SCF/SCNRM Lime Efficiency Trial
Greg Mengler, Tenterden

John Blake, SCF

Key Messages

- Significant lime response in third year after application
- Sub soil acidity can be addressed with lime incorporation but may not be most cost-effective treatment – requires further seasons of testing

Introduction

This trial is one of two trials in the SCNRM Lime Efficiency project. It has funding support from South Coast NRM in the Soil Health program. The site has sub soil acidity and soil tests by DAFWA, SCF/CSBP (John Blake) and Precision Soil Tech (Wes Lefroy) have confirmed that trial is relatively uniform in sub soil acidity.

Purpose of Greg's Trial

To determine how best to ameliorate subsoil acidity.
Greg applied lime treatments in March 2014 – additional treatments in 2015.

Trial Results

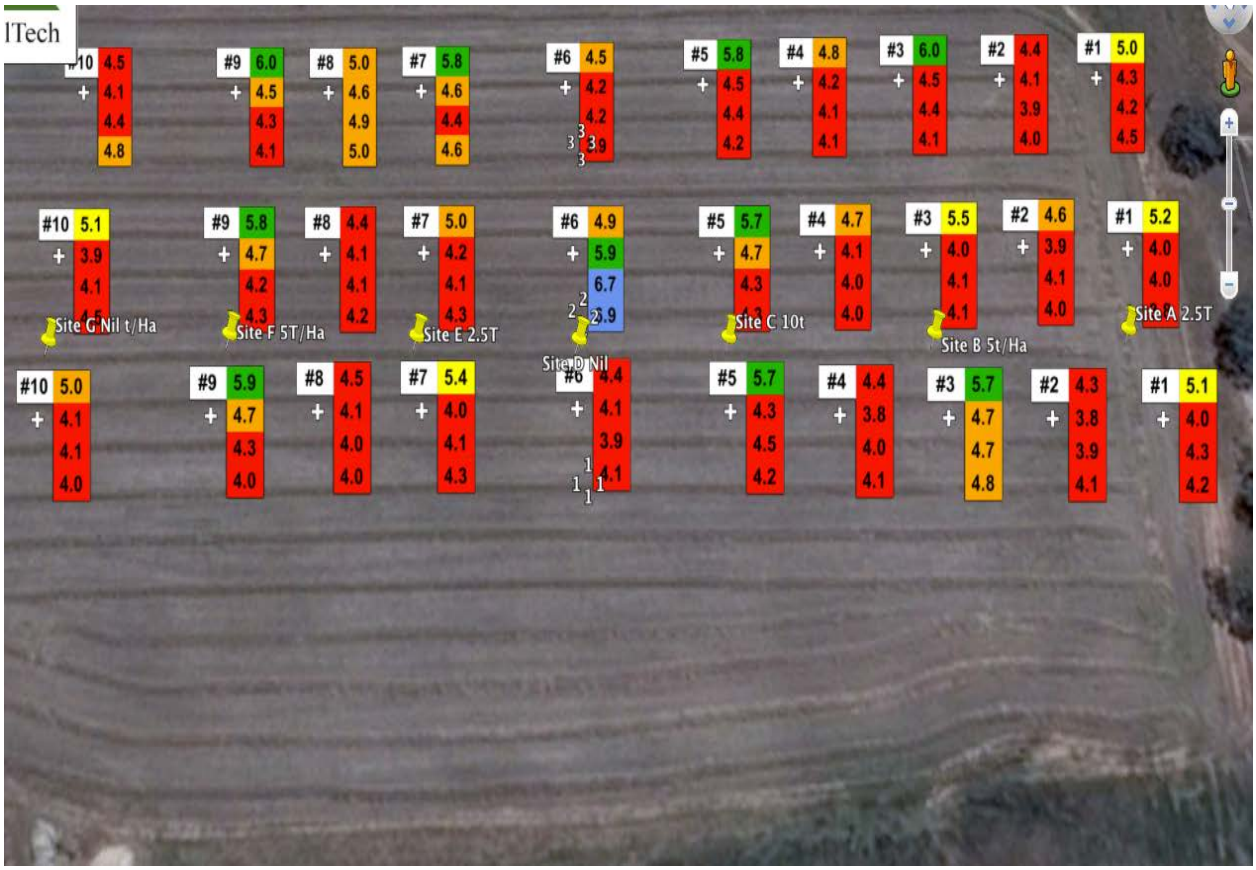

Image 1: Soil Test results – February 2015: Note very low pH in sub-soils

There is need is to get the lime into the subsoil so additional treatments are being tested. Crop responses prior to 2016 had not occurred as lime remains in the topsoil and not in the subsoil where

the soil acidity is high. In March 2015 two trial plots received a Mould-board plough treatment after lime application to incorporate lime into the 20-30 cm subsoil layer. During the 2015 season the mould-board treatment had very low canola plant density and yield and this may have boosted plot cereal yield in 2016 and was certainly a cost of treatment.

