GOULBURN BROKEN CATCHMENT MANAGEMENT AUTHORITY

Project Summary – Strathbogie Alternative Fertiliser Demonstration Site

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Project Partners

Australian Government

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gecko CLaN

Landcare Victoria

Project:	Strathbogie Alternative Fertiliser Demonstration Site
	Summary prepared February 2015
Location	Strathbogie, Victoria
Organisation	Strathbogie Tableland Landcare Group with Gecko CLaN & SoilCare
Contact	Greg Bekker 03 5761 1631 greg.bekker@ecodev.vic.gov.au
Fund source	Granite Creeks Project Inc. and SoilCare Small Project Grants
Year of demo	2011 – 2015
Objectives	To demonstrate how ten products chosen by farmers perform on the Strathbogie plateau in relation to soil health and pasture growth/yield over a period of 5 years.
Basis of trial	There has been a lot of science and money spent on what we could call mainstream fertiliser products. The Strathbogie Tablelands Landcare Group, led by some inquiring and motivated farmers, wanted to test other new and emerging products and make performance comparisons against known products. Management practices demonstrated during the trial include use of soil tests and a soil health plan to bring the trial paddock up to conventional best management practice in relation to soil pH. That is, above 4.8 in $CaCl_2$. Ground cover will be maintained at or above 80%, with grazing management aiming to leave 800-1000 kg/ha of dry matter. The demonstration site will also be used by the Strathbogie SoilCare Group as a discussion point and act as an information sharing network for the area.
Treatments	The products being tested are: • SeaSol • Biactive • Bactive8 • Nutrisoil • CalSap • BioAg • Enviro21 (pellatised pig manure) • Single super • RUM • VicMill • Control The trial includes four replicates of each of the 10 treatments. Plots are 6m x 100m with a buffer in between. Each replicate is divided into two blocks; one block on sloping ground with two replicates of the 10 treatments, and one block on flat ground with two replicates of the 10 treatments. Rates are as per label recommendations and/or consultant advice with the aim to manage soil nutrient levels in line with the soil health plan for that paddock.
Measurements	• Soil chemical tests • Soil biology tests • Pasture growth and yield • Animal grazing observations • Ground cover • Soil compaction
Results	The following observations are made by the farmer who owns the demonstration site and Greg Bekker from the Dept. Economic Development, Jobs, Transport and Resources who supported the demonstration trial. Products applied were Enviro 2100 (pelletised pig manure), VicMill (organic pelletised fertiliser), BioAg (biologically activated phosphate), Inorganic Granular Fertiliser (Pasture Gold and Superfect) and Bactivate8 (microbial soil conditioner and fertiliser). These products make

up the pelletised group and have been applied using a ground driven rotary spreader.

The other group of products were the foliar group and consist of Nutrisoil, Calsap, SeaSol Plus and RUM.

We are now into Year 5 of the demonstration with four applications of products having taken place. The range of products previously described have been applied in spring 2010, autumn 2012, spring 2012 and autumn 2014. The rates and cost have been supplied at the regular field days that have been held in October/November.

Some products have been supported by individual consultants and/or agronomists, with all suppliers given the opportunity to make recommendations based on the initial soil test. Where this was not taken up and we were told to apply label recommendations, this has been done at the highest label rates.

The pellatised products, which have higher rates of elements (N, P, K, N, Ca, Mg), have produced the greatest tonnage of grass. Pasture cuts which are now used instead of the MLA Pasture Stick have consistently shown Superfect, Vicmill, Enviro 2100 and BioAg to be the best performed for dry matter per hectare yield over the year.

The measurements from 14/4/2014 have shown a much quicker response and recovery of pasture after grazing from the pelletised products. This has been particularly visible and measurable on the Superfect, Vicmill and Enviro21 plots. Olsen P changed from an average 8.7 mg/kg in July 2010 to 9.2, 7.5 and 6.5 mg/kg, respectively. The only increase in P across all replicates of a treatment has been on the Superfect plots, which was managed (through an agronomist) to do so. This has come at a cost in dollar terms which needs to be weighed up when making decisions.

The other key factor is pH. This causes extremely high aluminum levels and will have played a significant role with respect to pasture growth. pH was adjusted through the application of extra lime on one replicate. pH ($CaCl_2$) in July 2010 at the site was 4.5 with Aluminium 31.5% of cations. Soil tests taken in June 2013 show that all plots changed in soil pH from 4.5 ($CaCl_2$) to a range of 4.2 - 4.4 ($CaCl_2$) with Aluminum 33.5% - 30.5%. The plot treated with extra lime had a pH 4.8 ($CaCl_2$) and Al 5.7%.

This is the major reason for now looking at what pasture species are most productive in these soil conditions with respect to soil pH and low fertility (see: *Strathbogie Acid Soils Pasture Trial summary*).

Cattle grazing at the site in one of the four replication blocks.

Greg Bekker from DEDJTR taking pasture cuts.