

Compost in agriculture



Gippsland
Regional
Organics

Why use compost in agriculture?

Modern agricultural systems, particularly intensive cropping, horticulture and grazing, often remove organic matter from soils faster than it is replenished. This can reduce soil structure, biological activity and long-term productivity.

Applying compost helps to rebuild soil organic matter and supports soil biological processes that underpin productive and sustainable farming systems.



Benefits of compost in agriculture

Improved soil structure

Compost promotes the formation of soil aggregates, improving porosity and reducing compaction. This allows plant roots to penetrate more easily and improves soil aeration, which is critical for healthy plant growth.



Increased water holding capacity

The organic matter in compost acts like a sponge, increasing the soil's ability to retain water. This reduces the demand for irrigation and increases crop resilience and plant survival, particularly during dry periods. Improved infiltration also reduces surface runoff and water loss.

Improved soil biology and disease suppression

Compost provides a food source for beneficial soil microorganisms that compete with plant pathogens and support nutrient cycling, leading to improved plant establishment and growth.

Enhanced nutrient efficiency

Nutrients in compost are released more slowly than synthetic fertilisers, reducing losses through leaching and runoff and improving nutrient use efficiency.

Reduced reliance on synthetic inputs

Compost can reduce fertiliser requirements over time while maintaining productivity.

Applying compost across agriculture systems

Vegetable production

Supports soil recovery in high intensity systems and can improve uniformity of crop growth and marketable yield.

Viticulture and orchards

Improves vine and tree health, supports soil moisture retention and prevents weed growth. Can assist in managing soil constraints such as salinity and compaction.

Broadacre cropping and livestock grazing

Improves soil structure and biology, water infiltration and nutrient retention, particularly in low organic matter or degraded soils.

Application guidance

To obtain consistent and optimal benefits, recommendations for compost use in agriculture include:

- Obtain a soil test and use as a guide for application rates.
- Incorporate into soil or apply as surface mulch at the beginning of the cropping cycle. For perennial crops and pastures, application in spring is also appropriate.
- Application rates usually range between 5-10 wet tonnes/ha annually, depending on crop type and soil condition. Higher rates may be used in specific situations such as soil rehabilitation.
- Repeated application over several years provides greater benefits than once-off applications.

Source: EPA NSW Cool Compost – Compost specifications for horticulture and grazing pastures technical fact sheets

Why choose GRO compost?

Gippsland Regional Organics (GRO) produces high quality compost from a range of organic waste streams, including food organics and garden organics (FOGO), green waste, biosolids and agricultural residues.

Owned by Gippsland Water, GRO is one of Victoria's largest composting and waste treatment facilities and is located at Dutson Downs, near Sale. The facility is EPA-licensed and processes organic waste materials under controlled conditions to produce a mature, stable and consistent compost suitable for a wide range of applications.

GRO plays a critical role in supporting the circular economy by receiving organic waste materials and transforming them into a valuable soil amendment to improve soil health and enhance plant growth.

Quality and safety assurance



Australian Standard
AS 4454-2012
Lic. SMK41097

AS4454 certified: GRO compost is rigorously tested and certified to the Australian Standard AS4454 *Composts, soil conditioners and mulches*, providing assurance that it meets strict requirements for quality and safety. AS4454 defines minimum requirements for compost quality, maturity and safety and is referenced across Australian regulatory guidance.

Independent testing: Products are independently tested by the National Association of Testing Authorities (NATA) accredited laboratories.

Pasteurised product: High temperatures achieved during composting eliminate pathogens and plant seeds, supporting safe use in food production systems.

Low contamination: Physical contaminants are removed through screening and feedstocks are controlled and tested prior to processing.



GRO compost product specification

GRO compost and mature compost screened at 10 mm and 15 mm are available for sale in bulk quantities.

Typical agronomic parameters of GRO's compost products are provided below.

Parameter	Typical range
Moisture (%)	30 – 40
pH	6.4 – 8.5
Carbon to nitrogen (C:N) ratio	12:1
Organic carbon (g/kg)	> 200
Nitrogen (g/kg)	17 – 25
Soluble nitrogen (mg/kg)	270 – 360
Phosphorus (g/kg)	6.3 – 6.6
Soluble phosphorus (mg/kg)	40 – 75
Potassium (g/kg)	6.1 – 8.0
Sodium (g/kg)	2.2 – 3.0
Zinc (g/kg)	0.22 – 0.26
Copper (g/kg)	0.07 – 0.08
Bulk density (t/m ³)	0.7 – 0.9

Note:

- Range calculated using an average of three results.
- Monitor phosphorus levels in sensitive systems.
- Consider zinc and copper as these trace elements can accumulate under repeated applications.
- Exact agronomic parameters can be requested to calculate application rates.
- See GRO's product specification sheets for more information.



Meeting quality standards

Compliance with AS4454 ensures that GRO's compost products are suitable for use in agriculture.

General specifications

Composts for agricultural applications, including horticulture and grazing, must meet the requirements in the Biosecurity Regulation 2017 (clauses 37 and 38).

Acceptable contamination levels

Composts used in agriculture should be as free as possible from all types of biological contamination (plant propagules and microbial contaminants), physical contamination (materials such as glass, metal, plastic and stones or lumps of clay) and chemical contamination (heavy metals).

Food safety requirements

For horticulture production, compost application should adhere to the Freshcare Food Safety and Quality Standard (FSQ4), which outlines the good agricultural practice, best management criteria and food safety requirements for the production and packaging of fresh produce on-farm.

