

Teagasc Notes for week ending Friday 27 August 2021

Get your lime ordered now!!

The autumn is a critical window to get lime out on the farm. Farmers availing of a Nitrates Derogation must apply lime before the end of the year. Apart from regulations, applying lime this autumn is a “must do” investment on your farm. Applying lime this autumn can reduce your fertiliser costs in 2022, grow more grass for grazing, fill your silage pits or increase the number of bales of silage saved in 2022. The target is to apply lime to reach a soil pH of 6.3 for optimum grass production.

Once lime is applied and is washed in it starts to adjust soil pH. At least 35% of ground limestone (350 kg/tonne) has a particle size < 0.15mm. This component of the lime is fast acting and very reactive and will start working immediately (0-6 months). The remaining 65% lime (650 kg/tonne) will be broken down in the soil in the medium term (6-24 months) and helps to maintain soil pH levels in the longer term until the soils are re-sampled in year 4-5.

Research shows that applying lime to acidic soils increases grass production by 1.0t DM/ha. On a drystock farm this is valued at €105/tonne DM and €180/t DM on a dairy farm. An application of 5t/ha of ground limestone to correct soil pH represents a cost of €25/ha/year over 5 years. The return on investment from lime gives €4 to €7 worth of extra grass for every €1 invested in lime.

Once fields have been grazed-off and grass covers are low, it is an ideal time to apply lime. Identify blocks of land that require lime, for example this could require ordering a load of lime (20t) after each grazing rotation to correct soil pH (covers approx. 10 ac @ 2t/ac lime application rate). Aim to avoid high grass covers > 800kg DM/ha. Ideally, apply lime to low grass covers to avoid residues. Rainfall will wash off most of the lime from the grass. Where a small amount of lime remains on the leaf, it will not affect grazing animals.

Soil types with a high organic matter content or peat soils may be more prone to poaching during wetter periods of the year. Liming these soils to neutralise acidity and raise pH will create favourable conditions for biological activity (e.g. grass roots, earthworms, etc...) and the release of the nutrients stored in the organic matter. A “little and often” approach should be used when liming these soils to improve soil pH in stages over time. Don't exceed 5t/ha in a single application or apply split applications (2.5t/ha) over a number of years.

Leave sufficient time (up to 3 months in dry weather) between applying lime and closing for silage for the lime to be fully washed into the soil. If lime is transported to the silage pit or picked up in baled silage, it may prevent good preservation of the silage.

Spreading cattle slurry on freshly limed land, where the lime has not had sufficient time or rainfall to be washed into the soil, can result in a loss of up to 50% of the available slurry nitrogen. To minimise these losses from slurry, apply cattle slurry first and then apply the lime 7 to 10 days later.

For urea, nitrogen losses (ammonia-N volatilisation) may occur where straight urea is applied on recently limed land. To avoid this, apply urea first and apply the lime 7 to 10 days later to reduce the risk of N losses. However, where protected urea is being applied, early research work indicates that it is safe to apply protected urea to fields that have been limed recently.

Soils with high Molybdenum (Mo) status may increase the risk of inducing a copper deficiency in grazing animals. On these soils increasing soil pH above pH 6.2 increases the availability of Mo in the soil and higher uptake of Mo by actively growing grass. Where farms are affected by high Mo soils maintain soils at or below soil pH 6.1 - 6.2. Alternatively, apply lime as recommended and supplement animals with copper.