

Information Sheet No. 7-1-3
Third Edition 2007

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Definition

A *pasteurised* organic product that is suitable for placing on soil surfaces. Organic in this context excludes polymers (e.g. plastics, rubber and coatings), which do not readily degrade.

Mulch has at least 70% by mass of its particles with a maximum size of greater than 16 mm (Standards Australia AS 4454, 2002). See Information Sheet No. 3-8, “*Introduction to Australian Standard AS 4454-2002 for composts soil conditioners and mulches*” in the “*Producing Quality Compost*” package of Information Sheets for more details (Recycled Organics Unit, 2002a).

Uses

Pasteurised mulches are usually applied to soil surfaces and are not incorporated or mixed into soil. Pasteurised mulches can be beneficially applied to soils in a variety of applications, including: home gardens; community open space; urban landscaping;

agriculture; forestry, and for soil and site rehabilitation.

Benefits

Pasteurised mulches provide a range of benefits when applied to soils. These include: reduced soil erosion, particularly in areas with exposed soils; a reduction in water loss through evaporation, thereby reducing the frequency of watering to maintain plant growth; inhibits the establishment of weeds and can suppress existing weeds, thereby reducing herbicide usage.

Pasteurised mulches are usually cheaper than composted mulches because they require less processing time during the composting process. However, because they are not mature, they still undergo decomposition and will not last as long on the ground as a more mature composted mulch.

Risks

Minimal, if handled and used correctly.

Plate 1. Examples of mulch applications to garden beds.



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ISBN 1-876850-03-5

Pasteurised mulches do not spread weeds, seeds or plant/animal pathogenic microorganisms as they have been heat treated during the composting process.

Effective *pasteurisation* via an aerobic and thermophilic (>55°C) compost, or equivalent process, destroys weeds, seeds and plant/animal pathogens that may have been present in the original plant and other organic materials.

In most instances pasteurised products should be considered superior to shredded plant material products (e.g. leaf mulches), because non-pasteurised products increase the risk of spreading weeds, seeds or plant/animal pathogens.

Pasteurised mulches do, however, still undergo decomposition, as they are not fully mature.

Some pasteurised mulch products may have an elevated electrical conductivity (EC) due to excessive levels of soluble salts. EC levels may restrict the maximum application rates for some product, see details below.

Because pasteurised mulches are not fully mature, they should not be bagged and stacked on large pallets because the generation of heat from the continuing decomposition process may compromise the integrity of the plastic bag. If bagged,

the bag should contain adequate perforations to allow air exchange, thereby preventing the development of anaerobic conditions and nuisance odours.

Additives

Pasteurised mulches are generally considered as low-grade products compared to mature composted equivalents, so additives are rarely incorporated into these products.

Application rates

The rate of application of pasteurised mulch to soil depends upon the coarseness of the product, though most can be applied to a maximum depth of 100 mm or 100 L/m². At greater application rates, oxygen movement through the mulch and into soil reduces, and can impair plant growth. Plants absorb some oxygen via their root systems, and this is needed to maintain good root function.

For pasteurised mulches that are high in soluble salts (measured as electrical conductivity, dS/m), application rates may be limited as soluble salts that leach out can cause water stress in plants. If the pasteurised mulch has an electrical conductivity in excess of 1 dS/m, application rates need to be restricted, depending on the sensitivity of the plant(s) to salt. See Information Sheet 6-6, "Use of

Definitions*

Pasteurisation

The process whereby organic materials are treated to kill plant and animal pathogens and weed propagules.

* Recycled Organics Unit (2002b).

recycled organics products – Importance of electrical conductivity” from the “*Buyers Guide for Recycled Organics Products*” for more information.

Application methods

Application to garden soils and relatively small areas can be done with a wheelbarrow, spade and rake.

For larger areas, such as agricultural or forestry applications, fine mulches can be spread with a manure spreader.

A recent technology developed allows the delivery of mulch via a flexible hose with a blowing unit mounted on a truck containing the mulch. This system is useful for the efficient delivery of fine mulch, particularly in areas difficult to access, such as steep areas (e.g. roadsides for erosion control application).

Important references

- Recycled Organics Unit (2002a). Producing Quality Compost: Operation and management guide to support the consistent production of quality compost and products 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>
- Standards Australia (2002). AS 4454—Composts, soil conditioners and mulches. Standards Australia, Homebush, NSW.

Acknowledgements

The development of this information package has been funded by Resource NSW.

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