



Conserving water using compost

FACT SHEET



Water is a significant natural resource management issue for both urban and regional NSW. Wasting water can cause significant environmental problems, and using water more efficiently can result in significant cost savings and environmental benefits.

The use of composted mulch and soil conditioners in landscaping, horticulture and agriculture has been shown to improve the efficiency of water use by reducing evaporation, improving water infiltration and storage, and reducing deep drainage.¹

Benefits of composted mulch

- Mulching can reduce the irrigation requirements of plants by up to 70%, mainly by reducing evaporation of water from exposed soil surfaces.^{2,3}
- Mulching can reduce soil temperature by up to 30°C, which reduces water loss and reduces plant stress.
- Mulching helps hold water and reduce leaching loss, and improves the drought resistance of plants. This is a significant benefit in non-irrigated areas.⁴

Benefits of composted soil conditioners

- Using composted soil conditioners improves soil structure, water infiltration, and water holding capacity of the soil.⁴
- Turf grown with the application of composted soil conditioner can require up to 30% less water. This can increase root penetration, resulting in deeper root systems that explore a larger soil area for moisture and nutrients, reducing deep drainage and irrigation requirements.⁵

Mulching can reduce the irrigation requirements of plants by up to 70%, and reduce soil temperature by up to 3°C



- In sandy soils, composted soil conditioners improve water retention and lateral root distribution in the soil, improving plant access to soil water, and reducing deep drainage and irrigation requirements.

Estimated cost savings: an example

A Council in South Sydney uses bore water for irrigation. Due to costs of sinking bores, many street side plantings and ornamental streetscapes, as well as a number of smaller parks (turf and garden beds) are watered using water trucks (capacity of 1,500 to 6,000 litres/per truck) filled with bore water from larger parks where bores have been sunk.

Council runs three such water trucks, each staffed by two garden maintenance personnel. It has been estimated that the use of compost products, such as mulches, organic top dressings, and soil conditioners (for turf establishment), could reduce irrigation requirements by at least 40%.

This has the potential to remove the need for one of these trucks, saving all associated operating costs (more than \$100,000 per year).

There may also be additional savings from reduced purchase of water where potable supplies are used for irrigation.

References

1. Department of Environment and Conservation (2003). *Life cycle inventory and life cycle assessment of windrow composting systems*. Report prepared by Recycled Organics Unit, The University of New South Wales, Sydney.
2. Abu-Awwad, A.M. (1998). *Effect of mulch and irrigation water amounts on soil evaporation and transportation*. J. Agron. Crop Sci. 181:55-59.1.
3. Abu-Awwad, A.M. (1999). *Irrigation water management for efficient use in mulched onion*. J. Agron. Crop Sci. 183:1-7.
4. US Composting Council (1996). *Benefits of Compost. The Field Guide to Compost Use*.
5. US EPA (1997). *Innovative uses of compost. Erosion Control, Turf Remediation, and Landscaping*.

Application guide

- Products should comply with Australian Standard AS4454 (2003) Composts, Soil Conditioners and Mulches.
- Composted mulch is applied on the soil surface around the plants after planting. It should not touch the stems and trunks of plants as this can result in stem rot.
- Avoid application of fine mulches and/or thick layers of mulch on heavy soil types that can be prone to waterlogging.
- Composted soil conditioners are incorporated into the topsoil, commonly before planting, to improve soil structure and water holding capacity.
- A mixture of fine soil conditioner and coarse composted mulch can be applied to improve both soil structure and water conservation.
- Some composted soil conditioners can also be applied as organic top dressing to improve the levels of soil organic matter.
- Compost can be applied any time of the year.
- For water conservation, apply prior to summer when soil evaporation is usually highest and when plants require the most water.

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