Review of Dairygold and Teagasc Joint Programme

Demonstration Farm Programme 2024

Introduction

July 2025


As Chief Executive and Chairperson of Dairygold, we are pleased to present this review of the 2024 Dairygold and Teagasc Demonstration Farm Programme - a partnership built to strengthen the long-term sustainability of Dairygold and its Milk Suppliers operations through the development of economical, environmental and socially sustainable farming systems.

The programme has seen great success over the 30 years it has been in existence, a testament to the knowledge and expertise provided by Teagasc and the hard work, dedication and commitment of our Dairygold Milk Suppliers.

At the heart of this initiative are our demonstration farms. These are real farms showcasing best practices in areas such as grassland management, herd performance, nutrient efficiency, and environmental stewardship. These farms serve as learning hubs for other farmers – places where farmers can share knowledge and tips and also see innovation in action, allowing them to make informed decisions to improve their own operations.

An element of the programme that has been particularly successful has been the Signpost Programme, which was launched in 2021 with the aim of equipping ten signpost farmers with additional knowledge, skills and practical competencies to achieve carbon reduction targets. These signpost farmers have seen huge improvements in farm sustainability and profitability as a result of the training received on the programme, and have also been hugely influential in the adoption of those practices and technologies on farms across the Dairygold catchment area.

We have a thriving dairy industry in this country and despite the challenges faced by the industry and farmers, we're making great strides to improve our ways of farming to ensure that dairy farming continues to be an economically advantageous career and way of life for generations to come.

We would like to sincerely thank the participating farmers who have opened their farms and shared their experiences for the benefit of others.

We would also like to thank Nora O'Donovan and Stuart Childs of Teagasc for all of their hard work which is crucial to the success of this programme, and for producing this report.

Together with Teagasc we look forward to continuing this journey – sharing knowledge, strengthening communities and ensuring a bright future for Irish dairy.

Michael Harte
Chief Executive, Dairygold

Pat Clancy
Chairperson, Dairygold

Teagasc is pleased to present this annual review of the Dairygold and Teagasc Joint Programme 2024.

Teagasc have had a Joint Programme with Dairygold since the early 1990's and it has served Dairygold and its suppliers well as is evident from the average Key Performance Indicators (KPIs) of Dairygold suppliers. Demonstration farms have been central to the Programme, facilitating the transfer of knowledge on new ways of farming from these farms to the wider supplier base through public events, monthly discussion group meetings and one to one advisor contact.

This knowledge transfer allows Dairygold's suppliers to farm more productively and profitably while rising to the challenge of farming more sustainably.

I would like to thank all of those who contribute to making the Joint Programme a success and particularly wish to acknowledge the immense work of the demonstration farmers and their families for rising to the challenges of implementing new technologies on their farms and of course for their openness in sharing information and making their farms available for farm walks throughout the year.

John Horgan
Teagasc Regional Manager, Teagasc Cork East Region

Executive Summary

Background

The Dairygold Teagasc Joint Advisory Programme has been in operation for over thirty years.

Over this time, it has helped demonstrate best farm practice, provided technical advice and offered development support to Milk Suppliers across a catchment spanning counties Cork, Limerick, Clare, Waterford and Tipperary. Previous joint programmes delivered on objectives of increasing milk protein content and preparing and managing expansion in the post EU milk quota era. A changing policy and economic context outside the farm gate has seen the programme alter its focus in recent years, by continuing to focus on productive and profitable farming, but with greater emphasis on improving the industry's sustainability credentials in the face of environmental challenges and obligations. Nutrient management, clover incorporation into grassland swards and overall environmental sustainability are new objectives for farmers, and the need for support and advice to deliver progress is significant.

The ten demonstration farms participating in the Dairygold/Teagasc programme were selected to offer best practice in farming in a new environment of lower inputs while still maintaining excellent productivity and financial performance. The demonstration farmers have put in phenomenal efforts both individually and collectively over the last number of years, and with the support of the programme team, the group have worked through some significant challenges from floods to droughts to national lockdowns and subsequent inflation in the cost of production.

This review of the 2024 production year aims to share the experiences of the ten demonstration farms with their Dairygold farmer peers. The information covers breeding, finance, grassland and milk quality along with experience of meeting environmental goals. We hope that the information, gathered from working farms across the catchment, will be useful to all Dairygold suppliers as they chart the course for the future of their own farm businesses.

Summary Points

Grazing and Pasture Utilisation:

- Despite using 20% more chemical nitrogen, grass grown on the Dairygold Teagasc Joint Programme demonstration farms was 0.6 tonnes of dry matter per hectare less in 2024 than in 2023. PastureBase Ireland data shows a similar grass production trend nationally with 0.5 tonnes of grass dry matter per hectare less grown in 2024 than in 2023.
- The difficult grazing conditions in 2024 highlighted the necessity for excellent grazing infrastructure (roads, spur roads and multiple access points to paddocks), to utilise grass in spring and autumn.

Breeding:

- Herd Fertility and Breeding Performance on the Dairygold Teagasc Joint Programme demonstration farms was excellent in 2024, with an average of 88% of cows calved in 6 weeks across the farms. This compares with 72% of cows calved in 6 weeks on the average Dairygold Supplier's farm. Empty rate on the Dairygold Teagasc Joint Programme demonstration farms averaged 9.1% after 10.5 weeks of breeding in 2024.

