

**Compost can be used in a variety of situations, including residential and commercial lawns, sports grounds, athletic fields and golf courses. Excellent results can be achieved when using compost to both establish and renovate turf.**

Greenkeepers and turf specialists are confident about the quality of compost available. Thanks to a compost certification scheme for BSI PAS 100 in Northern Ireland and in Ireland the national compost quality assurance is being developed. All composting sites in Ireland meet compost quality standards as part of their waste permits/licences.

## Benefits of Compost

Compost contains slow release nitrogen plus other major and minor nutrients that can replace fertilisers, leading to reduced inputs. Unlike sand-based dressings, compost can retain nutrients and make them available to the plant for a longer period. Grass therefore remains green without excessive growth and so mowing frequency is low.

- ▶ Increased root growth from slow release phosphate
- ▶ Faster turf establishment
- ▶ Improved turf density and colour from slow release nitrogen, iron and magnesium
- ▶ Improved soil drainage
- ▶ Increased water holding capacity
- ