



AB LIME

TRIAL INFORMATION

And what it means to you

Achieve the best results with
Southland's highest quality lime

POSITIVE PASTURE PRODUCTION

The following trial results show that lime is more quickly available (in 83 days) than commonly thought and has positive benefits for pasture production.

Extensive trials in conjunction with Massey University Fertiliser & Lime Research Centre were completed at Winton and Browns in Southland.

Three lime particle sizes were applied and compared to a no-lime control block – this series being replicated four times and arranged in a randomised block design.

During the twenty-two month trial five batches of analysis were undertaken on each individual block. These field trials established effects of different particle sizes when applied at a rate of 2 tonnes per hectare on dry matter yield and soil pH.



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TRIAL SPECIFICATIONS:

Date:	Undertaken 15 August 2000
Location:	Browns site, Winton
Initial pH:	5.7 (slightly below the soil pH range of 5.8-6.1 considered optimum for pasture)
Period of trial:	22-month duration
Control:	No lime applied
Application:	2 tonnes/ha

SUMMARY

AgLime 90 has a combination of particle sizes. The majority are fine (approx. 40% <0.25 mm) and dissolve within 83 days increasing soil pH. The larger particles within AgLime 90 sustain dissolution over longer periods.

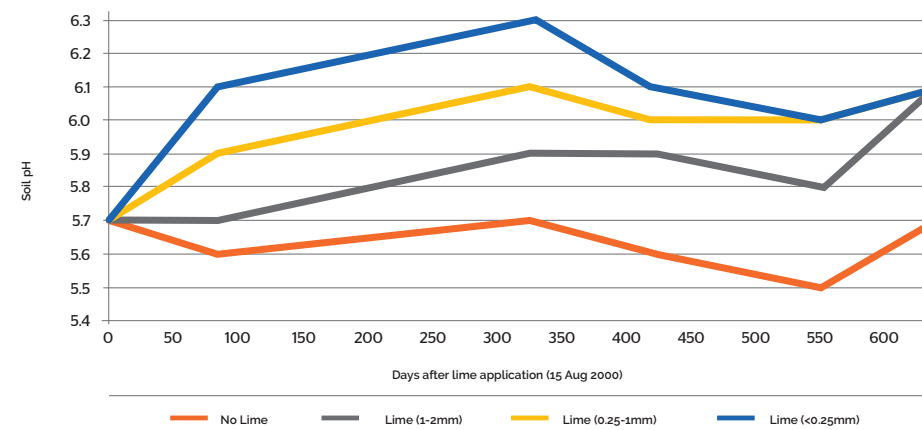
The trials showed an increase in dry matter production of 18% or 2000kg DM/ha which resulted from an application of 2 tonnes per ha. The benefits from such an application are expected to continue for 2 years.

For a dairying operation the increased pasture produced and consumed would relate to an increase of 105kg MS/ha (feed conversion 19:1 used).

For a sheep and beef operation increased pasture produced and consumed would related to an increase of 200kg meat liveweight per hectare (feed conversion rate 10:1).

A smart investment in applying AgLime 90 can produce real results. Soil pH and exchangeable calcium are increased to levels considered optimum for pasture production. Premium pastures, increased dry matter yield provides you with strong, healthy livestock and increases your returns.

EFFECT OF DIFFERENT LIME PARTICLE SIZE FRACTIONS ON SOIL PH



All three lime particle size fractions significantly increased soil pH compared to the control. The change in soil pH results indicate that it is likely that the <0.25 mm lime particle size fraction has achieved near complete dissolution in less than 83 days, the 0.25-1mm fraction between 83 and 329 days and the 1-2mm fraction by 637 days after lime application.

Finest particles (< 0.25 and 0.25-1 mm)

- Increased soil pH to greater than 5.8 in less than 83 days after application
- Maintained soil pH above 5.8 throughout the duration of the trial.

Finest particles (< 0.25)

- Achieved a pH change of above 0.5 of a unit within 83 days
- Increase in soil pH was maintained above 0.4 of a unit throughout the trial.

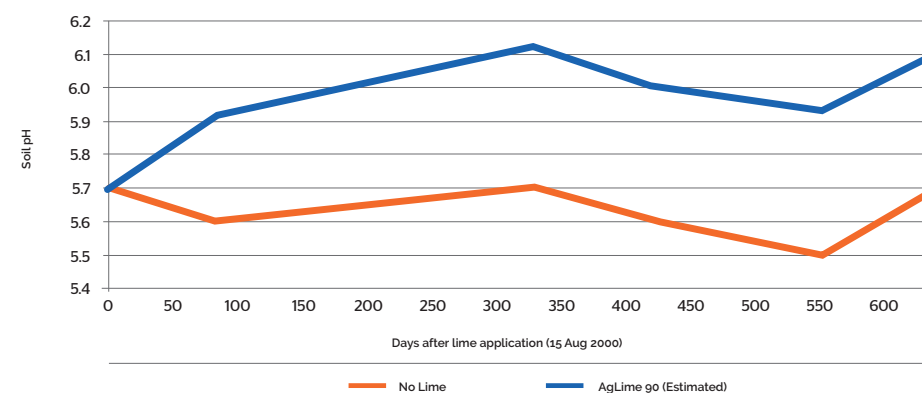
Fine particles (0.25 - 1mm)

- Took longer to reach the maximum change in soil pH compared to the <0.25 mm fraction
- Achieved a change in soil pH above 0.4 of a unit between 83 and 329 after lime application
- Increase in soil pH was maintained above 0.35 of a unit throughout the trial.