Financial Performance:

- Cost of production on a per cow basis have increased by 38% on average across the 10 Dairygold Teagasc Joint Programme demonstration farms between 2021 and 2024.
- It is vital that farmers know and understand their own costs of production to allow for targeted cost control and informed evaluation of opportunities and investments.

Sustainability:

- 90% of the chemical nitrogen fertiliser used on the Dairygold Teagasc Joint Programme demonstration farms was applied in the form of Protected Urea.
- Soil analysis was carried out across the Dairygold Teagasc Joint Programme demonstration farms in January 2024. Following on from this an average of 121 tonnes of lime was spread per farm in 2024.
- Dairygold Teagasc Joint Programme demonstration farms have an average field size of 3.9 hectares and an average of 222 metres of hedgerow per hectare.

1. Review of the Grazing and Pasture Utilisation in 2024

Dairygold suppliers won't need to be reminded that 2024 began as a very challenging year. It started with extremely wet weather; recorded rainfall was between 152% and 182% of the long term average (LTA) rainfall for February, March and April across the Dairygold catchment (Table 1). This was following a very wet autumn period in 2023 with associated consequences for silage stocks on farms across the catchment. Spring grazing conditions were difficult on all farms; where repeated poaching occurred in the spring it had a subsequent negative impact on grass swards right through into the mid-season.

The difficult conditions really highlighted the necessity for excellent grazing infrastructure for the shoulders of the year. An excellent network of roads, spur roads and multiple access points allowed for on-off grazing. This should be a key consideration for all suppliers in 2025 to future-proof their operations to the challenges experienced in 2024.

Where grazing couldn't take place, some farms with drier outside blocks also used zero grazing to try to keep grass in the milking cows' diet during this difficult period, but this proved a challenge on some farms with inadequate feed space per cow. Having enough feed barrier space is a key consideration for managing in difficult conditions into the future.

Later in the year, rainfall in the June to August period was 40% lower than normal, resulting in localised moisture deficits. Thankfully, some much needed respite arrived when weather conditions improved from September, with above average growth rates and excellent utilisation in October and November allowing for extended grazing into the late autumn/early winter which alleviated some concerns around winter feed stocks.

Ground conditions on Sean Barry's farm, 1st March 2024

Tom O'Connell's spur road, 10th May 2024

Table 1: *Total rainfall in millimetres for Cork Airport (Met Eireann)*

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2024	99	158	168	107	110	35	58	72	96	145	145	77	1,270
2023	135	15	211	52	45	50	145	118	171	307	108	169	1,527
2022	38	112	62	65	36	84	28	14	163	232	203	113	1,151
LTA	131	97	91	86	81	83	87	95	92	131	127	137	1,239

Table 2: *Comparison of Milking Platform Pasture Performance and Chemical Nitrogen (kgs/ha milking platform) on Dairygold Teagasc Demonstration Farms 2024 v 2023 (PBI)*

	2023			2024			Difference
Farm	**Grazings**	**N/ha (PBI)**	**Tonnage**	**Grazings**	**N/ha**	**Tonnage**	**t/Ha**
Walsh	7.9	115	15	7.9	161	13.7	-1.3
Riordan	8.9	175	16.4	9.2	221	13.1	-3.3
Cotter	8.5	135	12.3	9.5	168	12.8	0.5
Morrissey*	9.7	146	11.1	9.2	142	10.6	-0.5
Lonergan	7.1	181	13.4	7	193	12.6	-0.8
Barry*	7	107	12.5	8	133	13.8	1.4
Moher**	8.6	143	11.9	8.5	151		
Leader	7.2	150	12.2	7.4	169	11.0	-1.2
Connell	8.5	143	14.5	9	196	13.0	-1.5
Goggin*	9.3	179	12	9.6	189	12.6	1.0
Average	**8.3**	**147**	**13.1**	**8.5**	**172**	**12.6**	**-0.6**

** N/Ha whole farm from Farm records **Incomplete grass data 2024*

With such challenging weather conditions making grass management difficult throughout the spring and summer of 2024, annual tonnage was back 0.6 tonne/DM/ha compared to 2023 (Table 2). In an effort to increase grass growth almost 20% more chemical Nitrogen was used in 2024 on the demonstration farms, but this didn't make up for the weather conditions. Good grazing infrastructure allowed them to achieve slightly more grazings per paddock in 2024 than 2023. Pasturebase data shows a similar grass production trend nationally with 0.5/ton less grown in 2024 (11.8ton/DM/ha) compared to 2023 (12.3ton/DM/ha)

Stocking Rate Questions

Optimal stocking rate for grazing and whole farm is a major question for Dairygold farms, both from a compliance and a farm profit perspective. Tom O'Connell hosted a very well attended evening farm walk in July. The walk entitled 'Sweet Spot for Stocking Rate' questioned if Tom's stocking rate is maximising profitability on his farm. Factors influencing stocking rate decisions which were discussed on the night included the increased milk solids production potential of his herd through genetics and herd maturity, and how this affects total dry matter intakes. Also considered were calving pattern on the farm, opportunities to reseed and average grass growth over the previous 3 years.

The area of out-blocks available and their grass growth capacity as well as the facilities in place were also discussed and the impact all of these variables have on profitability. As a consequence of the discussion, Tom has adjusted his grazing stocking rate for the 2025 production year from 3.5 to 3.25. This has been done in two ways;

1. Through the acquisition of some additional land adjacent to the milking platform.
2. Through culling of a small number of lower performing cows.