Performance characteristics

Beyond the quality characteristics specified in AS4454 there are several more characteristics that impact upon compost performance in the field. These performance characteristics differ slightly with each type of application due to production and crop requirements and can also be modified and amended after the composting process to create 'fit-for-purpose' composts suited to specific uses.

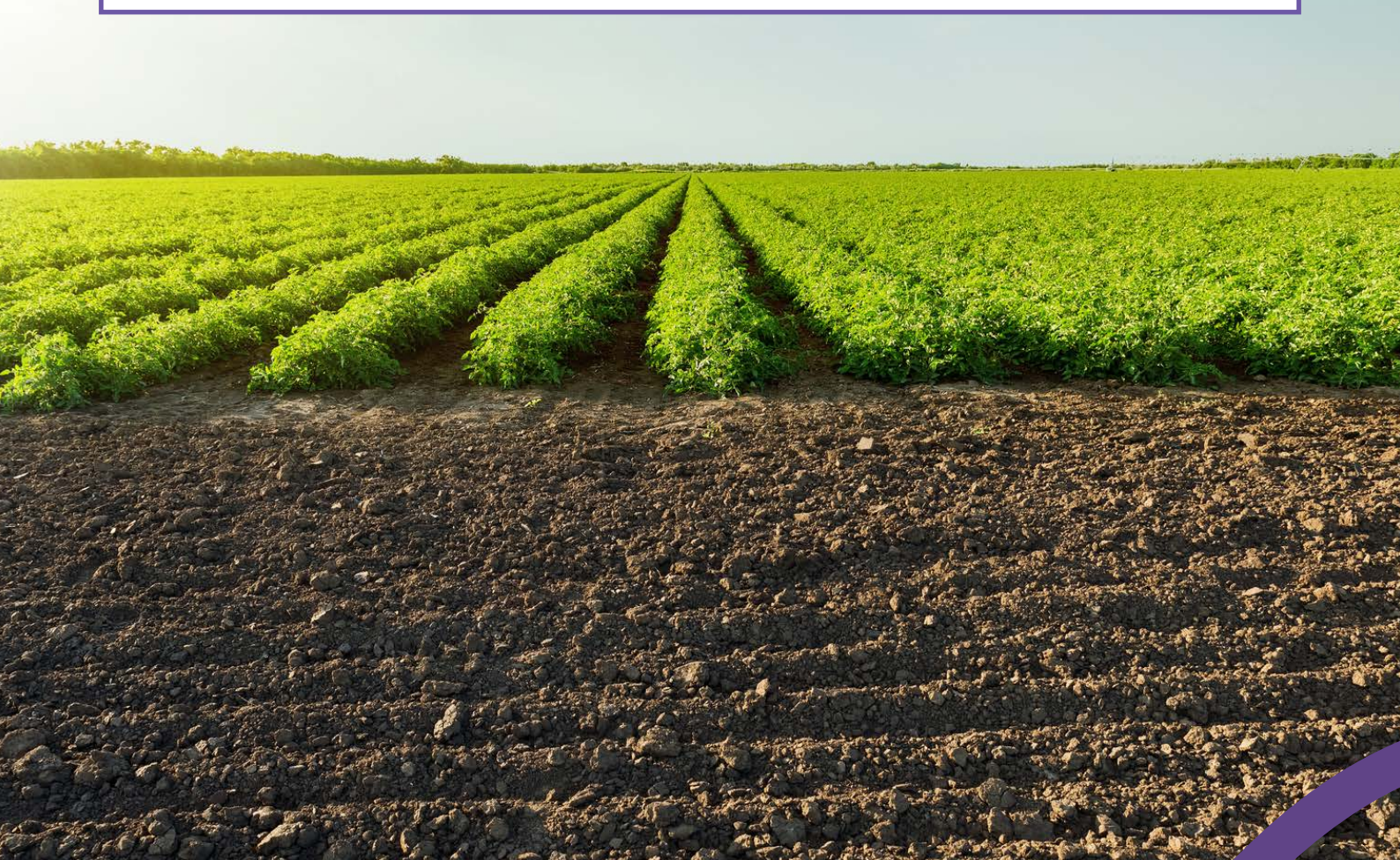
Compost maturity and stability

The maturity and stability of composted products impacts the performance of the product once it is placed on the soil surface or incorporated. Immature and unstable compost will deplete the soil of plant nutrients required for the crop. Mature compost has fully completed the composting process and is a beneficial soil amendment.

Source: EPA NSW Cool Compost – Compost specifications for horticulture and grazing pastures technical fact sheets

More information

- **Certified compost**
gippswater.com.au/about-us/gippsland-regional-organics/our-compost
- **Compost in landscaping and commercial gardening**
gippswater.com.au/about-us/gippsland-regional-organics/our-compost
- **AORA compost fact sheets**
aora.org.au/compost-fact-sheets
- **EPA NSW Cool Compost: Compost specifications for horticulture technical fact sheet**
circularaustralia.com.au/cool-compost/circular-ag/
- **EPA NSW Cool Compost: Compost specifications for grazing pastures technical fact sheet**
circularaustralia.com.au/cool-compost/circular-ag/
- **Freshcare**
freshcare.com.au
- **Agriculture Victoria: Compost and farm biosecurity**
agriculture.vic.gov.au/farm-management/soil/composting/compost-and-farm-biosecurity
- **Agriculture Victoria: Compost**
agriculture.vic.gov.au/farm-management/soil/composting/compost



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We acknowledge the Traditional Owners of the Gippsland Water area, the Gunaikurnai people and the Bunurong people, and recognise their strong cultural connection to the land and waterways. We pay our respects to Elders, past and present.