

ENVIRONMENT

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Important update on soil sampling and fertiliser usage

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If you fall into category A, B, C, D or E below and do not meet your soil sampling requirements, you will be extremely limited in your ability to purchase fertiliser, and be subject to penalties if you exceed the chemical nitrogen (N) and phosphorus (P) fertiliser allowances. Taking soil samples and getting a fertiliser plan done based on these soil samples will give you the limits for chemical N and P allowed on your farm. Particular caution is required due to the changes in requirements for soil sampling (**Table 1**) and the introduction of the Department of Agriculture, Food and the Marine (DAFM) Fertiliser Database from January 2023, which will track fertiliser usage on all farms. If you fall into categories A, B or C you must have soil samples in place for 2023 – contact your Teagasc advisor for further information.

Category A – soil sampling for derogation:

- must soil sample every four years – new applicants are permitted to assume index 4 until

required soil analysis results are submitted but cannot use chemical P on the farm;

- maximum size of soil sample 5ha; and,
- if parts of your farm are in the Teagasc/ Environmental Protection Agency (EPA) high soil organic matter (OM) map (peat soils) then an OM percentage analysis is required (unless you accept that the parcel is >20% OM and adopt appropriate practices).

Category B – soil sampling requirements for grassland stocking rate (GSR) >170kg/ha (non-derogation farms):

- must soil sample for 2023 (were required for 2022) or assume index 4 for P until samples are taken to indicate otherwise;
- farms in this category can no longer use P if there are no soil samples on the farm that allow P to be used – there will be penalties if excess fertiliser is used; and,
- maximum size of soil sample 5ha.

Category C – GSR >130kg/ha and all tillage lands:

- must soil sample for 2023 or assume index 4 for P until samples are taken to indicate otherwise;
- farms in this category can no longer use P if there are no soil samples on the farm that allow P to be used – there will be penalties if excess fertiliser is used; and,
- maximum size of soil sample 5ha.

Category D – you were in GLAS (but below 130kg/ha GSR and not tillage land):

- most soil samples taken in the Green Low-carbon Agri-environment Scheme (GLAS) are no longer valid – samples taken before September 15, 2019 are out of date for 2023;
- farmers must soil sample for 2023 or assume index 3 for P until samples are taken to indicate otherwise; and,
- if you were in GLAS and fall into A, B or C above then read that category.

Category E – ACRES applicant:

- at least one analysis per 5ha of land is required up to a maximum of eight samples per holding;
- only samples taken on or after January 1, 2022 will be considered valid for tranche one participants;
- valid soil sample results must be uploaded on the Agri-Climate Rural Environment Scheme (ACRES) system by May 15, 2024;

- a farm map must be retained by the applicant, clearly indicating the location of individual fields and the soil sample locations; and,
- for further information see the ACRES specification document (pages 14-15 and 114-115) at: <https://www.gov.ie/en/service/f5a48-agri-climate-rural-environment-scheme-acres/> or search for “ACRES Specification Document”.

General information

- Soil samples are needed every four years (maximum 5ha/sample but recommended to be <4ha).
- The DAFM soil sampling programme is expected to be announced soon. It is likely to have a maximum of 4ha per soil sample and a maximum of 16 samples per farm. However, if you have a statutory requirement for soil samples it is advisable to proceed with getting samples taken immediately.
- It is expected that the ECO Scheme (accounting for 25% of your direct payment) will have an option for soil analysis, which requires samples for every 3ha. The requirement is for an S8 soil test (standard soil analysis plus organic matter).
- The Nitrates Action Programme 2022 included a 10% cut to chemical N allowance across all stocking rates from 2022. It also introduced a new N allowance rate for stocking rates below 130kg N per ha.

Table 1: Requirements for soil sampling.

Effective from	Soil sampling mandatory for
March 11, 2022	Those stocked at >170kg N/ha
January 1, 2023	Those stocked at >130kg N/ha
January 1, 2023	All arable land

MESSAGE FROM THE SIGNPOST PROGRAMME



Stop relying on chemical N

The first step to reducing emissions on all farms is to reduce reliance on chemical N fertiliser.

How does bagged N affect emissions?

Chemical N emits nitrous oxide (N₂O) when spread on land. N₂O is one of the main greenhouse gases we need to reduce emissions of and cutting the amount of chemical N you spread will help.



What do I need to do?

There are two elements to reducing emissions from bagged N:

- reduce the total quantity of chemical N you use on the farm; and,
- shift chemical N application from CAN and straight urea to protected urea.

Actions to reduce chemical N use without affecting production

1. Improve soil pH by applying lime.
2. Make sure phosphorus (P) and potassium (K) indexes are right on your farm.
3. Make best use of slurry by applying it from February to May and by using low-emission slurry spreading (LESS).
4. Incorporate clover into grassland swards.

Actions to increase use of protected urea (and reduce fertiliser costs)

1. Forward purchase protected urea for your early N requirement.
2. Plan to apply P and K through high P-K compounds such as 18-6-12 and 10-10-20 and apply more of your N as protected urea.

Reducing fertiliser losses to improve water quality



Improving nutrient use efficiencies is critical to help minimise impacts from diffuse N and P losses to water.

Farmers should always use a nutrient management plan (NMP) to help them decide how best to use the nutrients available on the farm. Follow the four Rs: right time; right place; right rate; and, right product.

Right time

The timing of the application of slurry or chemical fertilisers is very important to ensure the best use of the nutrient. This is especially important at the start of the grazing season. Farmers should apply fertilisers when soil temperatures are consistently at 6°C and rising. Don't spread fertilisers when soils are wet or where heavy rain is forecast in the next 48 hours. Aim to apply fertiliser to meet grass nutrient demands. This information will help to decide if you will get a good utilisation of the fertiliser application, thus ensuring that the nutrient is used by the plant and not lost to water.

Right place

Having an up-to-date NMP will greatly help to decide where to apply your fertilisers. Slurry should be used where soils have a low P and K index to help build up fertility. Other things to consider are soil pH and perennial rye grass content of the sward. Apply on drier fields and avoid application in critical source areas of the farm where nutrients can be lost through overland flow into the drainage network.

Right rate

The rate of application of the nutrient should meet the demand required by the crop. This is especially important in the spring/autumn periods of the grazing season. Growth rates

are typically lower at these times. There is a greater risk of nutrient loss as those applied may not be utilised and can leach or be washed away by rainfall.

It is also important to reduce/eliminate the application rates of fertilisers during times of drought, as restricted availability of water to plants reduces their ability to utilise nutrients applied. This increases the risk of nutrients being lost to waters when rain falls, as happened in the 2018 drought.

Right product

New products have become available to farmers in the past few years to allow them to make better decisions on what fertilisers to spread to ensure the greatest return on investment. Protected urea offers greater utilisation of N applied, and can also help reduce N emissions and nitrate losses to waters, while LESS also helps to ensure greater utilisation of N. Clover can play a part in reducing chemical N required, thus having an environmental benefit.

It is also important to remind ourselves to adhere to the requirements of the Good Agricultural Practice Regulations. Farmers must adhere to the relevant buffer zones when applying chemical and organic manures. Remember that the 5m buffer margin for slurry from a watercourse increases to 10m in the two weeks before and the two weeks after the closed period for the spreading of organic manures.