

My approach to farming for better nitrogen efficiency

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NATIONAL DAIRY CONFERENCE 2024

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Who we are....

- Macnamara family
 - Knockainey, Co. Limerick
- Milk 220 spring calving dairy cows (*NAP Derogation*)
- 76 ha milking platform
- 115 ha total farmed area



Overview of talk

What we have done on our farm to improve Nutrient use efficiency and improve water quality in the Morning Star River

- i. Approach change**
- ii. Soil fertility**
- iii. Clover and Nitrogen management**
- iv. Biodiversity and habitat development**
- v. Water quality**

What has changed in our approach to dairy farming in the last few years

- **Grow grass with clover**
- **Better control of Nutrient applications**
- **Farm DM production and grass growth weekly prediction**
- **Improving nature areas of the Farm**
- **Improving Carbon Farm Footprint**
- **Water Quality awareness**
- **Making life easier – Underpass, bridge, contractor usage**
- **Finance performance consistency**

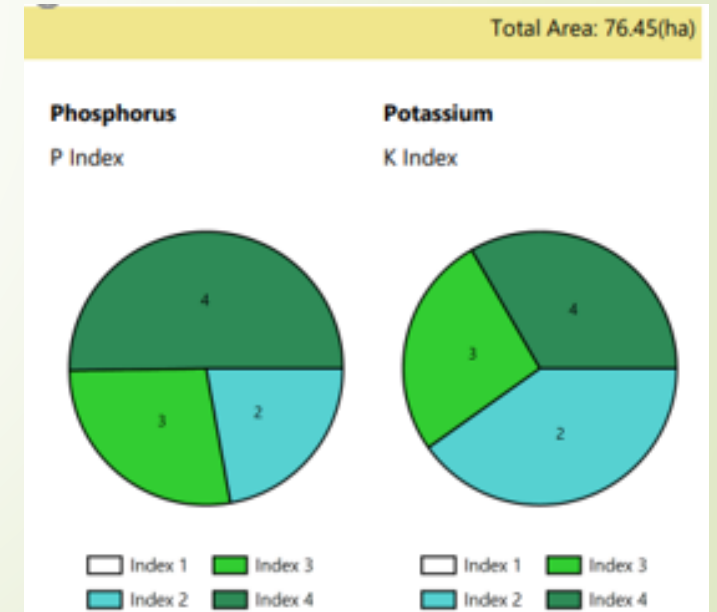
Our Farm KPI's & Performance

	Targeted KPI	Performance 2024	Performance 2021
Pasture Production (t DM/ha)	15.0	14.1	16.5
Concentrate kg/cow	<700	770	625
Milking platform Stocking Rate	2.9	2.9	3.1
Whole Farm Stocking Rate	2.3	2.45	2.7
Chemical N per ha	180	194	198
Milk solids per cow	480	465	480
Milk Protein %	3.90	3.88	3.72
Herd EBI	+250	239	168
6 week calving rate	85%	75%	70%
Area under Habitat (%)	15%	12%	8%

Farm Soil Fertility



- Farm ph – 6.4
- Area limed annually – 15ha
- Targeted P & K application – Slurry & 18/6/12



Farm Map (Clover Paddocks)

Starview Farm

65% of the farm in clover now



Year	% reseeded MP	% over sown MP
2022	11%	14%
2023	4%	11%
2024	15%	8%

How we managing N balance across the year?

Spring

1. Right conditions for early N (temp/rain etc)
 - 30kg ha Feb Nitrogen essential for spring growth
2. Slurry- 2500 gallons/ac with LESS
 - Target 1/3+ of farm area for early slurry
 - Adequate storage- spread based on conditions
3. Start grazing in February
 - Ground conditions – on/off grazing
 - Grass/Silage & concentrate

Summer

1. Match stocking rate to herd feed demand
2. Target slurry P/K and lime to lower index fields
3. Reduce N on clover paddocks (> 25%)
4. Low protein supplement - <13%
5. Milk Protein focus + 3.80+%

Autumn

1. All slurry/Soil water applied onto lower index fields in good growing conditions
2. Yard maintenance- clean yards
3. Adequate closing cover (>750+ kg DM/ha)
 - Protect clover paddocks

Farm Nitrogen Performance

Year	Fertiliser (Kg N/ha)	N Surplus (kg N/ha)	Grass DM Production (t DM/ha)	Clover Area %	Clover Content %
2020	205	161	15.7	12%	10%
2021	181	139	16.6	20%	12%
2022	161	116	13.8	61%	14%
2023	148	106	14.3	62%	19%
2024	194	154	14.1	65%	21%
Average	178	135	14.9	44%	16%

Farm Target
130 kg N

Morningstar River (tributary to River Maigue) - Water quality

Farmyard and Infrastructure



Tree Planting



Hedging and Habitat along River



Nutrient Management



Our Management Practise will improve the Water Quality status of the adjoining Water Course

Local Water Quality – Q Values



Q Value*	WFD Status	Pollution Status	Condition**
Q5, Q4-5	High	Unpolluted	Satisfactory
Q4	Good	Unpolluted	Satisfactory
Q3-4	Moderate	Slightly polluted	Unsatisfactory
Q3, Q2-3	Poor	Moderately polluted	Unsatisfactory
Q2, Q1-2, Q1	Bad	Seriously polluted	Unsatisfactory

Local Station

What's next for our farm?

- **Use Precision Nutrient management**
- **Improve the clover level**
- **Ensure grass growth increases**
- **Build a higher farm feed reserve**
- **Increase habitat areas on farm**
- **Promote Dairy farming in a positive manner – local schools and community**
- **Continue to enjoy the job with the next generation**

Summary

- **Focus on farm nutrient balance**
 - **Good use of organic manures**
- **Increased milk solids from grass/clover swards**
- **Farmyard and paddock infrastructure**
- **Improve farm features with high nature value**
- **Improve & focus on farm costs (first) and then output**

A group of six children and one adult are walking away from the camera across a lush green field. The children are dressed in casual outdoor clothing, including jackets and t-shirts. In the background, several black and white cows are grazing. The sky is overcast and grey. The text "Improving Water Quality is for Everyone" is overlaid in white at the top, and "Thank you" is overlaid in white at the bottom.

Improving Water Quality is for Everyone

Thank you