The expectation is that this adjustment will allow the herd to perform to their potential and allow Tom and his team to continue their annual reseeding programme without creating a pinch point in terms of growth required to meet the herd's needs at peak. The aim is to turn grass into milk in the most efficient way possible.

Adrian O'Callaghan, local Teagasc Advisor, with Tom and Helen O'Connell.

2. Review of Breeding 2024

The fertility and breeding performance of the demonstration farm group was excellent in 2024. Calving commenced in late January on most of the farms in the group. The average calving season was eleven weeks. The compact nature of calving patterns on the demonstration farms is evident in Table three. The average six week calving rate for the group was 88%, with the average cow on farm calving for the fourth time.

An average of 98% of heifers calved within the target age range of twenty two to twenty six months on the demonstration farms which is substantially higher than the average for Dairygold suppliers (78%). Calving interval was 371 days with a target of further improving to 365 days in future years. Breeding commenced in late April/early May with an average breeding season length of ten and a half weeks.

Table 3: *Calving pattern on the Demonstration Farms in 2024 (ICBF)*

Name	% cows and heifers calved per month					
	Jan	Feb	Mar	Apr	May	Jun
Sean Barry	0	63	30	7	0	0
James Cotter	4	71	24	2	0	0
Raymond Goggin	16	65	16	3	0	0
Timothy Leader	0	68	21	11	0	0
Mark Lonergan	0	72	19	8	0	0
Sean Moher	12	72	12	4	0	0
Joseph Morrissey	23	54	14	8	0	0
Thomas O'Connell	30	54	15	1	0	0
Tim O'Riordan	3	35	39	22	0	0
John Walsh	12	70	14	4	0	0
GROUP AVERAGE	**10**	**63**	**20**	**7**	**0**	**0**

Sexed Semen

Eight out of ten farms identified high performance high genetic merit cows and heifers to target with sexed semen to produce high quality replacement heifers. Sexed semen was targeted for use early on suitable cows and heifers to help minimise any potential impact a reduced conception rate may have on the subsequent six week calving rate of the herd. Overall experience with sexed semen within the group was positive and all of the group plan to use the product in 2025.

Table four shows that despite the difficult weather and growth conditions around the time of breeding in 2024, overall in calf rates were good with the average empty rate <10% across the ten farms.

Table 4: *Breeding Key Performance Indicators 2024 (ICBF)*

KPI	Average	Range
Calving Season (weeks)	11	9 - 13
Calving Interval (days)	371	364 - 386
6 Week Calving Rate (%)	88	71 - 97
Calvings per Cow	4	3.2 - 4.5
Breeding Season Length (weeks)	10.5	8.5 - 14
Empty rate (%)	9.1	3 - 16

Table 5: *Dairy Bull Selection Targets used in 2024*

Sub index	Threshold for individual bulls	Team average	Actual Cow Average in the Demo Group
Milk	≥ €70	€100	€63
Fertility	≥ €90	≥ €140	€110
Maintenance		+€15	€14
Health	≥ €8	≥ €13	Positive
Carbon	Positive	Positive	€9

Bull selection

Table five outlines the breeding guidelines the farms were working with when choosing bulls in 2024. Each of the farmers also worked on identifying areas within the main sub-indexes to maximise the potential of their herds, such as increased fat and protein % and kg of fat and protein within the milk sub-index, as well as TB resistance within the health sub-index.

Invest time in bull and cow selection to maximise your farm's genetic gain

Three of the farmers hosted on-farm events in April 2024 focusing on breeding, herd fertility and appropriate stocking rates. The benefits of breeding high genetic merit replacement animals using dairy AI are clearly evident when we compare the Demonstration Farms co-op performance report figures with the average of the Dairygold supplier base (Table 6). Use of AI breeding has been a strong driver of the accelerated genetic improvement of these herds.

There is a large difference in the percentage of dairy replacements being bred from AI when we compare the Demonstration Farms, and indeed the Dairygold Top 10%, who are both using nearly 100% AI for producing replacements compared to the Dairygold average where only 64% of the dairy replacements are AI bred. Not only does AI allow access to the highest genetic merit bulls, it also allows for using a larger range of bulls, which facilitates the breeding of a more uniform herd.

Dairy beef

With a view to improving the quality of the beef calves coming from these herds, the group engaged with Alan Dillon from the Teagasc Dairy Beef 500 Programme to select beef bulls that will generate High Commercial Beef Value (CBV) calves. This is an important element of breeding on dairy farms with the steadily increasing proportion of beef coming from dairy beef. The importance of better beef breeding to the sustainability of the beef industry cannot be underestimated.

I've been using beef AI for over 15 years to produce better quality beef calves. Last year I used a mix of high Commercial Beef Value (CBV) AA, HE & BB beef straws across the herd. I target the stronger more mature cows with BB and I've had no issues with calving difficulty or gestation length.

Joe Morrissey

Belgian Blue and Angus beef calves on the farm of Joe Morrissey, the result of 2024 breeding.

Table 6: *Key performance comparison between the Demonstration Farms and Dairygold Supplier Base (ICBF)*

	Performance for 2024		
	Demonstration Farms	Dairygold Average	Dairygold Top 10%
EBI	236	184	239
Fat and Protein (kg/cow)	502	421	526
Fat %	4.53	4.36	4.62
Protein %	3.70	3.58	3.74
SCC	119	177	98
Calving Interval (days)	371	382	363
6 Week Calving Rate (%)	88	72	89
% AI bred replacements	97	64	100
Heifers Calving at 22-26 months (%)	98	78	100

Note: When looking at Key Performance Indicators (KPI's) from ICBF Co-Op Performance Reports, it is worth noting that the Dairygold top 10% figure is for each individual parameter whereas the ten demonstration farms are almost in the top 10% across all of the parameters.

3. Review of Financial Performance 2024

Note: Financial performance on demonstration farms should always be quoted with reference to the costs that have yet to be covered by the Net Dairy Margin. Many Irish farms are family farms with often more than one family's drawings and living expenses required to be covered from the net margins which are sometimes quoted in the farming press. It is therefore important to state that net margin is calculated before a farmer's own and family wages are deducted, income tax is paid or capital repayments are made on loans. Across the ten demonstration farms there is a spread of scenarios from three generations to two generations dependant on the farm.

Table seven summarises the 2024 physical and financial performance of the ten farms in the programme, showing the group average and the range that exists within that. The average milking platform is 45 ha with an average of 133 cows milked, giving a milking platform stocking rate of 3 Lu/ha. The average whole farm stocking rate of the farms is 2.09 LU/ha (187 kg Organic N/ha). Eight of the ten farms are availing of the nitrates derogation.

Gross output was 59 c/l, largely driven by an average milk price across the year of 53.7 c/l. Calf sales, cow sales and inventory change accounts for the additional gross output.

Table 7: *KPI figures for the Dairygold Demonstration Farms 2024 (eProfitMonitor and ICBF)*

	2024 Average	Range
Farm Ha	85.09	46 - 198
Overall Farm SR	2.09	1.58 – 2.49
Kg's of N/Ha	172	139 - 221
Avg. LU	177	96 - 430
Dairy Cows	133	67 - 315
Litres of Milk Produced	787,118	357,000 - 1,764,000
Litres/ Cow	5,998	5,414 - 6,390
Milk Price C/L	53.7	51.4 - 57.2
Milk Price €/KG MS	6.33	6.26 - 6.43
KG MS/ Cow (produced)	509	439 - 570
Milking Platform Stocking Rate	3.0	2.2 -3.7
Milking Platform hectares	44.8	24.3 - 91
Gross Output Cent/Litre	59.0	55.2 - 64.5
Total Variable Costs C/L	24.8	18.6 - 27.7
Total Fixed Costs C/L	15.3	6.6 - 19.7
Total Costs C/L	40.1	32.0 - 46.8
Net Margin C/L	18.9	12.7 – 30.1

Net Margin must cover Own and Family Labour, Tax and Capital Repayments

Trends in dairy farm margin

Trends in a number of key performance indicators over the past four years across the ten farms are outlined in Table eight. The average area of the farms has grown during this period with stock numbers relatively static, resulting in a decrease in average whole farm stocking rate from 2.24 LU/ha to 2.09 LU/ha. Milk solids sold per cow recovered somewhat in 2024 from a dip in 2023 but still remained below 2021 and 2022 figures. Variable costs per cow have increased by €430 per cow across the four years. Reduced fertiliser price in 2024 counteracted the increased usage of fertiliser across the farms. Nearly all cost headings have seen increases, with contractor and parlour running costs being two variable costs to see large increases. Therefore, it is important to consider all costs when considering cost control rather than just the big ticket items such as feed and fertiliser. Appropriate stocking rates are also a key consideration when looking at costs incurred.

A similar trend is evident in fixed costs with most costs rising over the period. There has been a significant investment by the demonstration farmers in their facilities including additional slurry storage, upgrades to milking, calving and calf housing facilities. This investment has been carried out with a view to improving either labour efficiency or animal comfort and performance, as well as for additional environmental benefits; however, the funding of such investments must be factored into discussions on farm viability over time. Renewal of land leases as they occur have also led to an increase in the fixed costs of the farms.

Extension to cubicle shed on Tim and Mary Leader's farm, which will provide additional cubicles and feed space plus improved ventilation.

In summary, it is vital that farmers know and understand their own costs of production. This allows for targeted cost control and facilitates informed evaluation of any potential opportunities that would make the business more resilient. The trend also underlines the need for appraisal of dairy farm performance over a multi-year timeframe, especially given the variability in unit costs of inputs and outputs. This was the focus of the walk that took place on the farm of Mark Lonergan in October 2024.

Table 8: *Trends in the Demonstration Farms Key Performance Indicators (eProfit Monitor and ICBF)*

	2021	2022	2023	2024
Farm Size (ha)	82.3	83.3	84.0	85.1
Whole Farm Stocking Rate (LU/ha)	2.24	2.25	2.19	2.09
kg Organic N/ha*	194	196	198	187
Average LU	185	187	185	177
Dairy Cows	136	137	137	132
Milk Produced (litres)	843,119	868,836	803,119	787,118
Litres/Cow	6,255	6,399	5,925	5,998
Milk Price (cpl)	42.0	62.9	44.6	53.7
kg MS/Cow	520	535	498	509
Milking Platform (ha)	42.8	43.8	44.1	44.8
	Costs (Euro per Cow)			
Gross Output	2,959	4,322	2,935	3,536
Total Variable Costs	1,046	1,451	1,401	1,479
Total Fixed Costs	693	771	834	912
Net Margin	1,220	2,100	700	1,144

** SI113 2022 changed Annual nutrient excretion rates for livestock.*

Mark Lonergan farm walk, 10th October 2024

The fat and protein percentage of Mark's herd was worth €200 per cow above the Dairygold average milk price in 2023. In 2024, this increased to €257. This is especially important in years where milk price is low and has an even greater importance in the future given the significant uplift in production costs, many of which will prove challenging to reduce. Mark has already reduced his cow numbers to position himself to deal with the challenges of variability in grass growth and has reaped the benefits of this through increased animal performance.

