

HCCC Soil Carbon Project Update

Soil pit field day

A soil pit demonstration day was held in June on two farms: one at Tarcombe Herefords and the other at Lawson's farm in Highlands.

Soil testing was conducted on these farms in early May to measure the amount of carbon, nutrients, and pH of the soil to a depth of 30 cm.

The results of these test were presented at the field day and discussions were held over lunch at the Hayes shearing shed.

The focus of the field day was to explain the results of the soil sampling in terms of management practices and how carbon levels and soil productivity can be improved through refinement of these management practices.

To build soil carbon and improve soil health and productivity it is important to address any underlying constraints such as soil acidity, compaction, or other chemical, physical, or biological barriers. building soil carbon is dependent on overall good soil health.

Soil pits allow participants to view soils from a different perspective and to visually see some of the limitations of their soils and how these limitations impact on factors such as root growth, water movement and biological activity. The pits provide real life learning scenarios to help explain the often-complex relationships that exist between chemical, physical, and biological factors.





Figure 1 Dr Cassandra Scheffe



Figure 2 Looking at the soil profile



Figure 3 Measuring pH

The field day was led by Dr Cassandra Scheffe, CPSS
Soil Scientist / Co-owner - AgriSci Pty Ltd
Honorary Fellow - The University of Melbourne
Adjunct Senior Research Fellow – Charles Sturt University

With special thanks to the Hayes and Lawson's for allowing the HCCC to dig these pits on their farm and participating in this project.

All three farms participating in the project have signs outside the property to publicise the work



