

Technical Information – Planting bed establishment/soil amendment (landscaping)

New planting schemes are often sited on nutrient poor soils which have been depleted of organic matter. In many cases, the soil has been disturbed following building or construction. In order to create a suitable substrate for the plants to root into, the soils need to be enriched with humus to improve the soil properties.

Compost characteristics

Fairfield's compost is made from fruit, vegetable, plant and woody waste. These are some recommended compost properties for use in improving and amending soil.

Parameters	Reported as (units of measure)	Recommended Range
pH*	pH units (1:5 water extract)	7.0 – 8.7
Electrical Conductivity	µS/cm or mS/m (1:5 water extract)	2000 µS/cm max or 200 mS/max
Moisture Content	% m/m of fresh weight	35 - 55
Organic Matter Content	%, dry weight basis	>25
Screen Aperture Size	mm	25 Maximum
C:N Ratio		20:1 Maximum

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

Compost also provides the following available nutrients (these are approximate amounts based on typical analysis):

Depth over an area	Cubic metres per 100m ²	Cubic metres per hectare	Tonnes per hectare	Tonnes dry matter per hectare	N*	P ₂ O ₅	K ₂ O
0.6cm ¼"	0.6	60	30	19	24	45	144
1.2cm ½"	1.2	120	60	38	48	90	288
2.5cm 1"	2.5	250	125	79	100	190	600
5.0cm 2 "	5.0	500	250	158	200	380	1200

*kg per hectare

Note: Compost kitchen or vegetable materials may have higher nutrient contents than those for composted garden materials.

By comparison, inorganic fertilisers provide the following nutrients:

Product	Analysis	Rate	N	P ₂ O ₅ Kg/ha	K ₂ O Kg/ha
Potassium Sulphate	48% K ₂ O	35g/m ²			
Superphosphate	18% P ₂ O ₅	70g/m ²		126	
Ammonium Sulphate	21% N	70g/m ²	147		

How to use compost

Soil Improvement

The Fairfield Fine 10mm compost grade is highly suitable for use as a soil amendment, but the compost application rate will vary, depending on soil conditions.

A soil analysis test will help to determine application rates.

A typical rate is a 50mm layer, which is mixed into the top 150-200 mm of the soil. This gives an incorporation rate of approximately 20-25% by volume. Lower inclusion rates may be necessary for salt-sensitive crops such as Primula, or where composts with higher salt levels are used.

Higher inclusion rates, up to 100 mm or more, may be required if the recipient soil is particularly poorly structured or has been depleted of nutrients.

Once the compost inclusion rate is chosen, a representative blend of soil and compost can be produced and analysed prior to planting. This will identify the new soil characteristics, including soluble salt (expressed as electric conductivity) and organic matter content, as well as identify the appropriate fertiliser rates and pH adjustment necessary for optimum plant growth. Composts tend to contain the full range of trace elements, e.g. zinc, copper, manganese and boron.

Many conventional fertilisers do not contain trace elements; those that do are relatively expensive.

As they are only needed in small quantities, trace element applications should not be required when using compost in planting schemes.

Container Planting

Soils modified for ornamental planting mixes should contain at least 5% organic matter. By using compost as the organic matter source, landscapers get the added benefits of various macro and micronutrients, a stabilised pH, and a supply of beneficial micro-organisms.

Planter mixes can contain up to approximately $\frac{1}{3}$ compost. At high inclusion rates many perennial and annual species will not require fertiliser. However, gross feeders should be given additional nitrogen.

Care must be taken with some ericaceous subjects (e.g. heathers, rhododendrons). Soils above pH 6.5 will adversely affect the growth of plants requiring an acid soil. However, a lower rate of compost can be used, e.g. 10% by volume, as long as the other components in the mix are not alkaline (over pH 7).

Site conditions

The site drainage must be adequate before planting takes place. Subsoils may need to be ripped to relieve compacted layers. This should not be done when the soil is too wet.

Plastic drainage tubes, gravel filled holes, and other methods can be used to assure proper site drainage below or around the planting holes.

Where soils are particularly low in nutrients compost may be supplemented with a nitrogen fertiliser. Nitrogen in compost is mainly in a slow-release form and may not provide enough nitrogen in the first few weeks of growth.

On-going Maintenance

In subsequent years, compost may be applied at 25-75mm depth as a mulch, or raked in to the soil, replacing the need for any additional fertilisers.