



Congratulations to Board Member Eoin Doorley from Birr who recently graduated with a Diploma in Corporate Direction. The programme was run by ICOS Skillnet, in association with UCC and ICOS. The key aim of the course is to improve the capabilities of directors and senior management in positively influencing the strategic direction and corporate governance of co-operative and Agri food companies in Ireland.

Dairy Health Certificates 2024

Each herd that supplies milk must be certified by your vet annually to meet specific animal health requirements as specified by the department of Agriculture, Food, and the Marine. The certificate must be submitted to Arrabawn Co-op each year

The recommended time to certify your herd is at your annual herd test which enables you and your vet to fully complete and sign the form while inspecting the cows. If you have misplaced your blank health Cert which was sent to you earlier this year by post, please contact your milk advisor.

Note: Arrabawn will not be in a position to collect milk from your holding from the 1st of January 2024 unless it has received the fully completed certificate.

1. On page 1, Veterinary Certification of Compliance the vet **MUST** complete the number of animals presented to him as milk yielding animals for certification.
2. On Page 3, herdowner Declaration of compliance, the herdowner must complete the number of animals presented as milk yielding animals to the vet for certification.
3. Please send a completed health certificate by the 31st of December 2023 to Arrabawn Co-Op Stafford Street Nenagh Co. Tipperary



Congratulations to Bernard Kelly who was the overall Cellcheck winner among the Arrabawn Co Op suppliers. Pictured above is Bernard being presented with his award at the recent Cellcheck awards in Killashee House.

One Step at a Time

The Signpost Programme dairy demonstration farmers are making progress in adopting the 12 Steps to Reducing Greenhouse Gas Emissions. Farmers participating in Teagasc's Signpost Programme are on target to reduce their emissions through a series of actions and adjustments to their farming systems. The Signpost Programme is designed to support and enable all farmers to farm more sustainably, and the role of the 120 demonstration farms taking part in the programme is to showcase technologies that can reduce gaseous emissions, and to provide a location for other farmers to learn.

The 12 Steps translates the mitigation actions in the Marginal Abatement Cost Curve into key actions at farm level. The baseline year for data collection for the Signpost demonstration farms was 2021, and Teagasc expects to track on-farm changes on the Signpost Farms over multiple years – at a minimum to 2025, for a five-year time series. The results referred to in this feature are for the first 24-month period and, as such, are initial indicators only of progression towards lower greenhouse gas emissions.

Progress and potential - On average, total greenhouse gas emissions for these farms was 974t CO₂-e per dairy farm. Carbon emissions Life Cycle Assessment (LCA) per kilogramme of product was 0.92kg CO₂ e/kg fat and protein corrected milk. Emissions per hectare were 10.4 t CO₂ e/ha. Considerable progress has been made on the Signpost dairy farms to implement the 12 Steps. There is more potential to further reduce total GHG emissions on the Signpost farms by further reducing chemical nitrogen use and increasing the proportion of their chemical N applied as protected urea.

1. Use protected urea

Apply protected urea instead of CAN/straight urea. These farmers are using protected urea as a source of more than half of their fertiliser nitrogen (N), but there is still scope to increase its usage. Availability was an issue in 2022.

2. Apply lime

Apply lime to fields identified as low pH. These farms were extensively soil sampled in late 2021 and early 2022, and the farmers have used the results to target lime applications, with 77 tonnes spread per farm on average (equivalent to 0.86 tonnes per hectare farmed) in 2022. It is important that an increase in the use of lime is matched by a decrease in chemical N, as that is where emissions savings occur.

3. Build or maintain soil fertility

Continue to use phosphorous (P) and potassium (K) fertilisers such as 18:6:12. Four out of ten soil samples had the correct soil pH, P and K. This is higher than is the case on a typical dairy farm (two in ten samples for 2022).

4. Use 100% LESS

Apply slurry in spring/early summer using Low Emission Slurry Spreading (LESS) technology. There has been complete adoption of LESS by this group of farmers. All dairy farmers sampled their slurry in 2022, allowing them to make informed decisions as to where and how much slurry to apply.

5. Reduce chemical N use by 30%

Apply lime, incorporate clover, and make best use of slurry/farmyard manure. These farmers have started the transition to a lower dependence of fertiliser N use, with fertiliser N usage 17% lower in 2022, and an average chemical N use of 170kg/ha. There is scope to further reduce chemical N use by incorporating clover on these farms as well as maximising the value of liming and slurry



application.

6. Better grassland management

Weekly farm walk, measure grass and extend grazing season. Signpost dairy farmers have a high level of grass utilisation; the target of 12t DM grass utilised/ha was exceeded by many of them last year.

7. Improve animal health

Create a herd health plan. Many different elements contribute to herd health, including lameness, mastitis, infertility, pneumonia, fluke, etc. Milk was produced with a low somatic cell count of 124,000 cells/ml on average.

8. Improve dairy herd quality

Use high Economic Breeding Index (EBI) bulls and increase herd EBI by >€10/year. Use sexed semen to accelerate genetic gain. The target on the programme was to increase herd EBI by €10 per year, which was achieved by the Signpost dairy farms.

9. Increase milk solids/cow

Milk record, cull poor cows and aim for 305 day lactation. There was a high level of technical performance on the Signpost dairy farms in 2022 with an average milk solids output of 498kg per cow and feeding 1,189kg concentrates per cow. Concentrate usage was high due to the drought conditions in 2022.

10. Reduce age at first calving

Calf heifers at 22 to 26 months. The average age at first calving was 24 months on these farms.

11. Finish cattle earlier

Use Dairy Beef Index (DBI) to produce earlier finishing cattle. Dairy farmers have a significant role to play in improving the quality of the dairy male calves available for finishing. The DBI of the beef sires used by the Signpost dairy farmers was on average €71 in 2022.

12. Incorporate clover

Incorporating 5kg/ha (2kg/ac) clover seed will replace up to 100kg/ha (80 units/ac) of chemical N/year. More than eight out of ten farmers (86%) have incorporated clover into reseedings in 2022, setting them up for further reductions in chemical N use. An assessment of clover content on these farms was made in 2023. Almost 50% of area farmed was assessed as having some clover. One third had high levels of clover, with similar amounts with medium and low levels.

ACKNOWLEDGEMENTS

The sustainability metrics for individual farmers presented in this article are generated by the National Farm Survey (NFS) team.

Teagasc's Signpost programme is open for business throughout the country. Twenty-one dedicated advisors are in place. Their sole mission is to help you to contribute to the emissions target reduction set for our industry.

This public programme will be available to all farmers. It will build on the network of Signpost Demonstration Farms by providing enhanced advisory and training support to farmers to commit to, select and implement climate and sustainability actions that will be appropriate and impactful on their farms. Participating farmers will be given the opportunity to commit to taking action for their farms.



AgNav – Know My Number – Make My Plan

A “Know My Number – Make My Plan” component is part of the new Signpost advisory programme, supported by AgNav the Sustainability Digital Platform, will allow farmers to see and understand their carbon emissions and sequestration profile as a baseline on which to act. A team of 21 Signpost climate advisors are here to support this programme.

AgNav is a programme that calculates the greenhouse gas emissions for a farm. It collates data from ICBF plus Bord Bia and uses Teagasc's life cycle assessment models to calculate the emissions produced on a farm. To find your emissions number, you need to sign up for the [Signpost Advisory Programme](#). With advisory support, farmers will make a plan to improve by adopting positive changes and technologies, and advisors will help them with the implementation of the plan and tracking of progress.

This will also create trust and build capacity for supporting the adoption of new technologies as they emerge. The ambition of the programme is to engage with 50,000 farmers between now and 2030. Use your phone to scan the image below to sign up for the programme.