Completing an autumn grass budget to ensure sufficient closing cover on farm on the 1st of December for your expected grass demand in the subsequent spring is critical to spring farm performance. Mark targets 650-700 cover on his farm.

As a lot of silage had been fed by October, Mark had to update his fodder budget to ensure he had an adequate supply to get through the winter.

Mark's focus on soil fertility is having a big impact on grass and clover grown and utilised on farm, keeping control of costs. Taking all opportunities where weather and ground conditions allow to spread lime and potash where required is important to maintaining and improving soil fertility to continue to drive grass production.

4. Review of Sustainability Performance 2024

One of the main focus points of the 2021-2025 Joint Programme has been to ensure Dairygold milk suppliers develop an economical, environmental and socially sustainable farming system.

As a group the demonstration farmers have adopted new technologies to reduce agricultural greenhouse gas and ammonia emissions, improve water quality and manage biodiversity on farm, while maintaining farm profit.

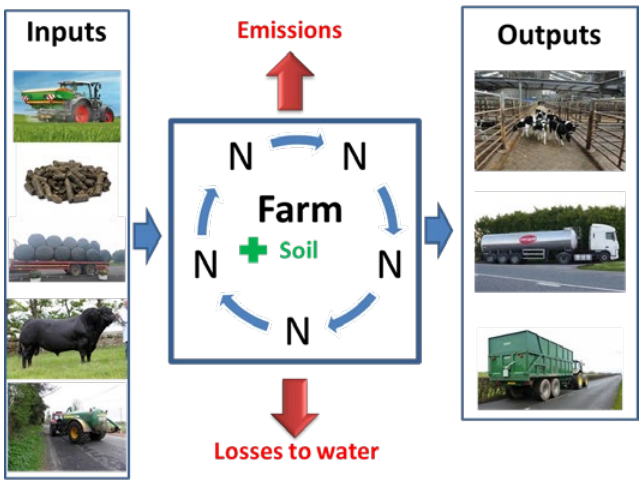
Water Quality

A preliminary report published by the EPA in March 2025 showed that nitrogen levels in rivers reduced in 2024. While not yet at desired levels this is a very positive development. The actions taken by the agriculture sector to reduce nitrogen losses need to continue in order to see further reductions.

Nitrogen (N) balance indicates the potential risk of loss to the environment in the form of N leaching to water plus ammonia and nitrous oxide emissions to the atmosphere. The aim on farm is to reduce this figure, thus reducing the risk of loss, which is very important for water quality.

Figure 1 illustrates Nitrogen (N) balance which is the N inputs purchased onto the farm minus N outputs going out the farm gate.

Figure 1: *Nitrogen Balance*



N inputs include chemical nitrogen, feed (meal & silage) and livestock purchased on to the farm plus imported dung and slurry. The outputs include the milk, meat, feed & organic manures exported or sold off the farm. All of these contain N and the balance between the two is worked out on a per hectare basis.

Key to reducing N balance is reducing the amount of N coming onto the farm, while maintaining output of milk and meat. To maintain grass/forage production with less purchased N we need to make sure no Nitrogen is wasted. Fundamental to this is good soil fertility and optimal use of sulphur, slurry, soiled water and clover. Lower crude protein meal has less N imported, while higher milk protein sold will have higher N exported.

Table 9: *N Balance kg per ha (NFS)*

Demonstration farms N Balance kg per ha (NFS data)			
Name	**2022**	**2023**	**2024**
Group Average	**159**	**138**	176
National Average Dairy Farms From Teagasc Sustainability Report	160	147	not available at time of printing

Excellent progress has been made on the demonstration farms with improving soil fertility & incorporating Red and White clover into their systems. However, there is still significant variation between farms, as well as year to year variation. Poor grass growth and clover performance in 2024 increased meal and fertiliser use which had a knock-on effect resulting in higher N balance across the farms compared to 2023 figures.

The demonstration farms continue to implement the changes to reduce N Balance reducing risk of nutrient loss to the environment.

White Clover

Fertiliser price increases in 2022 along with reductions in fertiliser allowances had the demonstration farmers looking for alternative ways of maintaining optimal levels of output from forage. White and red clover have the ability to fix atmospheric nitrogen, reducing the need for synthetic fertilisers and from an environmental perspective, they help lower greenhouse gas emissions by reducing fertiliser.

The general consensus of the demonstration farmers is that a full reseed was the most successful method of introducing clover onto the farm. Oversowing had more variable outcomes, however given that the cost involved is small, it makes it worth trying especially, for paddocks that have good perennial ryegrass content and aren't in the need of reseeding. Clover is included when reseeding and over-sowing on suitable paddocks will be used also to shorten the timescale to achieve target clover content across the farms.

