

Tungkillo Landcare Group Lime Trials

Progress Report- June 2016

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Natural Resources Management Board

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Introduction

Tungkillo Land Care Group members were keen to look at methods of liming acidic paddocks and their effectiveness. In recent years the loss of Nutrilime as a cheap and good quality liming product and the Angaston quarry no longer producing its finer grade agricultural lime has resulted in the two cheapest and higher grade products not being available. Landholders are now considering what the best options are. Also, some landholders have issues with grass tetany and are considering whether dolomite offers any advantages in supplying Mg to their livestock. Some new products have been proposed as possible options including pelletised lime, liquid lime and low grade quarry dust.

Subsoil effects need to be included in this assessment as subsoil acidity is common in this district.

With funding through the MDB NRMB two sites were established comparing existing and new forms of liming products.

Method

Following an initial discussion on site in August 2013 between landholders, Chair and co-ordinator of the Landcare Group, Natural Resources staff and PIRSA Rural Solution staff two proposed sites were selected. The aim was to develop one site on a lower intensity grazing property (Bartsch) common in this area while the other on a more intensive cropping/ grazing property. (Cameron)

Actual site development was a lengthy process between Dec 13 and March 14. This process was delayed a number of times due to the first site selected at Bartsch being unsuitable from a surface pH viewpoint and then delays in defining subsequent sites due to extreme weather, and bushfire rehabilitation programs.

Trials were established using a range of products including the new pelletised product Calciprill. Trials were replicated, using a Randomised Complete Block Design. Discussions were held with Kym Gladigau about product selection. A trial lime spreader obtained from SARDI was used to spread the products, apart from the calciprill which was spread by hand on Bartsch's and by the landholder's drill seeder on Cameron's where the product was drilled into the soil.

Products selected were

Product	Comments
Calciprill	A new pelletised liming product. Much dearer but has been described as more effective. Can go through the fertiliser box on normal seeding equipment as the pellet is similar to handle to MAP or DAP
Agricola	A high quality lime – dispersive effect in soils. Similar to Cawtes at Murray Bridge but slighter better quality
Angaston	Pure but coarse local product from Angaston quarry
Goolwa Quarries Lime	Low quality by-product from road lime quarry at Hartley
Southern Lime dolomite	Fine high quality dolomite produced at Sellicks Hill. Milled super-fine for better effectiveness

A liquid lime treatment was added in May 2015 to Cameron's site. The liquid lime product is promoted as highly effective, with recommended application rates of 5-10 L per ha.

Site Information and Treatments

Bill and Annette Cameron

Location: Top Windrow Paddock

	water	CaCl2	Al mg/kg
soil pH 0-10:	5.1	4.4	5.2
soil pH 10-20:	4.8	4.2	9.2

	Lime	Rate	Application
Treatments:	Control	Control	surface
	Control	Control	furrow
	Calciprill	L	surface
	Calciprill	H	surface
	Calciprill	L	furrow
	Calciprill	H	furrow
	Agricola	L	surface
	G Q Lime	L	surface
	Angaston	L	surface
	S L Dolomite	L	surface
	Agricola	H	surface
	G Q Lime	H	surface
	Angaston	H	surface
	S L Dolomite	H	surface

L- low rate 3 t/ha, H- high rate 6 t/ha

Calciprill L 300 kg/ha, Calciprill H 600 kg/ha

Liquid Lime was applied on the surface of selected spare plots at 50l/ha on 28/5/15.