

Did you know?

How Ag Lime Supercharges Your Soil

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Adding agriculture lime to soil not only adds mineral calcium for plants, but it also changes soil structure, helping with drainage and improving the soil microenvironment, as well as changing pH, helping to release essential nutrients. It is a cheap and simple way to naturally help reduce your environmental impact

Why this matters:

- Calcium is needed by plants to help with cell wall strengthening
- A pH of 5.5 to 6.5 is desired by most plants for normal plant function.
- A pH of 5.5 to 6.5 helps to release essential nutrients which may be being held tightly to soil aggregates, this means deficiencies can be overcome and fertiliser use can be reduced.
- Low pH increases the availability of toxic elements such as Aluminium
- Calcium helps to flocculate soil particles, helping to create bigger pores in the soil which increases aeration and drainage
- A pH of 5.5 to 6.5 is desirable for microorganisms in the soil. These organisms help to release nutrients from organic matter, help to create structure in soil, improve aeration and help with biodiversity.

How to Apply it:

Lime can be applied at any time, but it is advisable to add lime in the autumn. Ag lime can be bought in bags for small areas and spread by hand. Or on farms it is often spread by fertiliser spreading trucks, or on hilly sites by topdressing aeroplanes. On farms lime is often added every second or third year, a soil test is best completed in order to find out exactly how much lime is needed per hectare to lift pH.

'A handy rule of thumb is that 1 tonne/ha of good quality lime i.e. 80% CaCO₃ or better will raise mineral soil pH by 0.1 units.' (Fertiliser Association, 2019).

Additional Notes:

Calcium Carbonate (Lime) reacts with the Acid ions H⁺ neutralising it.

Sandy soils tend to have a lower reaction rate to Ag lime than clay soils.

Legumes in pasture can decrease pH and so can sulfuric based fertilisers. It is important to get a soil test done regularly.

Resources: Fertiliser Association (2019) *Lime use on New Zealand Pastoral Farms*; [Lime-Use-Booklet-2019.pdf](#)

Want to learn more? With a degree in [Earth and Environmental Science](#), or the [Bachelor of Horticultural and Plant Systems](#), you can delve deeper. Contact Bronwyn Dyer if you have further questions on: b.dyer1@massey.ac.nz

Some career ideas using this knowledge: Farmer, Grower, Fertiliser companies, Agronomist, Ecologist, Environmental advisor, Gardener, teacher, Policy Advisor Government, Soil scientist, Plant Scientist

Do Now: In a paragraph explain how adding lime is better for the planet and plant growth.

