

# Exploring options with compost at Braeside

## Compost in broad-acre farming systems

CASE STUDY

COMPOST IN

BROAD-ACRE

FARMING SYSTEMS



### PROJECT TITLE

Exploring options with compost at Braeside

### FARM SIZE

4000 hectares

### SWCC PROJECT

Sustainable Soils

### CASE STUDY AUTHOR

Sarah Hyde, Facey Group Inc

### ANNUAL RAINFALL

204.5mm (2012)

### DURATION

April 2012 - May 2013

### FARMER

Wade & Gerri Hinkley

### SOIL TYPE

Variable

### PROJECT MANAGERS

Sarah Hyde, Sustainable Agriculture Coordinator, Facey Group

### LOCATION

Tincurrin

### ENTERPRISES

Sheep (wool & meat) and Cropping & Pasture

Celina Fowler / Alana Starkie, South West Catchments Council

### PARTNERS

Facey Group Inc



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OUR  
COUNTRY

ABOVE: Compost site, wheat crop at Wade and Gerri Hinkley's Tincurrin property (photo: Facey Group)

This project is supported by the South West Catchments Council, through funding from the Australian Government's Program, Caring for Our Country and Government of Western Australia.



## Background

Farmer research has identified compost as a possible cost effective and natural alternative soil ameliorant to reduce the use of inorganic fertiliser within broad acre farming systems. Work within the horticultural industry has sparked interest to adopt the practice in broad acre. Previous work has shown compost improves soils by increasing soil buffering capacity (pH) and moisture holding capacity. It is also a source of organic matter that improves soil fertiliser retention and boosts the pool of nutrients available to plants.

Through communications with another local farmer using compost the project was developed to further investigate the use of compost and the effects to soil health.

## Aims of the trial

To improve soil health, in particular to increase soil organic carbon and manage soil acidity through the application of compost. The long term objective aims to reduce the reliance on inorganic fertiliser use with broad acre farming systems to allow for continued sustainable production.

**Increasing soil organic carbon and managing soil acidity through the application of compost, potentially reducing inorganic fertilizer usage within broad-acre farming systems at Tincurrin.**



Using compost as an alternative to inorganic fertilisers with the cropping rotation was initiated by a neighbouring farmer to the Hinkley's. Anecdotal evidence had been seen in the improvement of soil health and a reduction in the use of inorganic fertilisers in hay production at the neighbouring farm.

As members of the Facey Group, Wickepin, the Hinkley's floated the idea of using compost to improve sustainability on farm. The South West Catchment Council's assistance has provided a stepping stone into the initial trialling stages of compost application on farm and monitoring in 2012.

Previous trialling using MSW (municipal soil waste) derived compost spread at rates of 10t/ha and 20t/ha wet weight showed increases in yields and nutrient rates within the soil.

Findings from this research note that the economics needs to be considered around application rates for broad-acre farming systems (David & King 2005).

## The trial set up...

The Hinkley's set out to explore the impact on crop production and soil health using variable rates of compost at economical rates for broad-acre. Wade stated that *"Ideally we want to improve our soil health and remain sustainable long term"*.

Compost was purchased from a neighbouring farm who makes it privately for their own use. The compost is produced as a result of cow manure waste from a local cattle feedlot and on farm straw.

Soil tests to depth (30cm) and soil health assessments were completed at the site prior to spreading of compost and following the harvest of 2011/12.

Over three paddocks the trial was replicated with rates of compost spread at 1t/ha, 2t/ha and 3t/ha.

Seeding of wheat in 2012 was carried out in accordance with the typical cropping program, with standard fertiliser rates used.

ABOVE: Map of the Compost Demonstration Site "Hinkley"

RIGHT: Germination counts, compost sites (photo: Facey Group)

FAR RIGHT: Compost turner at neighbouring farm (photo: Facey Group)







LEFT: Compost sample  
(photo: Facey Group)

## What did we see...

Unfortunately in the one year trial, no results were seen to quantify practice change. Given the poor season of 2012 and unfortunate frost events late in the season the plots did not return any yield results to quantify any differences between application rates.

*"I didn't expect to see any impacts in the first year, with soil health I expect it to take several years and possibly multiple applications before we see any significant results"* commented Wade. Somewhat like lime sand application, the results are usually seen over multiple seasons rather than within the year of application.

*"I didn't expect to see any impacts in the first year...ideally we want to improve our soil health and remain sustainable long term"*

Wade Hinkley

The Hinkley's envisage continuing with on-ground works over the following seasons and monitoring the changes over a longer term.

## References:

David, S. & King, C. 2005, *Affect of improving soil organic mannter with compost on broad-acre production*, Organic Farming Systems, Cottesloe WA.



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