

Technical Information: Growing media

Growing Media

Composted material can be a major cost-effective component of growing media. Not only is it a sustainable, well-structured substrate, but also a source of nutrients and buffering capacity.

Compost characteristics

Parameters	Reported as (units of measure)	Recommended Range
pH*	pH units (1:5 water extract)	8.5 maximum
Electrical Conductivity	$\mu\text{S/cm}$ or mS/m (1:5 water extract)	1000 $\mu\text{S/cm}$ or 100 mS/m maximum
Moisture Content	% m/m of fresh weight	35% minimum 55% maximum
Bulk density (fresh weight basis)	Grams per litre	600 maximum
Organic Matter Content	%, dry weight basis	25% minimum
Screen Aperture Size	mm	10 maximum

*The pH level of Fairfield's compost is 7.0.

The bulk density of composted material is higher than that of, for example peat. However, once blended with peat or other substrates at typical rates of use such as 2:1 (diluent : composted material), the difference is reduced. Once thoroughly watered, such differences are often small.

The screen size specified is suitable for most growing media. Special end uses may require a different particle size range e.g. cell trays would require a finer grade in which 'spears' have been eliminated by twin-screening.

Air-filled porosity (AFP) and water-holding capacity (WHC) of growing media are dependent on the proportion of particle sizes in the mix. Ideal AFP/WHC varies with cultivar, container size, irrigation system and other circumstances.

The composted material should be free-flowing in order to facilitate efficient blending, bagging and, eventually, filling of plant containers. Flow properties are a function not only of particle size and shape but also of moisture content.

Benefits of using compost in growing media:

- Provision of nutrients
- Reduced nutrient leaching
- Enhanced buffering
- Suppression of plant disease
- Suppression of algae, liverwort and moss
- Enhanced wettability
- Reduced lime requirement

How to use composted material

Composting material can be used in a range of blends with other substrates according to the application, e.g. cell trays or pots. The formulation should be soundly based on analysis of the composted materials.

Successful blends have been used from 10% to 60% depending on crop type and production system.

Where composted material is diluted with bark and/or other woody substrates, a nitrogen (N) supply is usually required to prevent N lock-up by fungi in the bark etc.