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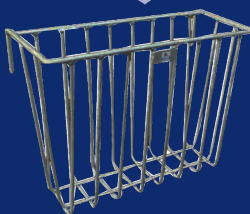
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Soil Sampling



- With increasing pressure and stocking rates, along with upcoming regulations on chemical fertilizers in agriculture next year, now, more than ever, it is crucial to update soil samples for your entire farm. Having soil indices and pH at optimum levels can increase grass growth by up to 20%.
- With the fertilizer register now in effect, it is important to establish your P limits. If no soil samples are present, an index of 3 for P must be assumed, and no P can be applied. Up-to-date soil samples allow for an accurate nutrient management plan to be put together, ensuring correct N & P limits.
- Now is the best time of year to take soil samples. Samples should be collected from ground that has not received any organic or chemical fertilizer for at least 12 weeks.
- Talk to your local branch or your sales advisor to organize soil sampling on your farm.



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Look at options to import organic manures on tillage farms

Climate Actions for December

Order your protected urea for 2024

Plant new hedgerows and trees

Organise your soil sampling now

Weigh finishing animals and heifers to ensure they are hitting ADG targets

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Protected Urea

Protected Urea is very welcomed news for Irish agriculture as it is a key technology for the sector in meeting its 25% reduction in GHG's emissions by 2030. It is seldom that a new technology costs less and delivers major environment benefits in reducing N losses. Extensive research in Teagasc and on farm use has shown the reliability of protected urea as a very effective N fertiliser source for Irish farming conditions. It delivers consistently on yield compared to nitrate based fertilisers (CAN 27% N) while significantly reducing nitrous oxide (N₂O) a powerful GHG and ammonia (NH₃) emissions thus improving the efficiency of applied fertiliser N.

Urea fertiliser is the most widely used N source in the world and protecting it with a urease inhibitor (NPBT / NPPT) firstly reduces ammonia N (NH₃) losses by up to 80% thus retaining more N to better match crop N demands during the growing

season. Secondly, by replacing nitrate-based fertilisers (e.g. CAN) with protected urea we reduce N₂O losses by 70%. This is a major ready to go technology in meeting out 2030 target, delivering a 3 to 8% reduction in GHG emissions on livestock farms.

Cost savings €€€!

Over the last 24 months fertiliser N prices have reach heights never seen before due to global unrest. This has resulted in a large price differential between protected urea and CAN, with urea significantly better value due to large volumes traded globally. Over the last 6 months, fertiliser prices have dropped month by month but remain high compared to pre global unrest. Average fertiliser prices to date in 2023 (table 1) show that Protected urea offers a 30% lower cost per kilo compared to

CAN (27% N). Take a 50ha dairy farm applying 210kg N/ha as Protected Urea compared to 150 kg N/ha as CAN gives a saving in fertiliser N costs of €7,980.

Table 1: Average price of fertiliser nitrogen in 2023

	CAN 27%	Standard Urea 46%	Protected Urea 46%
Kg N/tonne	270	460	460
€/tonne	€680	€750	€810
€/kg	€2.52	€1.63	€1.76

Retaining more effective N & Reducing N rates

Protected urea reduces N loss from 15% for standard urea to 3% thus retaining 12% more effective N. With reduced and more regulated chemical fertiliser N use, retaining more effective N in the soil allows adjustments to N rates while still maintaining yield compared to standard urea. Take an example 50ha dairy farm switching from applying 210kg N/ha as all Standard Urea to Protected Urea, N rates can be reduced by 12% equating to a reduction of 22kg N/ha giving a fertiliser farm N saving of €1,936.

