

GRASSLAND ADVICE ON LIMING FOR BEEF FARMS

THE BENEFITS OF LIMING

- Increase grass production annually.
- Release up to 80kg N/ha/year.
- Unlock soil phosphorus & Increase the response to freshly applied N, P & K.

Lime is a soil conditioner and controls soil acidity by neutralising the acids generated from artificial N use and rainfall.

Soil pH has a large influence on soil nutrient availability. Aim to maintain minerals in the range pH 6.5 to 7.0 and peat soils pH 5.5 to 5.8 for most readily available.

The Impact of soil pH on nutrient availability on a mineral soil

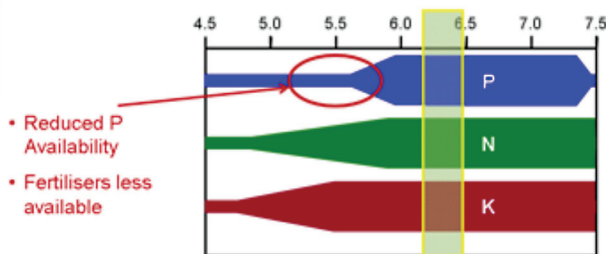


Figure 1:- Soil pH <6.0 will reduce the availability of soil N, P & K and the response to applied nutrients

IMPORTANCE OF SOIL pH FOR GRASS PRODUCTION

- Maintaining soil pH in the optimum range will increase grass production by up to 1.5t DM/ha.
- Correcting soil pH from 5.5 to 6.3 increased grass production by 1.0 tDM/ha (See figure 2).
- The application of 5t/ha ground limestone produced similar grass yields compared to the application of 40 kg/ha P fertiliser alone.
- The addition of lime + P fertiliser in combination produced the largest grass yield response (1.5 t/ha more grass than the control in the season of application).
- Lime increases the availability of both stored soil P and freshly applied fertiliser P.

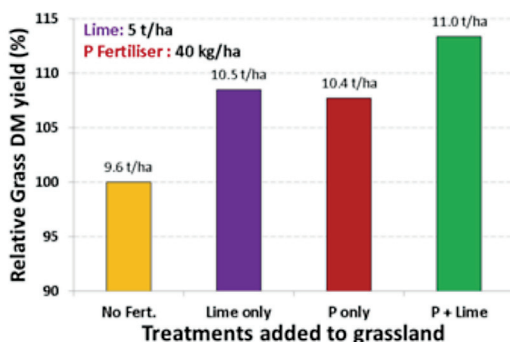


Figure 2:- Relative grass DM yield response in grassland treated with Lime (5 t/ha of lime), P fertiliser (40 kg/ha of P), and P + Lime over a full growing season (No Fert. = No P, No Lime)

RETURN ON INVESTMENT (ROI) FROM GROUND LIMESTONE USAGE

- Research shows an average grass production response of ~1.0t/ha from lime alone.
- This is worth €105/tonne.
- An investment of €25/ha to maintain soil pH in the optimum and returns €105/ha.
- This represents a return of €4 for every €1 invested in lime.

ADVICE ON SPREADING LIME

How much lime?

- Test soils on a regular basis (every 3 to 5 years) to determine lime requirements.
- Only apply lime based on a recent soil test report.
- Don't exceed 7.5t/ha in a single application.
- Application rates >7.5t/ha, apply 50% now & remainder in 2 years.

When?

- Prepare a farm liming plan.
- Lime can be spread all year round.

How often?

- Apply lime as per the soil test report.
- On very acidic soils apply 50% now and remainder in 2 years' time.
- Apply lime to 20% of the farm annually.

Which lime to use?

- Calcium ground limestone is most common.
 - Fast acting and rapid pH adjustment.
- Magnesium (Dolomitic) ground limestone is available.
 - Slower to react but higher liming value.
 - Useful on high Mo soils.
- Granulated Limes
 - Finer lime (less than 0.1 mm particle size) and very reactive.
 - Apply as maintenance product where soil pH is in the optimum range.
 - Consider costs over a 3 to 5 year period.



Lime & high molybdenum soils

- Soils with high Mo status give rise to copper deficiency in grazing animals.
- Increasing soil pH increases Mo availability.
- To reduce elevated Mo levels maintain soil <pH 6.2.

Lime & slurry /urea

The type of N in slurry and urea is ammonical N and prone to loss if applied to freshly limed soils. To avoid N loss the following is recommended:

- Leave 7 days between applying urea / slurry application and applying lime afterwards.
- Leave 3 months between applying lime first and following with urea / slurry application.