Demonstration farmer Raymond Goggin oversowed with 2kgs of white clover (Buddy variety) per acre on the 20th May 2024. It had been planned for earlier but ground conditions were too poor after grazing in late April. The paddock had been reseeded in 2019 and had zero clover content in 2024. He used his own grass harrow/seeder (pictured) to stitch it in after grazing. The paddock subsequently got the regular rate of chemical Nitrogen and was grazed at covers of no greater than 1,000kgs/DM/ha until mid-August. Lack of moisture led to a mixed result. In mid-September (pictured) there was not enough clover in the paddock to completely reduce chemical Nitrogen. Raymond will use the clover scoring system to assess this again in 2025 and will determine N fertilizer rate from this. Raymond will oversow again if necessary to get to the desired clover level but is hopeful that he will be able to increase the clover percentage through a combination of grazing management and tailored fertiliser application based on clover content.

Table 10: *% of Milking platform with Clover levels sufficient to allow for reduction in chemical fertiliser applications*

Name	2023	2024
Sean Barry	13	0
Jimmy Cotter	35	50
Raymond Goggin	20	23
Tim Leader	16	22
Mark Lonergan	36	35
Sean Moher	58	70
Joseph Morrissey	0	8
Tom O'Connell	65	65
Tim O'Riordan	8	7
John Walsh	70	50
Group Average	**32**	**33**

White clover in my grazing swards is working to reduce chemical nitrogen and subsequent tractor work as well as increasing milk solids on my farm.

Sean Moher

Raymond Goggin-oversowing clover May 2024

Oversown plot in September 2024

Red Clover

Seven of the farmers established red clover swards when reseeding silage ground in 2021 and 2022. The red clover is typically sown at a rate of 4kgs of red clover seed per acre with ½ - 1kg of white clover plus two to threeperennial ryegrass varieties suitable for silage swards.

Performance of the swards has been mixed within our group. With good establishment three good crops of silage plus a zero graze or grazing with heifers has been achieved using zero chemical nitrogen in the initial years. Research from Teagasc Grange has shown that the crop can persist for six plus years but a lifespan of two to four years is more typical at farm level and this has been the experience within the group. Four of the seven farms have good red clover content in swards that are three and four years old in spring 2025.

Tom O'Connell's 4 year old red clover sward on 7th May 2025 after being grazed in March (sown in 2022)

Table 11: *% of silage ground with significant levels of Red Clover*

Name	2023	2024
Sean Barry	0	0
Jimmy Cotter	50	0
Raymond Goggin	0	0
Tim Leader	23	0
Mark Lonergan	0	0
Sean Moher	31	68
Joseph Morrissey	29	16
Tom O'Connell	22	39
Tim O'Riordan	0	0
John Walsh	10	10
Group Average	**17**	**13**

Learnings from the group:

- Soil pH, phosphate and potash levels must be correct in order to optimise crop growth and persistence.
- Choose red clover varieties on the Northern Ireland or England/ Wales Recommended Lists. Fearga and AberClaret are performing particularly well in regards to yield and persistence in plot trials in Moorepark.
- Red clover is sensitive to poaching and compaction from machinery so it is more suitable for drier fields. It grows from a single point within the plant so if this crown is damaged, issues relating to persistency within a silage sward will arise.
- Research suggests that grazing by livestock in the spring or autumn can shorten the life of the red clover sward but three of the farms with better clover persistence have seen no negative impacts of grazing with heifers before and after silage.

My first red clover silage paddock is in its 4th year now. It received zero chemical nitrogen for the first 3 years but I thought it had a bit less clover content this spring (2025) so I gave it a bag of 38-0-0-7 in late March. This has had a huge saving in chemical nitrogen over the years, while growing three cuts of silage and two grazing annually. Currently I am very happy with the grass/clover sward that is there. Careful management is required for the red clover. I feel it is very important to avoid compaction, maintain soil fertility at optimum levels and apply sulphur. I like to graze it at least once a year while ensuring no poaching occurs and avoid carrying heavy covers over the winter.

Tom O'Connell

Soil Fertility

The Teagasc Soil Fertility Report 2024 states that of the 69,218 samples tested nationally in 2024, only 17% showed optimum fertility across the three parameters of pH, Phosphorus (P) and Potassium (K).

At an individual macro nutrient level the report also shows that 52% were optimum for P, 57% optimum for K and 47% optimum for pH.

As part of the Joint Programme, soil analysis is carried out across the demonstration farms every two years. Table 12 shows the most recent soil analysis results of the demonstration farms.

Significant effort has been made within the group to improve soil fertility using their fertiliser plans to identify the deficient paddocks and target with the appropriate nutrients. It is a job that is never done and needs constant work to maintain levels and correct levels that have fallen since the last analysis.

Low Emission Slurry Spreading (LESS) which reduces the loss of Nitrogen (N) gases into the atmosphere, is being used on all of the farms. This is improving nutrient use efficiency. In 2024 the group applied an average of 121 tons of lime per farm.