Coarsest particles (1-2 mm)

- Increased soil pH to greater than 5.8 between 83 and 320 days after application
- Maintained pH above 5.8 for the trial duration
- Took longer to reach the maximum change in soil pH compared to the two finer fractions
- Effect on the change of soil pH increased gradually over the trial and achieved its highest level (above 0.4) at the last sampling time (637 days)
- At last sampling there were no significant differences between the effects of the three lime treatments on change to soil pH.

ESTIMATED EFFECT OF AGLIME 90 ON SOIL PH

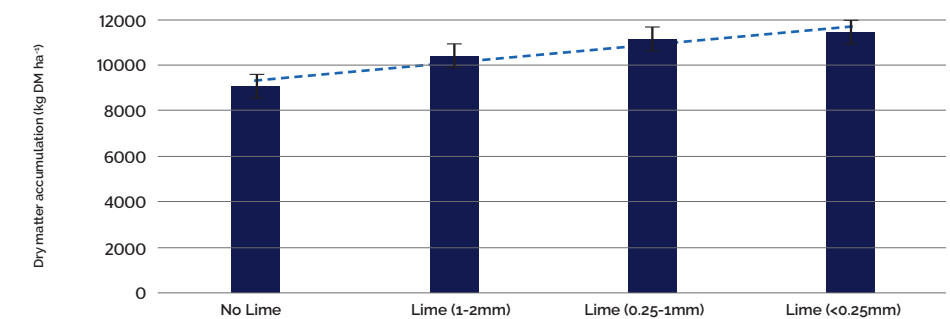
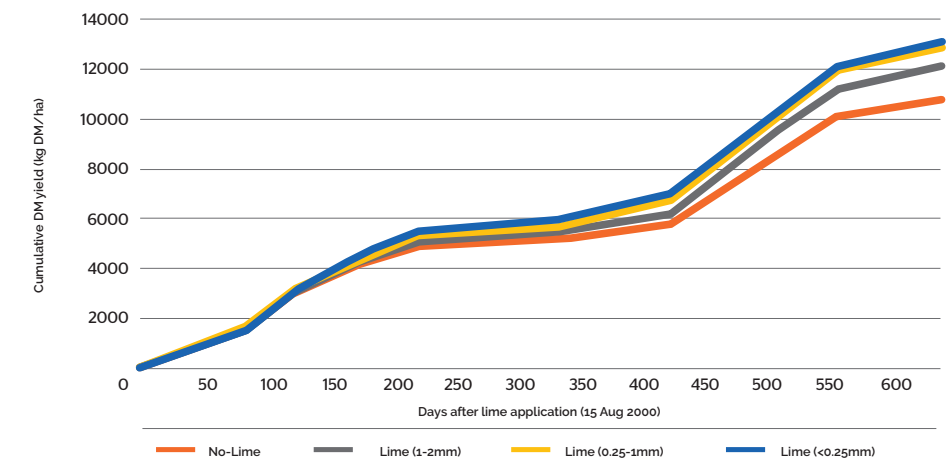


The effect AgLime 90 on soil pH is a weighted average estimated from the effect of the three particle size fractions used at the Browns site.

AgLime 90 is estimated to have increased soil pH from 5.7 to above 5.9 in less than 83 days and maintain soil pH at a level between 5.9 and 6.1 throughout the remainder of the trial duration.

The increase/change in soil pH for the AgLime 90 treatment over that of the no-lime control treatment is estimated to be 0.34 in less than 83 days after lime application. For the remainder of the first 22 months after lime application the AgLime 90 treatment is estimated to maintain a change in soil pH at between 0.41 and 0.47.

EFFECT OF DIFFERENT LIME PARTICLES SIZE FRACTIONS ON PASTURE DRY MATTER YIELD

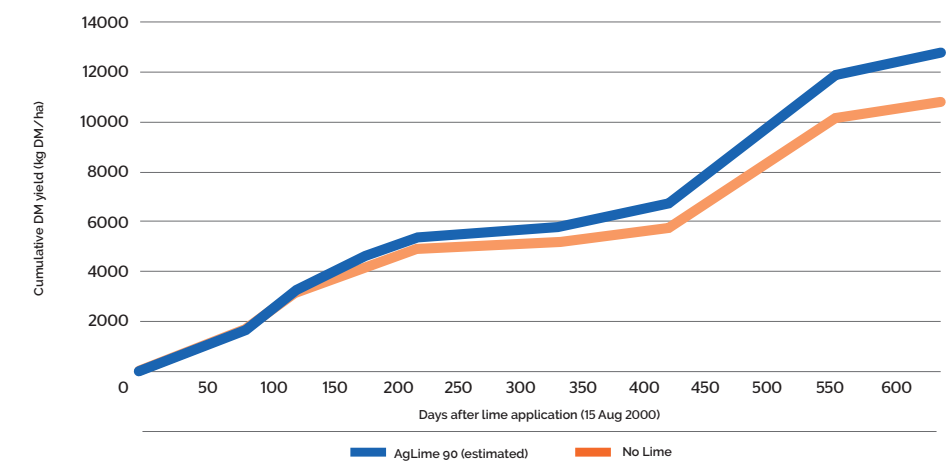


Lime treatments were applied on soil which had an initial soil pH level of 5.7.

The two finest particle size fractions (<0.25 and 0.25-1 mm) significantly increased pasture dry matter (DM) yields at six out of eleven cuts made in total. The smaller particle sizes increased the soil pH levels the fastest, in turn increasing pasture production.

All three lime treatments significantly increased the total dry matter accumulation, over the trial, compared to the no lime control treatment.

ESTIMATED EFFECT OF AGLIME 90 ON PASTURE DRY MATTER YIELD



The AgLime 90 yield is a weighted average estimated from the yields of the three particle size fractions used at the Browns site field trial.

It is estimated, from the trial results, that AgLime 90 may have a potential to increase DM accumulation by approximately 2000kg DM/ha (18%) compared to the effect of no lime.