

Liming Materials

Liming materials should be purchased on the basis of price relative to the Neutralising Value (NV), the relative ability of the material to neutralise acid soil and the fineness of the products. The fineness of the product determines the speed of reactivity, the finer the product the more rapid the rate at which neutralisation occurs.

Calcium limestone has a typical neutralising value of between 50-55% N.V and Magnesium Limestone has a typical N.V of 56%.

There are many products available which have liming potential as well as offering other nutrients and minerals. These can be by-products from other processes such as paper crumble or steel works slag. These can be utilised as a fertiliser as well as a liming material. When comparing these products the relative value compared to neutralising value should be considered as well as the value of any additional benefits.

Granular Liming materials.

Granular Limes are an agglomeration of very finely ground and/or micronized particles of Calcium or Magnesium Carbonate usually with at least 90% passing a 150 micron sieve. The powder is formed into granules with the addition of a binder which 'cements' the powder for storage, transportation and application, but which dissolves when applied to the soil and in the presence of moisture.

The lower particle size ensures a high reactivity value however the neutralising value is similar to bulk lime. These products are designed to be used in a little and often approach and are not suitable for longer liming rotations. The main advantages and limitations to consider when using these products are listed below

Advantages

- High Calcium Carbonate Content (98%).
- Very Fine composition providing High Reactivity (>98%)
- Fast Acting
- Lower application rates
- Convenience Farmers own application using standard fertiliser spreader
- Timing - as/when required
- Ease of application – on bare land or down tramlines
- Spot treatments
- Suitable for difficult or steep ground not suitable for conventional equipment
- Regular granule size/shape for accurate application

Limitations

- Whilst fast acting the Neutralising Value (50 – 55NV) is similar to natural bulk limes and cannot provide similar long term pH correction throughout the whole soil/rooting zone.
- Higher manufacturing, on-farm costs
- Not suitable for longer term liming rotations 3 – 5 years
- On farm application costs have to be considered in addition to purchase price
- Lower application rates will not work throughout the whole soil rooting zone

Digestate

With an increase in the number of anaerobic-digesters more farmers are using digestate as a fertiliser. Some points to consider before using digestate on farm:

- Digestate products must be PAS110 accredited before being used on farm
- If they are not PAS110 accredited the product must be approved by SEPA (paragraph 7 exemption must be applied for)
- A copy of a **recent** analysis must be obtained and kept for your records
- No livestock should graze the field within 3 weeks of application to meet QMS standards
- Harvest interval of 3 weeks also applies to grassland
- All regulations regarding slurry cover digestate too i.e. minimum spreading distance of 10m from watercourses
- You must not spread digestate on frozen or waterlogged ground.
- Digestate should not be mixed in a store with slurry. Mixing digestate with slurry void's the PAS110 accreditation deeming the product to be a waste once more
- Nutrient values of digestate should be considered and rates should be calculated based on nutrient budgeting principles.
- Consider whether storage may have diluted the nutrient value
- Although it is low cost there is a high cost of haulage as it is mostly water
- As with slurry application rates should never exceed 50m³/ha in one application

Typical Digestate Values

Typical nutrient values for digestate compared to Cattle Slurry from SAC Consulting technical note. Based on average straight prices for fertiliser a relative value/m³ has been calculated.

	Kg/m ³				
	DM	N (readily available)	P	K	S
Cattle Slurry	6%	2.6 (1.2)	1.2	3.2	0.7
Digestate	4%	5(4)	0.5	2	0.4

As with slurry applications should be carried out to best practice to minimise nutrient losses. Losses of nitrogen will be minimised when applied to a growing crop. Method of application should also be considered to minimise nutrient losses. See SAC Technical Note TN650 for more info.