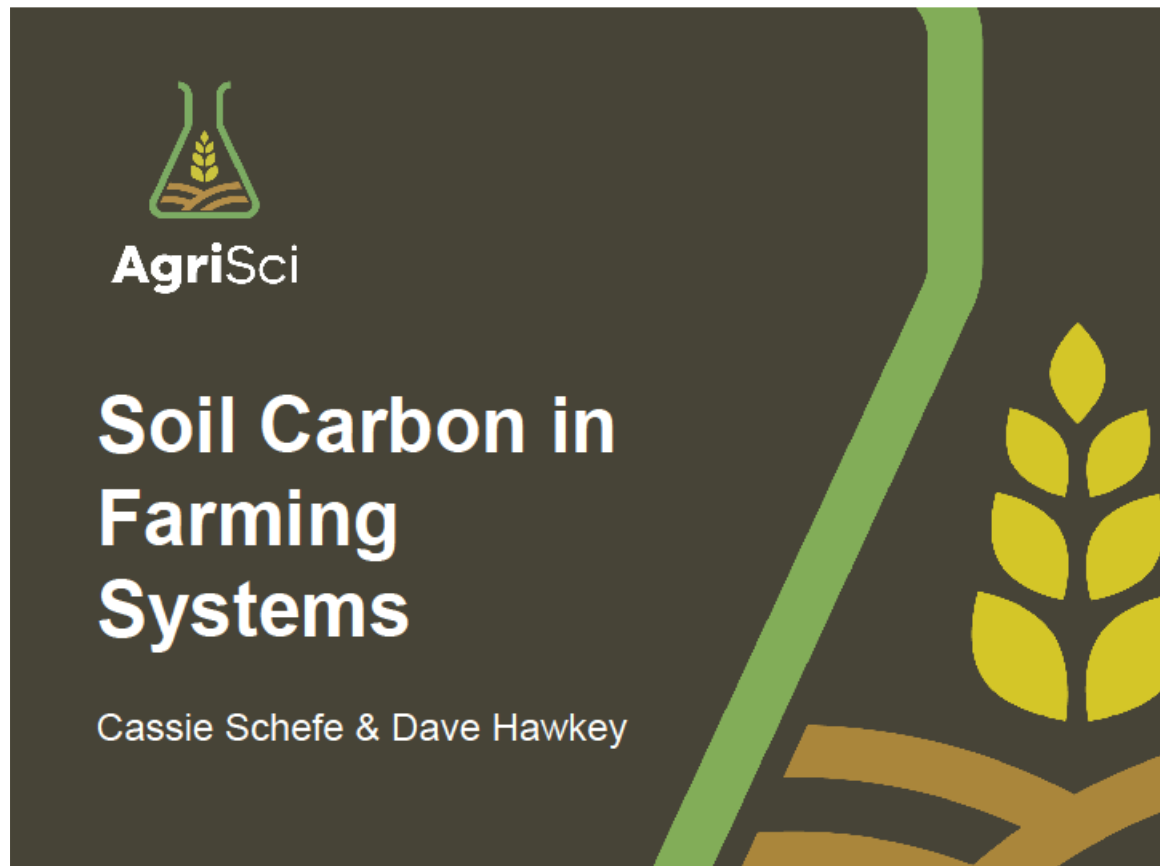
Workshop forum conducted at Ruffy

Notice of meeting in the Granite News

The presentation by David and Cassie covered the following

- The brief overview of the project
- The work to date
- Soiling sampling for background nutrients
- Soil sampling for carbon in line with requirements for carbon trading
- Detailing of the work plan for each farm
- General discussions on soil carbon and the requirements for carbon trading
- Benefits of high carbon in relation to soil fertility and returns to farms

[Presentation slides](#)



Agenda

- Introductions
- Background
- What has been achieved so far
- Demonstration Plans
- Everything Carbon
 - Why
 - Myths
 - Carbon Trading Schemes
- Q&A

Background

- Improve soil health and carbon levels in the HCC.
- Improve pasture production.
- Create healthy sustainable soils – the foundation of sustainable farming systems.

Demonstration – Bluetops

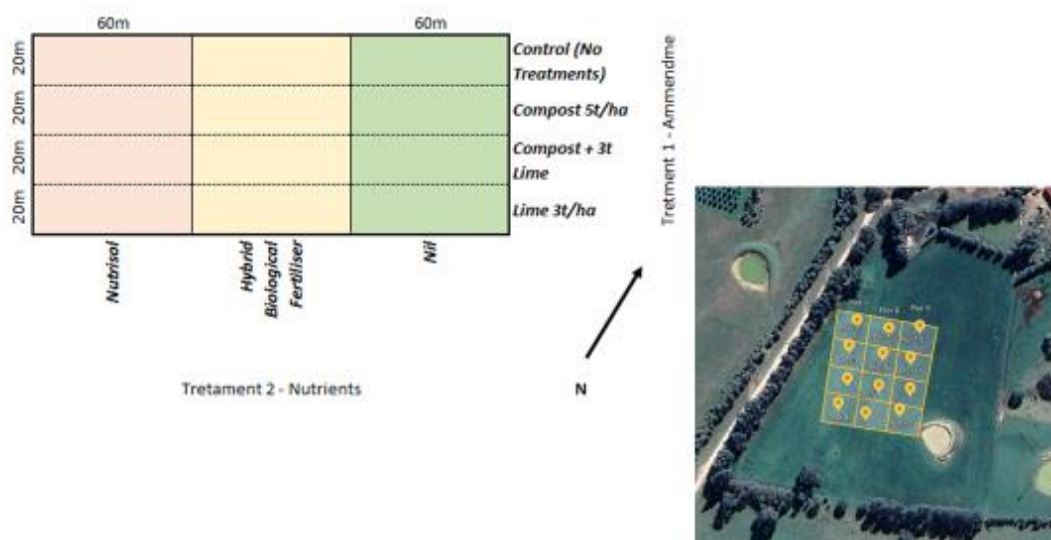
Background

- Perennial Pasture sown in 2019
- SOC % range (0-10cm) = 2.81-3.48
- Soil pH 4.5 (CaCl₂)

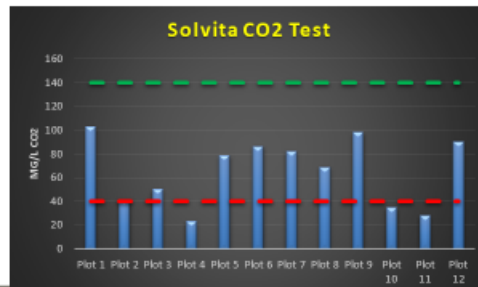
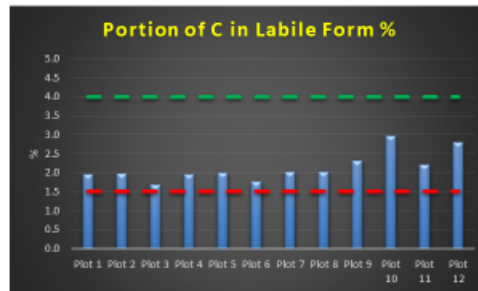
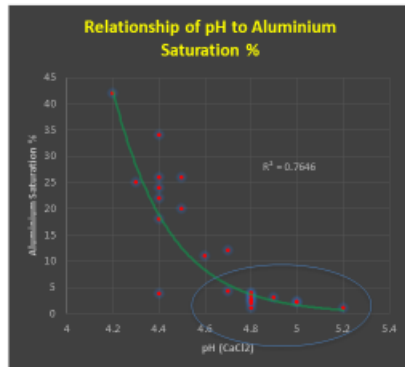
Question

- Will increasing soil pH increase soil carbon?
- Will compost assist in improving soil pH and increase soil carbon?
- Will the addition of alternative fertilizer increase pasture production and soil carbon?