Reducing farm emissions

By switching to 100% protected urea on dairy farms, total farm emissions have the potential to be reduced by 7-8% at a spreading rate of between 200 to 250 kg N / ha. The equivalent savings on total emissions on suckler farms is 1-2%, at a spreading rate of 60 to 80 kg N / ha. To achieve a 100% switch to protected urea the use of high P-K products such as 18-6-12 +S would be required to deliver balanced P, K & S nutrition. On-going research at Johnstown Castle is showing that fertiliser blends containing N with a high ratio of ammonium-N to nitrate-N (generally high P blends) are more stable and environmentally friendly. For example, the N form is 10-10-20 / 18-6-12 is mainly ammonium N resulting in a 40% reduction in N₂O emissions relative to CAN 27% N or high Nitrate – N based compounds such as 27-2.5-5 / 24-2.5-10.

More grass from less N

A long-term trial (8 years) at Johnstown Castle is consistently showing that the grass grown by protected urea has been greater than standard urea in 7 out of 8 years. Protected urea grew 13% more grass on average compared to standard urea. The additional yield is similar in magnitude to the extra effective N level delivered to the plant by protected urea over standard urea. CAN yielded 9% more than standard urea. At a time of more regulated chemical fertiliser N use moving from standard urea to protected offers the opportunity to reduce fertiliser N rates by up to 10%.

In Summary - Making the switch to Protected Urea delivers the following

- Reduce your fertiliser N costs by 30%
- Reduce N₂O & NH₃ emissions by 70 and 80%, respectively
- Reduce overall farm emissions by 7 to 8%
- Fertiliser blends such as 18-6-12 reduce GHG emissions by 40%
- Reduce farm N requirements (Switch from Standard Urea to Protected Urea)
- Protected urea grows 13% more grass over standard urea

Prep starts now for Spring calves!

Spring can be the busiest time of the year so getting yourself prepared as possible when the cows are dried off will save you time when calves hit the ground in January or February.

It is important that sheds in which calves will be born in or moved to are thoroughly disinfected prior to spring. Calves are born with zero immunity so care must be taken to protect them from diseases. Remember back to last spring, did you have an issue with calves getting sick? Now is the time to tackle those disease not when the calves get sick next spring.

Below are some things that will help with common diseases:

- Vaccines – Rota, Corona and Salmonella can all be vaccinated against.
- Bacterial diseases can be prevented through disinfectants.
- Ensure all milk feeders are washed, disinfected and teats changed.
- Water drinkers, hay racks, concentrates troughs are thoroughly cleaned.

Prepare a list of commonly used equipment in spring and ensure you are well stocked up and not panic buying when calving starts. Ensure you have the following ready to use and available:

- Calving Jack- clean and working efficiently.
- Calving Jack rope – clean and spare available
- Calving gloves
- Lubricant
- Calf Jackets
- Rehydration powders/tablets
- Bottles of calcium
- Naval spray
- Ear taggers – working correctly.
- Containers to store and freeze colostrum when needed.
- Calving gates – open and closing correctly, head gate working.

Calf Jackets are a very undervalued tool on many farms. Calf jackets are vital to use when you have a small, weak, or ill calf. The jacket will ensure that the calf remains warm and allow for a quicker recovery. A calf wears a jacket, all energy can be used to thrive and recover from an illness, rather than trying to keep warm. Having a few calf jackets on the farm will greatly help your calves next spring.

Farming for Water Quality – ASSAP

In recent years, there has been growing concern regarding the impact of pollution on water quality in Ireland.

As a country heavily reliant on agriculture, it is essential to address the potential pollution caused by the loss of nutrients such as phosphorous. Recognizing the seriousness of this issue, the Agricultural Sustainability Support and Advisory Programme (ASSAP) has taken the initiative to work with farmers in a free and confidential advisory service aimed at improving water quality.

ASSAP Farm Visits

The ASSAP farm visit provides farmers with valuable information about local water quality and the potential risks associated with the loss of nutrients, including nitrates, ammonia, and phosphorous. By assessing the specific requirements of each farm, the advisors can offer tailored advice and recommend measures to mitigate the loss of these nutrients to local waterbodies.

To aid in this process, the advisors use a mapping tool called www.catchments.ie. This tool allows them to identify risk areas on the farm where nutrient losses are more likely to occur. By visually analysing these maps, the advisors can recommend specific mitigation actions that can be taken by the farmers to limit the nutrient losses to the rivers or streams in their vicinity.