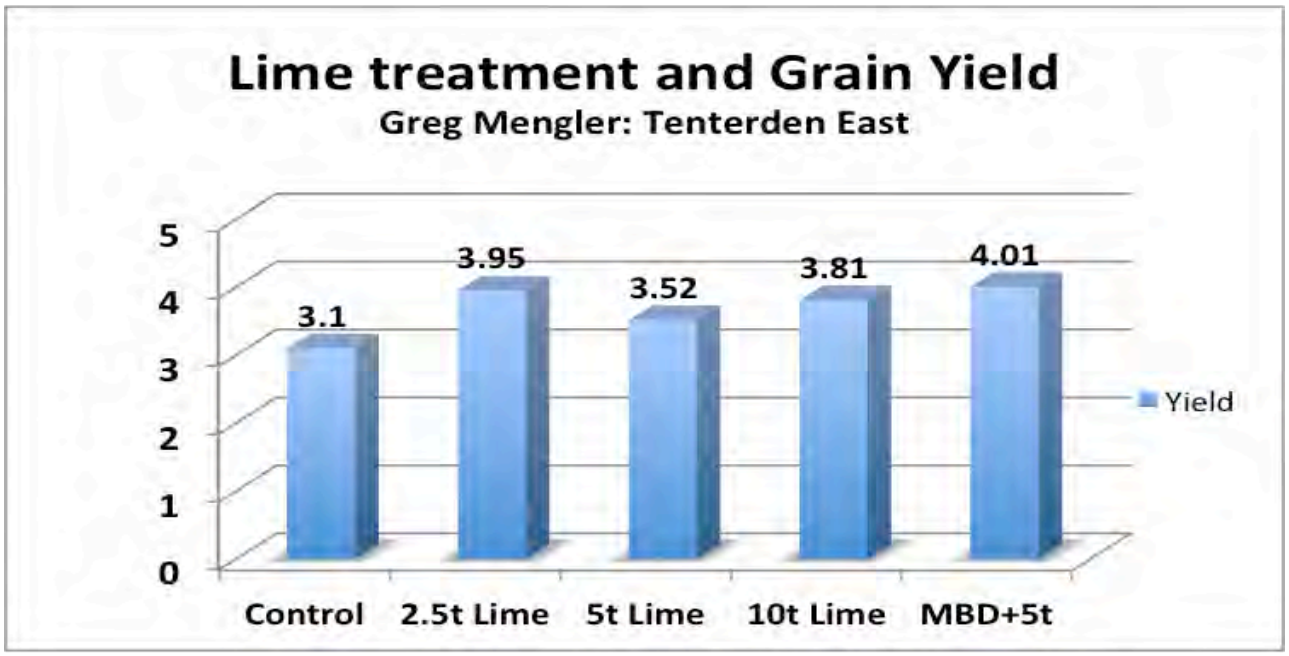

Figure 1: Lime responses in 2016 across topdressing and mould-board treatments.

Figure 2: Statistical analysis – significant lime response across all treatments.

Note: The plot yields were measured in 2014 (Wheat) and 2015 (canola). Results showed no significant response to lime treatments. There were negative yield responses to mould-boarding treatments in 2015.

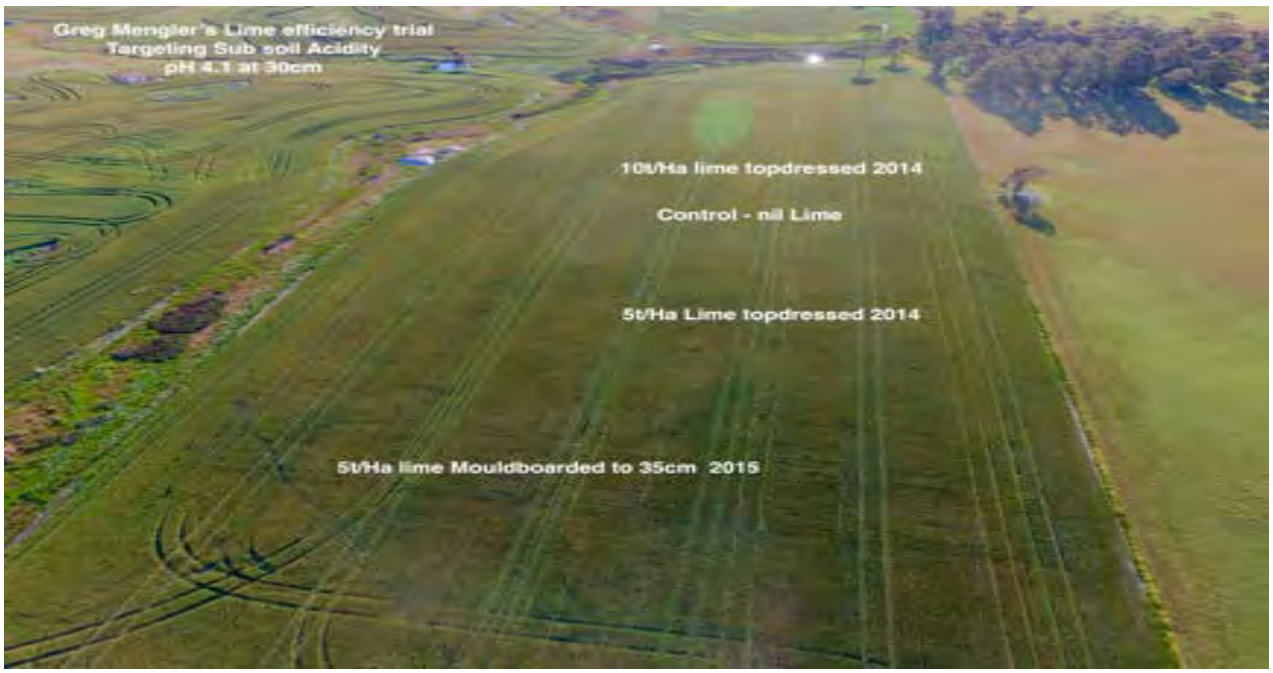

Image 2: UAV image of Greg's Lime trial 13 October 2017 showing biomass responses in lime treated plots

Conclusions

There was a significant lime response in third year after application of lime. In the first two years of the trial there was nil response to lime treatments measured. Lime responses could continue to be seasonally dependent and crop type dependent and the trial will be continued to monitor lime value for each phase of the rotations.

Sub soil acidity can be addressed with lime incorporation but may not be the most cost effective treatment – requires further seasons of testing. Other methods of lime incorporation maybe tested in the lime sources trial at Red Gum Farm (Iain Mackie).