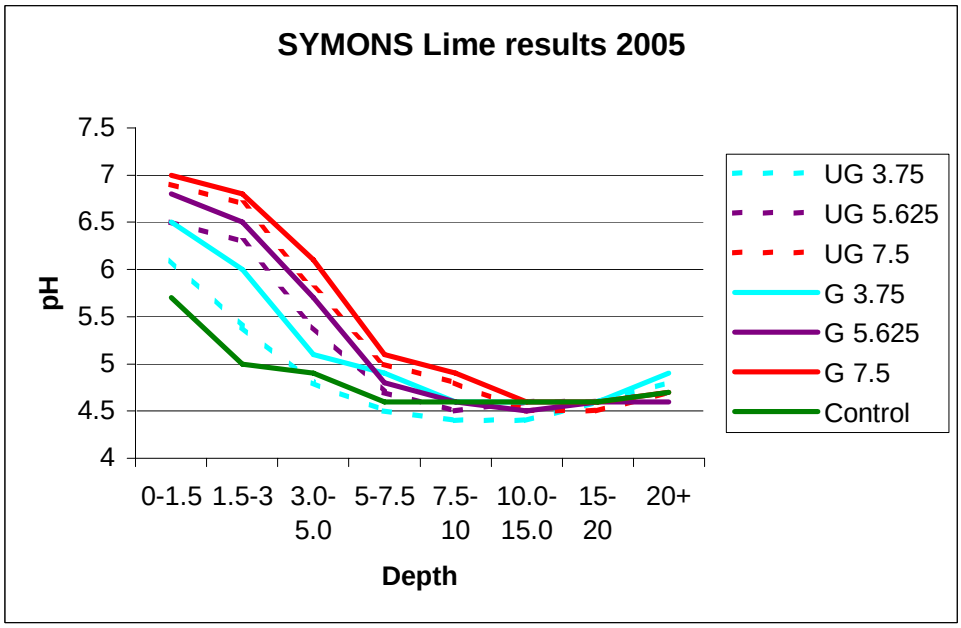
Does Grinding Limesand Increase Its Effectiveness?



Background

These trials looked at grinding our local limesands to see if it made them more effective. Whilst the application of limesands certainly works, if we can make them more effective we may be able to reduce application rates, and if the limesands are finer they may move more readily through the soil profile and increase the pH in our acidic sub soils.

What was done

Trials were set up on the properties of R. & R. Benney, G. Nutt, and J. & J. Symons in 2004. A mix of Little Sahara and Howard's Pit limesand was used. The application of limesand ground to a fine powder-like consistency was compared with the application of unground limesand. Rates applied varied from 3.75t/ha up to 7.5t/ha.

Results

Preliminary results in 2004 indicated that:

- the application of ground limesand increased the pH more than the same rate applied in an unground state
- the ground limesand moved down through the soil profile more rapidly than the unground limesand.

On average, the higher application rates of ground limesand increased (in 6 months) the pH down to a depth of 7.5 cm and the highest rate of 7.5 t/ha had an impact down to 10cm in soil depth. The unground limesand (at the same rate of application) only increased the pH to a depth of about 5 cm.

All sites were re-analysed in 2005 and showed that:

- the ground limesand was more effective at increasing pH than an application of the same rate of unground product (ie ground limesand at 7.5t/ha increased the pH more than unground lime applied at 7.5t/ha)
- neither the ground nor unground product had any impact on soil pH levels below a soil depth of 10 cm.

In 2004 almost all the ground treatments were more effective than the unground (ie

ground limesand applied at a rate of 3.75t/ha was more effective than unground applied at 7.5t/ha). However, in 2005 the higher application rates of unground limesand were more effective than the lower rates of ground limesand ie unground limesand at 5.6t/ha was more effective than ground limesand at 3.75t/ha. Therefore, it appears to be more cost effective to apply higher rates of unground limesand than to apply lower rates of ground limesand.

For further information contact

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Take Home Message

- Grinding the limesand does make it more effective (ie increases pH more rapidly) and increases pH at a greater soil depth compared with using the same rate unground.
- However we can get the same result from simply applying higher rates of unground product. Ultimately it comes back to cost effectiveness.
- To make it worthwhile applying ground product (and overcoming some application difficulties ie the stuff blowing away!) we will need to get grinding costs down to less than the cost of about 2t of lime or about $14/t.

