

## Information Sheet No. 7-1-2

### Pasteurised fine mulch

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#### Definition

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

Pasteurised fine mulch has between 20% and 70% by mass of its particles with a maximum size above 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 fine 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 fine mulches have a number 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.

Some products release nutrients for plant uptake, thereby reducing the requirement for chemical fertilisers.

Pasteurised fine mulches are usually cheaper than composted fine mulches because they require less processing time. However, because they are not mature, they still undergo rapid decomposition and will have a relatively short life span when applied to soil, compared with mature composted fine mulch.

**Plate 1.** Photograph of a pasteurised fine mulch added to a garden bed at The University of New South Wales.



## Risks

Minimal, if handled and used correctly.

Effective *pasteurisation* via an aerobic and thermophilic (>55°C) composting 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.

Some pasteurised fine 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 fine 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 fine mulches are generally considered as low-grade products compared with mature composted equivalents, so additives are rarely incorporated into these products.

## Application rates

Pasteurised fine mulch can be applied to soil up to a maximum depth of 80 mm or 80 L/m<sup>2</sup>. At greater application rates, oxygen movement through the mulch and into soil is reduced, and can impair plant growth. Plants absorb some oxygen via their root systems, and this is needed to maintain good root function. Note that coarser mulch products can be applied at a higher rate than fine mulch products as the smaller particle size and higher density of fine mulch is more likely to restrict oxygen transfer to soil.

For pasteurised fine 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 upon the sensitivity of the plant(s) to salt. See Information Sheet 6-6, "*Use of recycled organics products – Importance of electrical*

## Definitions\*

### Pasteurisation

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

\* Recycled Organics Unit (2002b).

*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 wheel barrow, 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.

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