

Compost for Vegetable Growers

Fact Sheet 5: Using Compost



The type of product you choose and the method of application depends on your production goals and your specific performance requirements (see Sheet 3, Getting started). Your compost supplier should match your needs with a particular product, giving specific advice on method and rates of application. This fact sheet provides you with some general guidelines about quality criteria for compost and how it can be used in vegetable production.

Compost quality

The Australian Standard (AS 4454) provides a framework for the production of quality compost and for quality assurance (see Sheet 4, Selecting the supplier). However, an Australian Standard compost also needs to be 'fit for purpose'. In general composts should be:

- Compliant with AS 4454 specifications
- Stable and of appropriate maturity (see below)
- Finely screened to remove chunky particles, rocks and plastic.
- Moist, but not wet or dusty
- Neutral or pleasant smelling

Stability is the level of biological activity in a moist and aerated compost pile. In contrast to unstable composts, they are unlikely to compete with crops for available nitrogen or cause oxygen deficiency in soil. Compost maturity is related to stability but reflects the level of further composting that has occurred. There are a few tell-tale signs to look for when predicting the stability and maturity of composts:

- Unstable composts can be odorous and very hot
- Stable composts take 6-12 weeks to make. A further 4 weeks or so is usually needed to reach an appropriate level of maturity for most applications in vegetable production (through a process called 'maturation')
- Check the specification sheet that comes with your compost - the carbon to nitrogen ratio (C/N) should be under 20:1 and toxicity (a plant growth screening test) should be greater than 60%

Avoid using unstable or immature composts in vegetable production, and if they are used, apply them to soil at least 4 weeks prior to planting or sowing. Additional fertiliser nitrogen may also have to be applied with unstable composts to prevent nitrogen deficiency in crops.

Sheets in this series

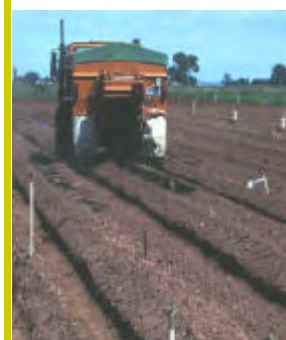
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Application methods

Apply compost just before planting and leave it on the soil surface for mulching or incorporate it in the soil. In general:

- The maximum rate of application should not exceed 60m³/ha/year, applied either in a single application or split-up over the year. Higher rates might initially be needed for degraded soil, but in most cases continued application above this rate would not be economical
- If the compost is to be incorporated, incorporate it to the top 10 cm or so of the soil
- When mulching, apply 2-5 mm thick on the surface of the bed.



Trenching compost



Banding compost

Broadcasting of compost is the fastest way to improve soil conditions across a paddock. Restricting application to planting beds, placement in trenches or banding can be used to reduce total application requirements and therefore costs. These approaches are recommended where compost is applied to supply nutrients to a crop and for improving crop establishment.



Mulching with compost

Mulching reduces evaporation and saves irrigation water. It will also help control some weeds. Mulching is particularly useful on sandy soils that are prone to wind erosion which causes sand-blasting of young crops.

Further information is available from:

Primary Industries Research Victoria (PIRVic) Knoxfield Centre, Private Bag 15, Ferntree Gully Delivery Centre, Victoria, 3156
Phone: 03 9210 9222
www.dpi.vic.gov.au

EcoRecycle Victoria
Level 2, 478 Albert St. East
Melbourne Victoria 3002
Phone: 03 9639 3322
www.ecorecycle.vic.gov.au

Department of Agriculture,
Western Australia,
Locked Bag, Bentley
Delivery Centre,
Western Australia 6983
Phone: 08 9368 3333
www.agric.wa.gov.au

Plan to succeed

Getting the most out of compost is achieved by carefully selecting the right product and monitoring soil conditions and crop performance after compost application. Adjustments should be made to fertilizer rates according to the nutrient content of the compost. As a rule of thumb, stable composts will contribute no more than 15% of its total N content to the crop in the first year. In the second and third years an additional 10-15% (in total) becomes available. These figures are often difficult to estimate because they are site and compost specific. While these contributions are small, N fertiliser rates can be gradually reduced after soil organic matter levels increase from regular application of compost. In contrast, P, K, Mg, Ca and trace elements are available and fertiliser applications of these nutrients can be more quickly reduced.

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