)	1.44	1.57	1.34
Production/ha/day (kg MS)	4.46	4.85	2.87
Production/ha/season to date	856	886	560
Milk FEI	8.2	8.0	5.5
Supplement Fed Currently (kg DM/cow/day)	1.6 – 3.2 PKE 0 – 1.8 Silage	2.1 – 3.2 PKE 0 – 1.8 Silage	0 – 2.5 Silage
Purchased Supplement Fed (kg DM/cow/season to date)	230 PKE 80 Purch Silage	196 PKE 6 Purch Silage	67 PKE
Homegrown Silage Fed (kg DM/cow to date)	32	34	135
Home Grown Silage on hand (kg DM/cow)	198	127	686
Average Body Condition Score	4.0	4.1	4.0
Worry Score (1 = Low, 10 = High)	5	5	4
Nitrogen – Season to Date (kg N/ha)	171	172	0
Rainfall (mm last 2 weeks)	0 mm		

CURRENT MANAGEMENT

- Hot dry conditions have resulted in a drop in pasture growth and cover on all farms. Kikuyu is still looking green but ryegrass has frizzled. Soil temperatures (10cm deep) have hit 27°C some afternoons
- PKE is being fed to milk FEI limits on the Current and Alternative Pasture farms. Baleage has also been fed when PKE is not enough. PKE feeding and up to 2 kgDM/cow/day of baleage will continue. If more supplement is needed then DDG will added in on these farms. The Low Emissions farm will only feed baleage as there is plenty on hand.
- Alternative Pasture farm cows have been milking better than the other farms, likely in response to higher pasture quality from the chicory and clover
- Comparing pasture growth measures between the Current and Low Emissions farm provides an assessment of nitrogen response. Overall, this has indicated 8.1 kg DM/kg N applied. This is lower than expected, possibly due to the high clover presence in the Low Emissions farm pastures
- Milking twice-a-day will continue on all farms