

Cool Compost



Compost results in improved pasture productivity

Eight large-scale working farms in southern NSW – including a Bungendore beef cattle property – were chosen to demonstrate the potential of compost as a farm input. In less than a year pastures were waist-high in the compost-treated paddocks.



Two images of the Bungendore demonstration site before (above) and after (below) and the compost project. Photos: ASM

Custom-made compost

As part of a wider project supported with \$313,742 from the EPA's Waste Less, Recycle More Organics Market Development grants, the project involved Australian Soil Management (ASM) conducting soil testing and site mapping and then applying a compost specifically blended to address soil nutrient gaps.

Changes in soil quality, productivity and production costs were monitored to give farmers evidence-based information about the effect of recycled organics compost. As most Australian farms contain less than 2% of organic matter in the topsoil - a healthy benchmark is a minimum of 5% - ASM's first step was to test the soil and then develop a soil management plan to add more organic matter.

The Bungendore experience

A 400-hectare beef cattle property at Bungendore had its paddocks soil tested and mapped to a 50 centimetre depth by ASM.

Compost meeting Australian Standards (AS4454) was sourced from the Snowy Monaro Regional Council. Supplements were added to address deficiencies identified in soil tests and compost analysis.

The tailored compost blend was surface-spread in late May 2016 over five paddocks at a rate of 8 tonnes per hectare across 22 ha.

"The compost got us five years ahead in our grazing plan and now we can focus on animal health and pasture improvements."

Nick Huggins, Bungendore farmer.



Australian Soil Management director Greg Bender setting up a sampling tube. Photo: ASM

"Compost ain't compost. It needs to be high quality and tailored to your particular needs."

Dr Greg Bender, director, ASM

Dramatic results in feed quantity

After less than a year, compost-treated paddocks were waist-high in pasture, compared to knee-high paddocks in untreated areas. There was an increase in species beneficial for grazing, especially phalaris, cocksfoot and clovers.

The farmer said the compost advanced his management plans by two years in the treated areas. He plans to convert his whole farm to better soil management practices that include compost as a production input.

Bungendore field day

More than 30 farmers attended a field day workshop which included a soil fertility session; on-farm results to date, a hands-on quality compost session with a range of samples along with a site tour and sharing the farmer's experience.



Waist-high preferred species thriving in compost-treated paddocks at the Bungendore pasture project. Photo: ASM

Boost for stocking, pasture and soil

Evidence-based information recorded in May 2017:

- Pasture dry matter gains were measured from 23% to 49%.
- Sustainable stocking rates, at 30% use, rose from 100 to 143 head/ha.
- Carrying capacity increased by about 43%.
- Four-fold increase in available phosphorous.
- 50% or greater improvement in organic matter, carbon, total nitrogen, nutrient availability, calcium, copper and boron.
- Soil pH rose from 5.52 to 6.07 for 0-10cms and from 5.77 to 6.10 for 10 to 30cms.



Workshop in progress at the Bungendore pasture project. Photo: ASM

After the workshop, 10 field day attendees approached the Snowy Monaro Regional Council about compost availability and pricing

Compost as a farm input

- Compost improves pasture production and soil fertility.
- Compost benefits are evident even in the short term with timed grazing management.
- ASM said optimised results are expected in three years depending on the area, soil and timed grazing management practices.

- Success depends on quality, custom blending and a well-designed pasture management program.
- Compost needs to be applied until the soil's organic matter regenerates to 5%. Then it needs to be re-applied to maintain a sustainable level.

"The rapid and dramatic response on-farm exceeded our own expectations as well as those predicted from conventional scientific models."

Dr Greg Bender, director, ASM

NSW Environment Protection Authority

Email: info@epa.nsw.gov.au

Website: www.epa.nsw.gov.au

ISBN 978 1 922778 90 1 | EPA 2022P4173

November 2022

The EPA **disclaimer** and **copyright** information is available on the EPA website.