

Teagasc Notes for week ending Friday 19th March 2021



Water Quality Week

Water quality week is brought to you by Teagasc in collaboration with Dairy Sustainability Ireland and the Local Authority Waters Programme (LAWPRO). During the week, advice and information regarding water quality and actions to help farmers minimise losses of nutrients, sediment and pesticides to water will be shared.

Further information on water quality week is available on www.teagasc.ie/farmingforwaterquality, from your local co-op sustainability advisor and www.watersandcommunities.ie

Date	Theme
Monday 22 nd March	Water Quality and Catchment Management
Tuesday 23 rd March	Utilising Nitrogen Inputs Efficiently
Wednesday 24 th March	'Breaking the pathway' of Phosphorus and Sediment loss
Thursday 25 th March	Protecting Water from Pesticide losses
Friday 26 th March	Managing your Farmyard and Signpost Webinar



Reducing Nitrogen losses at farm level

Understanding how nitrogen (N) losses occur from the farm is critical to mitigating against this pressure. Losses occur where excess N fertiliser is applied above the crop requirement, especially when crop growth conditions are poor. Excess N in the form of nitrate in the soil not utilised by the grass or crop may be lost or leached to groundwater during heavy rainfall. Nitrogen does not bind tightly to soil and as a result is prone to leaching in free draining soils.

Early and late nitrogen applications at farm level are the highest risk to water quality. Grass growth in the early months of the year can vary. The response to N is low at this time which can result in poor recovery by the crop and increased risk of loss to water. Soil and weather conditions need to be monitored prior to applying N early in the early growing season.

N losses are minimal during the growing season due to reduced rainfall and a higher requirement by the crop. Care needs to be taken when spreading N in autumn time, as it is a period of increased rainfall and decreasing crop growth. The closed spreading season is the period of the year with greatest risk of N loss to surface and groundwater, with up to 45% of the years N lost during this period.

Ways to minimise N leaching on your farm:

- Minimise leaching by using the right product (e.g. protected urea), in the right place at the right rate and time

- Use low emission equipment (LESS) when spreading slurry. This will allow for a reduction in the amount of chemical N required and it will reduce ammonia losses to air
- Before spreading nitrogen or slurry, ensure there is no heavy rainfall forecast, soil temperature should be greater than 5.5 degrees and climbing, grass growth rates increasing and ground conditions trafficable
- Ensure soil fertility is optimum for lime, P and K. Follow your nutrient management plan (NMP). On moderate to highly stocked farms, aim for P and K index 3
- Maintain buffers near water courses when spreading slurry in line with regulation (at least 5-10m)
- Soil sample regularly and update your NMP
- Ensure soil is not compacted, this will allow the root system of plants to access and absorb available nutrients readily
- Maintain green cover to absorb excess N. Tillage farmers should consider sowing catch/cover crops to avoid soils lying bare in Autumn and Winter



Nitrogen Use Efficiency (NUE)

Nitrogen Use Efficiency is a relatively new term. NUE calculates all N farm inputs vs the farm outputs (milk, meat, crops). N input sources on your farm typically come from chemical fertiliser, purchased feeds (concentrates and forage) and organic manure. Nitrogen use efficiency on livestock farms across Ireland is typically 20 -25% at present, this means 20 - 25% of the N inputs on the farm are captured in farm products sold. Improving this figure, will reduce losses to water. The target is to increase NUE to 35% on grassland farms.

What can farmers do to improve NUE?

- Implementing the above measures
- Reduce use of chemical N through better use of slurry & use of clover
- Improving grass growth and utilisation
- Feeding less concentrates and/or lower protein concentrates, particularly during the grazing season

Improving NUE has many opportunities not only to improve water quality by reducing nitrogen losses through leaching, but also by reducing costs and increasing profitability at farm level.