Table 12: *2024 Soil Sample Analysis results for the Demonstration Farms (whole farm including rented ground and marginal land)*

Name	% of soils with optimum soil fertility	% soils PH optimum	% Soils optimum P	% soils Optimum K	2024 Lime spread (tonnes)
Tom O Connell	82	92	99	86	272
Jimmy Cotter	80	100	80	100	60
Sean Moher	26	64	57	53	93
Raymond Goggin	45	94	90	53	21
Tim & Mary Leader Ltd	16	57	73	73	226
Tim O Riordan	11	33	35	70	183
Joe Morrissey	34	54	89	79	52
Sean Barry	33	62	55	46	153
Mark Lonergan	44	51	100	99	60
John and Brendan Walsh	64	82	89	84	93
Demo Group average	**43.5**	**68.9**	**76.7**	**74.3**	**121**

Protected Urea

Table 13: *Fertiliser Nitrogen products used by the Dairygold Teagasc Demonstration Farms in 2024*

Name	% Chemical N applied as Protected Urea	% Chemical N applied in NPK mixtures
Sean Moher	73%	27%
Tim O'Riordan	89%	11%
Sean Barry	98%	2%
John & Brendan Walsh	94%	6%
Jimmy Cotter	95%	5%
Tom O'Connell	100%	0%
Mark Lonergan	98%	2%
Tim Leader	78%	22%
Joe Morrissey	71%	2%
Raymond Goggin	100%	0%
Average	**90%**	**8%**

I've been using NBPT Protected Urea since 2018 and had no major problems. In 2024 there was some challenges around striping but I think we have overcome this issue. I feel Protected Urea is one of the most important tools we have available to us to achieve our emissions targets and we need to sort the concerns with it rather than abandon it.

Raymond Goggin

Somatic Cell Count (SCC)

As a result of new regulatory changes which came into effect in January 2022, the blanket use of antibiotic dry cow therapy is no longer allowed. This practice has a higher risk of increased SCC in the subsequent lactation if not done correctly. For herds to be suitable for selective Dry Cow Therapy (sDCT) it is important to maintain monthly bulk tank SCC at an absolute maximum of 200,000 cells/ml.

In June 2023, four of the demonstration herds had bulk milk SCC hovering around 200,000 cells/ml. Don Crowley, Teagasc Milk Quality Specialist, visited each of the four farms in July 2023 to assess milking routines and management practices. The milking machines were also tested.

The main recommendations included:

- Prompt treatments based on regular milk recording
- Monitoring of bulk milk results using the CMT to quickly detect sub-clinical mastitis
- Good record keeping to ensure accurate selection of cows suitable for sDCT

The remedial actions taken by the demonstration farmers in 2023 and 2024 resulted in the group average SCC of milk supplied reducing by 25% in 2024 versus 2023.

Table 14: *Average SCC of Dairygold Teagasc Demonstration Farms 2021 - 2024*

Dairygold Demonstration farms SCC 2021 to 2024				
	SCC ('000)			
Year	2021	2022	2023	2024
Group Average	145	144	158	119

Biodiversity Audit

A biodiversity audit was carried out on all of the demonstration farms in autumn 2024. Only the owned land was surveyed. Table fifteen below shows the results. AFS is the Average Field Size. A field is deemed an area of land surrounded completely by a biodiversity boundary which includes hedgerows, watercourses, stone walls and drains. A target here is below 5.0 Ha on average. Escaped hedgerows are hedgerows which are not topped. This also includes tree lined hedgerows.

Native Hedgerow planted by Joe Morrissey in spring 2021 photo taken spring 2025

Table 15: *Biodiversity assessment carried out on the Dairygold/Teagasc Demonstration Farms*

Biodiversity assessment carried out on the Dairygold/Teagasc Demonstration Farms					
	AFS(ha)	Total Length of Hedgerow (m)	Metres of Hedgerow/ Ha	% of escaped Hedgerows	Biodiversity %
Jimmy Cotter*	3.9	9,427	202	68%	4.1%
Joe Morrissey	4.9	10,585	196	22%	6.8%
Sean Barry	2.5	10,929	270	51%	5.4%
Tom O'Connell	6.7	27,260	170	77%	5.7%
John & Brendan Walsh	3.9	14,017	210	30%	5.2%
Tim O'Riordan	2.7	14,448	257	55%	5.1%
Tim Leader	4.1	12,486	204	95%	7.9%
Sean Moher	3.0	12,334	246	78%	4.9%
Mark Lonergan	2.4	13,373	274	26%	5.7%
Raymond Goggin	4.6	6,152	190	34%	3.8%
Average	**3.9**	**13,101**	**222**	**53%**	**5.5%**

**Note - JC farm, total length of stone walls was used instead of hedgerows.*

Teagasc/FBD Environmentally Sustainable Farmer of the year 2024

Biodiversity in the country as a whole is not bad but I think it is important to protect and improve what we have. Start by having that conversation with your hedgecutter to improve the existing hedgerows on your farm.

John Walsh

John and Brendan Walsh won the 2024 Teagasc / FBD Environmentally Sustainable Farmer of the Year award.

While their focus is on running an efficient and profitable dairy farm, they are also passionate about looking after the environment. Chemical Nitrogen (N) use has reduced substantially since 2020. The Nitrogen balance on this farm was 150 kilogrammes of N per hectare in 2024. Low N balances significantly reduce the risk of nitrate leaching to waterways on farms.

Native trees are planted every year on the farm and hedges are allowed to grow up, and out, to provide shelter for stock, maximise their value for biodiversity and capture carbon.

Picture on the top right shows one of the hedges after being trimmed in autumn 2024. The picture on the bottom right taken in autumn 2024 shows a paddock fully reseeded (perennial ryegrass and white clover) in 2021 which received zero chemical N in 2024.

Conclusion

2024 was a challenging year both physically and mentally for farmers.