Demo Plan – Bluetops



Baseline Results



Demonstration – Looking Glass

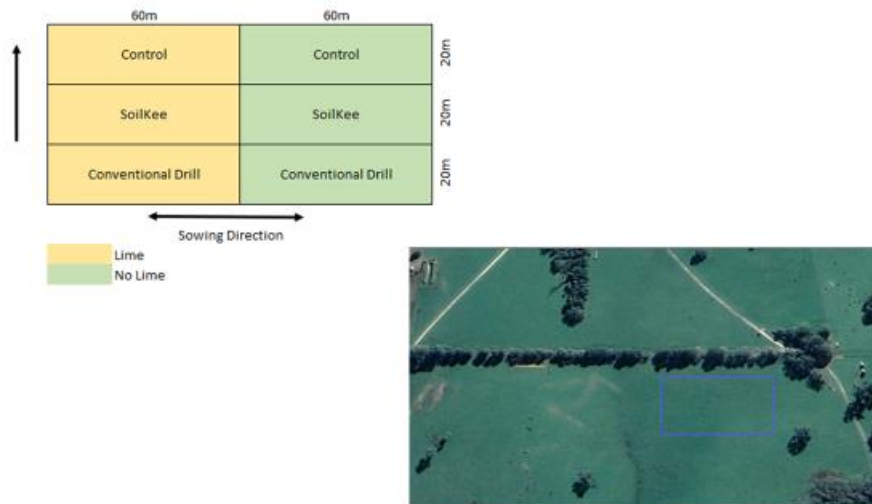
Background

- Pasture dominated by annual species
- SOC % range (0-10cm) = 3.56-6.02
- Soil pH 4.5 (CaCl₂)

Questions

- Will the soil kee machine when used to renovate a pasture, build soil carbon in the HCC compared to using a conventional seed drill?

Demo Plan – Looking Glass



Demonstration – Tarcombe

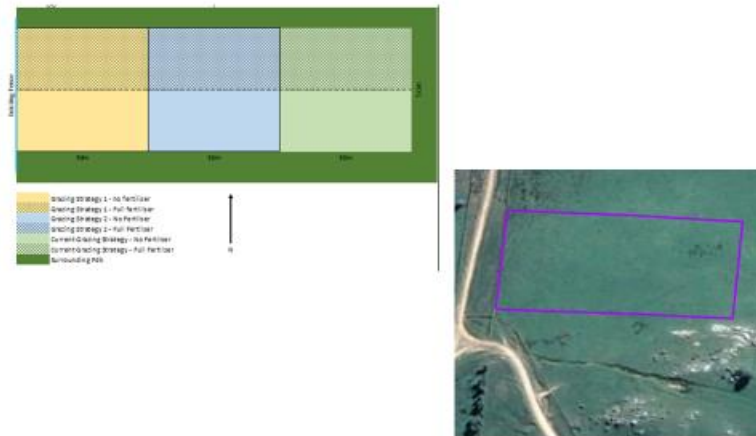
Background

- Well established Phalaris & Sub Clover based pasture
- SOC % range (0-10cm) = 1.95-2.98
- Soil pH acidic but not limiting growth
- Grazing practices fundamentally set stocking

Question

- Can changing grazing practices increase soil carbon?
- Will the addition of fertilizer increase pasture growth and soil carbon?

Demo Plan – Tarcombe



Measurements – Soil Baseline

GPS referenced samples collected from each plot prior to treatment

0-10cm

- Phosphorus (Colwell)
- Phosphorus buffer index
- Potassium (Colwell)
- Sulphur
- Labile Carbon
- Total Carbon, Total N, C:N ratio
- Dispersion and Slacking
- Solvita CO₂ – Soil Biology

0-5cm

pH

5-10cm

pH

