

#### Inside This Sheet

**1** Definitions

Uses

Benefits

Risks

**2** Additives

Application rates

Application methods

Definitions

Important references

Acknowledgements

#### Definitions

Organic soils are *general-purpose soils* (normally an amended *natural soil* or *soil blend*) that have a bulk density of greater than 0.6 kg/L, and with an organic matter content in the range of 15% to 25% by mass. Most organic soils contain less compost than low density soils (Standards Australia AS 4419, 2002). See Information Sheet No. 3-10, “*Introduction to Australian Standard AS 4419–2002 soils for landscaping and garden use* in the “*Producing Quality Compost*” package of Information Sheets for more details (Recycled Organics Unit, 2002a).

#### Uses

Organic soils are used mainly for general landscaping, including topsoil applications and for use in garden beds.

#### Benefits

The use of *recycled organic* materials, such as compost, as a component of these mixes not only reduces demand on natural soil reserves, but can also contribute to:

- Reduced soil bulk density, allowing for easier handling;
- Improved total water holding capacity;
- Improved air-filled porosity;
- Improved nutrient levels;
- Improved nutrient retention (through improved cation exchange capacity); and
- Improved plant disease suppression properties (Hoitink and Fahy, 1986; Handreck and Black, 1999).

#### Risks

Low density soils that comply with Australian Standard 4419 (2002) are free from weeds or plant/animal pathogenic microorganisms and do not have any phytotoxic effects on plants.

If the application of an organic soil exceeds that recommended by Australian Standard 4419 (2002) (see application rates), then damage to plants can occur through oxygen depletion in the root zone by continued microbial decomposition

**Plate 1.** Photograph of an organic soil used for general landscaping purposes.



of the organic fraction present in the organic soil.

## Additives

The addition of a nitrogenous fertiliser to organic soils that are low in nitrogen ensures that these soils will not cause nitrogen deficiency in plants.

## Application rates

Australian Standard 4419 (2002) recommends that organic soils are not applied to a depth of any more than 150 mm. This is because at greater depths, putrefaction of the lower layers is likely and this can damage plants.

Where greater soil depths are required, the lower part of the new soil should be made of mineral soil with a similar or finer texture to the organic soil applied above it (Standards Australia, 2002).

## Application methods

Applications to garden beds and relatively small areas can be done with a wheel barrow, spade and rake.

For larger landscaping applications, organic soils can be added with a skid steer loader (e.g. bobcat).

## Definitions\*

### General purpose soil

A material consisting of natural soil, amended natural soil, a blend of sand and organic materials or a blend of sand, natural soil materials and organic materials, which is suitable for the culture of plants usually grown in domestic gardens and landscaped areas.

### Natural soil

A soil that has been dug from the landscape and is presented for use with no more than minor amendment. This soil could be topsoil, subsoil or a mixture of them. Typically it will have a bulk density of greater than 0.7 kg/L.

### Recycled organics

The term Recycled Organics has been adopted by Resource NSW as a generic term for a range of products manufactured from compostable organic materials (garden organics, food organics, residual wood and timber, biosolids and agricultural organics).

\* Recycled Organics Unit (2002b).

## Important references

- Handreck, K.A. and N.D. Black (1999). Growing Media for Ornamental Plants and Turf. University of New South Wales Press, Sydney, Australia.
- Hoitink, H.A.J. and P.C. Fahy (1986). Basis for the control of soilborne plant pathogens with composts. *Annual Review of Phytopathology*, 24: 93-114.
- Recycled Organics Unit (2002a). Producing Quality Compost: Operation and management guide to support the consistent production of quality compost and productions containing recycled organics. Third Edition. Recycled Organics Unit, internet publication: <http://www.recycledorganics.com>
- Recycled Organics Unit (2002b). Recycled Organics Industry Dictionary & Thesaurus: standard terminology for the recycled organics industry. Recycled Organics Unit, internet publication: <http://www.rolibrary.com>
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