However, despite the significant challenges encountered, the Dairygold demonstration farms performed well. The farmers on the programme have made a number of adjustments on their farms to ensure even greater ability to withstand shocks to the system should they arise in future years. These include improving grazing infrastructure to facilitate grazing during more challenging periods, adjusting fodder budgets to ensure sufficient reserves of high quality silage and aligning milking platform stocking rates to the pasture production profiles of the farm.

Having had good experiences with clover prior to 2024, a key learning from the year is that it is important to assess clover content from April to plan fertiliser applications. Flexibility is important; where clover content isn't sufficient to reduce chemical fertiliser applications, chemical fertiliser should continue to be applied. This may be at a reduced rate if there is clover present that can be encouraged or at full rate if clover content is poor.

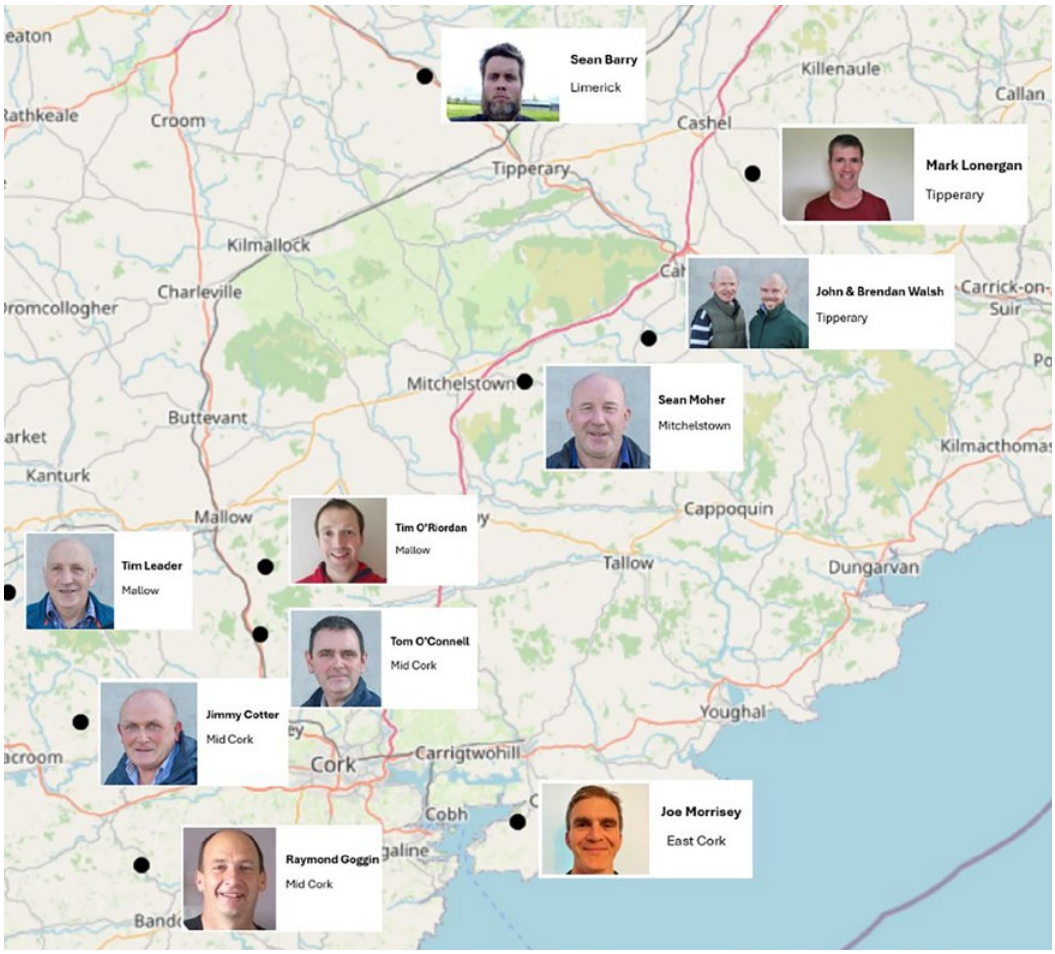
Breeding performance on the demonstration farms was excellent in 2024 despite the challenging year. This performance will allow long lactations that are aligned with the grass growth profile of the farm, helping to deliver high output of milk solids from a low-cost pasture diet. The integration of sexed semen into breeding programmes is working well without impacting on fertility.

Cost inflation has impacted on all farmers' financial situations. However, excellent technical performance has provided a buffer to these increases. Focusing on the fundamentals of grazing management from achieving excellent soil fertility to meeting grazing targets throughout the year maximise the grazed grass proportion of the diet to keep cost of production down. Maximising milk solids productivity through continuous improvement in breeding within the herds is also helping to buffer the increase in cost of production.

In summary, the implementation of technical research and best practice on the demonstration farms is helping to build long-term resilience in their businesses.

2021-2025 Teagasc Dairygold Demonstration Farmers photographed recently at their monthly meeting on the farm of Tom and Helen O'Connell, Inniscarra - Sean Barry, Nora O'Donovan, (Teagasc Demonstration Farm Co-Ordinator), Tim Leader, Tom O'Connell, Dan O'Mahony (Farm Manager), Mark Lonergan, Jimmy Cotter, Tim O'Riordan, John Walsh, Pat Barry, Sean Moher, Brendan Walsh (missing from the photo are Joe Morrisey and Raymond Goggin).

Dairygold Teagasc Joint Programme Demonstration Farms



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Golden Valleys, Growing Naturally

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