It's important to acknowledge that the success of these initiatives relies on the active participation of farmers. The cooperation and engagement of farmers are essential for the effectiveness of mitigation measures.

PIP Maps

The Pollution Impact Potential (PIP) maps act as a guide for the advisors, highlighting the areas where further characterization and engagement actions should be prioritized. By studying these maps, the advisors can identify the vulnerable zones that require immediate attention to prevent nutrient losses and reduce the pollution impact on water quality.

These maps are created by combining susceptibility maps with data provided by the Department of Agriculture, Food, and the Marine (DAFM) and the Central Statistics Office. The susceptibility maps take into account various factors such as soil type, land use, and hydrological conditions to determine the areas with the highest potential for pollution.

The PIP map for phosphorus (P) (see Figure 1.) shows the highest risk (Rank 1) of diffuse P losses from farmland by the dark blue areas of the map. These high-risk areas mostly consist of poorly drained soils that retain water longer making the land more saturated, which can lead to overland flow to rivers and streams. The lighter colours of the PIP-P map indicate a low potential for P loss.

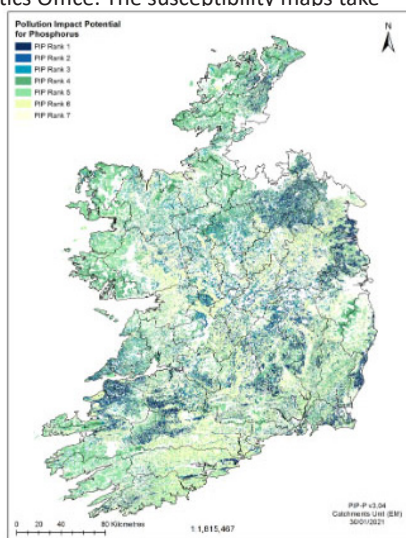


Figure 1. Pollution Impact Potential for Phosphorus (PIP-P).

What are Critical Source Areas?

Critical source areas (CSAs) are small, low-lying parts of farms such as field depressions or gullies where runoff accumulates. Runoff from CSA's carries sediment and nutrients to waterways. Identifying these areas on a farm is important to minimising sediment and nutrient loss through overland flow. Figure 2. Identify where water will flow under heavy rainfall across the land. In some of these areas, the flow path intersects drains marked by blue dots. The red flow paths have the highest surface runoff. Where these cross High PIP areas, expect higher P losses. The map can highlight areas to target phosphorus pathway interception actions e.g., hedgerows.

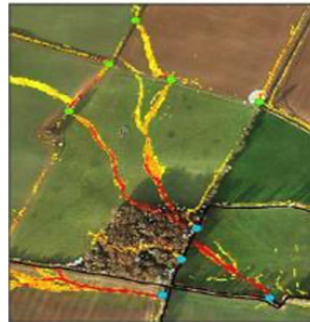


Figure 2. Thomas et al., STOTEN 2016 and Teagasc ACP.

Riparian margins

Having riparian margins along the riverbanks protects the water by creating buffer zones alongside them where little or no agricultural activity occurs. Riparian margins intercept the nutrient runoff and overland flow while also stabilising the riverbank. Ideally the wider the buffer zone the more effective the buffer will be in minimising nutrient loss, particularly in more sloped lands with a greater risk of overland runoff.

Riparian margins can be as simple as leaving a 2m grass buffer between the riverbanks. Margins can also contain trees and/or hedges. For water quality, hedgerows help with flood management as the root structure helps regulate water movements. They also help improve water quality by trapping silt and soil particles. These practical measures are designed to 'break the pathway' and prevent nutrients from entering the waterway.

You can find Pollution Impact Potential maps on catchments.ie/maps

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Please contact Paddy on 08 709 63 869 to get set up to milk record your herd in 2024.