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#### Definition

A specialist potting mix is a growing medium suitable for the establishment and development of plants with specialised requirements in containers.

There are seven types of specialised potting mix defined in Australian Standard AS 3743, (2002). See Information Sheet No. 3-9, “*Introduction to Australian Standard AS 3743–2002 for potting mixes*” in the “*Producing Quality Compost*” package of Information Sheets for more details (Recycled Organics Unit, 2002a).

These mixes are specified for: African violets; bulbs; hanging baskets; seedlings; orchids; acid-loving plants, and plants that are sensitive to phosphorus.

The Standard provides specifications for both regular and premium grade mixes. Regular grade specialist potting mixes, in general, require a balanced fertiliser at potting, whereas premium grade specialist potting mixes do not.

#### Uses

Specialist potting mixes can support the growth of plants with specialised chemical and physical potting media requirements (see AS 3743–2002 for details). Such mixes can be used for indoor and outdoor domestic plants in plastic containers, baskets or tubs, and for establishing and growing plants in commercial nursery applications.

#### Benefits

Specialist potting mixes containing a proportion of recycled organics product (e.g. *composted soil conditioner* or *composted fine mulch*) in the mixture have a number of advantages over similar products that contain *raw* organic materials (e.g. bark) or other inert materials.

The organic matter in the recycled organics fraction can:

- Hold water and supply it to plants effectively between waterings;
- Release nitrogen, phosphorus, potassium and trace elements needed for plant growth;
- Temporarily bind nutrients when fertilisers are applied, thereby

**Plate 1.** The photographs below depict a specialist potting mix manufactured from composted and inert (e.g. sand, vermiculite, pumice) materials (left), which is used for plants such as African Violets (right) with specialised requirements.



increasing the efficiency of fertiliser usage;

- Microorganisms present in the composted fraction can also suppress plant diseases and reduce the need for fungicide and bactericide applications. Such mixes may not require steam sterilisation before use (as do peats, for example, to remove potential pathogens), and
- Mature composted recycled organics products do not undergo significant decomposition in the pot, and therefore do not undergo significant settling or compaction with time.

## Risks

Minimal. Mature composts used in potting mixes are stable and can stimulate plant growth. They are pasteurised, meaning that they are free from plant pathogens (disease organisms) or weeds.

## Additives

Composts are usually combined with an inert support material to maintain air-filled porosity and to ensure that a suitable level of water holding capacity is obtained. Examples include: sand, gravel, perlite, vermiculite, scoria and pumice. Composts can comprise up to 50% (by volume) of a mix; the remainder consisting mainly of the inert support

material.

Some regular grade specialist potting mixes require a balanced fertiliser at time of potting to provide adequate nutrients for plant growth. Premium grade specialist potting mixes contain enough soluble nutrients to maintain plant growth for one month, though, thereafter a balanced fertiliser needs to be used.

Some mixes (e.g. acid mixes) need to be high in iron, and thus they may be amended with an iron-based fertiliser (e.g. iron sulfate).

Wetting agents can be added to improve wettability.

Zeolites may be added to improve fertiliser efficiency through retention of soluble nitrogen ( $\text{NH}_4^+$  ions).

## Application methods

Specialist potting mixes are added to horticultural pots or other containers and planting can be done directly into the mix. Very dry potting mixes may require some pre-wetting with water before use.

## Definitions\*

### Composted soil conditioner

Any pasteurised product which has undergone composting for a period of not less than 6 weeks (excluding polymers which do not degrade such as plastics, rubber and coatings) that is suitable for adding (incorporating) to soils. Composted soil conditioner has not more than 20% by mass of particles with a maximum size above 16 mm.

### Composted fine mulch

Any pasteurised product which has undergone composting for a period of not less than 6 weeks (excluding polymers which do not degrade such as plastics, rubber and coatings) that is suitable for placing on soil surfaces. Composted fine mulch has not more than 20% by mass of its particles with a maximum size above 16 mm.

### Raw product

Any compostable organic material that is distributed as a recycled organic product without having been subjected to a pasteurisation or composting process, and may contain weed propagules and pathogenic microorganisms.

\* Recycled Organics Unit (2002b).

## 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 NSW recycled organics industry. Recycled Organics Unit, internet publication: <http://www.rolibrary.com>
- Standards Australia (2002). AS 3743—Potting Mixes. Standards Australia, Homebush, NSW.

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