

## What is green compost and why should I use it?

Green compost is a natural product made by mixing, stacking and turning biodegradable materials under managed conditions. The compost sold by The Green Waste Company from its Splattenriden and Higher Brynn recycling sites has been made from a mixture of plant materials recycled from parks, gardens and households. This compost has been processed under controlled conditions to produce a high quality product, as defined by the British Standards Institution's Publicly Available Specification 100:2011 (BSI PAS 100:2011).

### Potential benefits of using compost

Organic matter in soil is essential for good soil structure, water holding properties, microbial activity and soil health. Composts can be used to add organic matter to soils and to increase production through a range of benefits as follows:

#### Compost benefits

- reduced need for bagged fertilisers
- reduced nutrient leaching
- increased yielding potential
- potential to improve drainage in heavier soils
- improved water-holding in light soils
- reduced erosion risk
- better soil structure leading to:
  - greater workability of the soil
  - increased traffic tolerance
- beneficial soil microorganisms aid:
  - soil aggregation
  - nutrient recycling
  - plant disease suppression

In addition to providing valuable organic matter to soils, composts act as slow release fertilisers for N and P and provide a readily available source of K. Other nutrients, including Mg, S and trace elements are also provided. The efficiency of inorganic N fertiliser use by plants has been shown to be improved following compost application, due to better overall nutrient supply and improved rooting environment. Compost can also provide a valuable source of calcium and has a small liming effect. It has up to 10% of the neutralising value of lime on a dry matter basis.

### Green compost produced by The Green Waste Company

Compost made by The Green Waste Company at its two sites will vary slightly from batch to batch, but as a general rule, it has the following characteristics.

#### Green Compost (The Green Waste Company) - typical values for important properties

| Compost parameter                | Reported in fresh compost as (units of measure) | Typical value |
|----------------------------------|---|---------------|
| pH                               | pH units (1:5 water extract)                    | 8.3           |
| Moisture content                 | %   | 39            |
| Organic matter content           | %   | 14            |
| Screen aperture size             | mm  | 20            |
| C:N ratio                        | ratio (between % carbon and nitrogen)*          | 14.5          |
| Electrical conductivity          | µS/cm @ 20°C                                    | 925           |
| Total nitrogen                   | kg/tonne (or units/tonne)                       | 9.0 (18.0)    |
| Total phosphate                  | "   | 3.3 (6.6)     |
| Total potash                     | "   | 4.9 (9.8)     |
| Total magnesium (MgO)            | "   | 4.3 (8.6)     |
| Total sulphur (SO <sub>3</sub> ) | "   | 2.4 (4.8)     |

\*This ratio is a measure of the likelihood that N will be rendered temporarily unavailable to plants following compost application. If the ratio is >15:1, this may happen in the first year of application.

Typical application of 25 tonnes of compost/ha (11.3 tonnes/acre) will provide approximately:

| Nutrients                                  | Total amount (kg/ha) | Total amount (units/acre) | Available year 1 (kg/ha) | Available year 2 (kg/ha) |
|--|----------------------|---------------------------|--------------------------|--------------------------|
| Nitrogen as N                              | 234                  | 187                       | ~ 0%                     | ~ 5%                     |
| Phosphate as P <sub>2</sub> O <sub>5</sub> | 83                   | 66                        | 50%                      |                          |
| Potassium as K <sub>2</sub> O              | 123                  | 98                        | 80%                      |                          |
| Magnesium as Mg                            | 108                  | 86                        | 20%                      |                          |
| Sulphur as S                               | 60                   | 48                        | 10%                      |                          |

The Green Waste Company's green compost also contains small amounts of trace elements that are essential to plant growth. It typically contains very low levels of potentially toxic elements. The compost has been tested for human pathogens. It was found to contain no *Salmonella* species and was well within the safe limit for *E. coli* according to the tests required under BSI PAS100:2011. Tests also showed that there was no contamination with weed seeds and that plants grew well in the growing trials specified under the standard. This compost is stable and mature. It typically contains negligible contamination in the form of plastic, metals and glass.

### How to use green compost

The compost should be applied according to crop need for nutrients in conjunction with bagged fertiliser. The needs of the soil for the full crop rotation should be considered when assessing other major nutrients. Regulations relating to codes of good agricultural practice should be followed (e.g. NVZ regulations and the Defra Code of Good Agricultural Practice for Farmers, Growers and Land Managers). NVZ regulations and Waste Management Licensing allow a maximum of 250 kg/ha N to be applied from bulky organic fertilisers including compost in any 12 month period in each field. Following a recent revision to the NVZ regulations, it is also now possible to apply compost to perennial crops in NVZs at a rate which supplies 500 kg/ha N in any 24 month period in each field. It is also possible to apply compost as a mulch in top fruit orchards in NVZs at a rate which supplies 1000 kg/ha N in any 48 month period.

Compost is most easily applied using a spreader with a moving floor and rear discharge. In order to maximise its effects on soil structure, it should be mixed into the soil and not simply inverted into a buried layer by the plough. Unlike animal manures and bagged nitrogen fertilisers, which are high in available N, compost is not. It is therefore safe to apply it in the autumn without the risk of significant leaching. Very little if any of the N in green compost will become available to crops in the year of application and it is best not to count any of the N when calculating bagged fertiliser requirement. However, where green composts are applied regularly over time, it will be possible (and necessary in the case of some crops, such as malting barley) to reduce bagged N applications in future years. Surface applications of compost to grass immediately after the first cut of silage can be particularly beneficial due to its K and S content, coupled with its slow N release rate. Compost should be applied when grass is actively growing and nutrient demand is high. Grass should not be grazed for 3 weeks after application to allow grass to grow through the compost. Ensure that your assurance schemes and buyers are happy for you to use compost before you apply it.

### Cost benefits

The inorganic fertiliser replacement value of The Green Waste Company's compost is currently between £4 and £5 per fresh tonne depending on fertiliser prices and compost nutrient content. Not all of the nutrients in compost are immediately available, but compost applications can improve the health and quality of soils and the value of land in the longer term. Organic matter greatly improves the quality of many types of soils and thereby improves its ability to support the production of good yields of healthy crops. Improved soil quality can lead to savings in fuel during cultivations, reduce the frequency of irrigations, saving labour and water and can allow machinery on to land on more days in the year without damaging soil structure. These benefits are difficult to quantify, but farmers do tend to notice them when compost has been applied. Spreading costs are generally about £1 - 3 per tonne depending whether farm machinery is used or contractors employed. Distance from the composting site is a significant factor in the cost of compost and the high cost of transporting compost means that

farms close to the composting site will find it easier to justify the cost of using compost. It makes sense to use compost on both soils and crops, which are likely to show the greatest response.

### **Safe handling and use**

Every effort has been made to ensure that this compost contains no sharp fragments, toxins, weed seeds or regenerative plant parts. However, the compost producer cannot guarantee that they will never be present. As with all products of this type, wear gloves when handling and wash hands after use. During handling, avoid inhaling any dust or water vapour or droplets from it, or ingesting any of it.