

Technical Information: Fruit Production

Obtain quality fruit by using quality compost

Fruit production in the United Kingdom is intensive, requiring high inputs from growers. Soils in fruit plantations and top fruit orchards can become depleted of organic matter and nutrients, creating poor soils with reduced yields.

Compost characteristics

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

Agricultural Parameters	Reported as (units of measure)	Recommended Range
pH*	pH units (1:5 water extract)	7.0 – 8.7
Moisture Content	% m/m of fresh weight	35 - 55
Organic Matter Content	% dry weight basis	>25
Screen Aperture Size	mm	40 Maximum for soil improvement 25 Maximum for top dressing grassland
C:N Ratio		20:1 Maximum

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

Compost also provides the following available nutrients (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

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

How to use compost

Soil Amendment

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 as a soil amendment in fruit production.

Use as a backfill mix in top and bush fruit production

For use in backfill mixes the compost should be well decomposed.

Composts can eliminate the need to add major nutrients during planting. In addition, composts tend to contain the full range of minor nutrients and 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 backfill mixes.

Plant tolerance of soluble salt levels are soil and species dependent. Soluble salts should not be a significant problem with most woody species. However, care should be taken when bare root and salt-sensitive crops are planted.

The inclusion rate of compost in the backfill mix will vary, based on the species to be grown and the characteristics of the soil to be blended but the preferred inclusion rate is approximately one third compost by volume. Prepare the root-balled, containerised, or bare root plants in accordance with the industry

standard methods before planting. The planting hole should be slightly deeper than the root ball and two to four times its width. The soil removed from the planting hole should be thoroughly mixed with compost at a rate of two parts soil to one part compost. Use this material to backfill around the root ball, firming occasionally to remove air pockets. The trees or shrubs should then be watered in and preferably mulched.

Use as a mulch

Coarser grade composts which consist of relatively large woody fragments are preferable for use as mulches as they do not decompose as readily as composts consisting of fine particles and remain in place for longer. The surface of coarse materials dries out rapidly, inhibiting weed seed germination. Therefore, avoid mulches that mainly consist of fine particles less than 10mm in size.

Apply the compost evenly on the surface of the soil around the plants in the row to a depth of 50mm, creating a solid mat of compost mulch. Avoid placing mulch against the tree trunk or main leader of the bush, as this can cause damage to the protective bark layer of the stem. Usually, compost that is high in soluble salts, reduce the amount of compost to be applied, and the mulch should be well watered.

Control of weed species is one of the most important effects of mulches. To suppress weeds physically, a 100mm thick mulch layer may be required. In general, the germination of weed seeds declines as burial depth increases. Additionally, organic mulches gradually improve the physical and biological properties of the soil, because they decompose and become incorporated into the soil over a longer time. Compost has a similar effect to soil conditioners.

Maintenance of planted areas

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

Site conditions

The site drainage must be adequate or improved before applying compost. Subsoils may need to be ripped to relieve compacted layers.

This should not be done when the soil is too wet.

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

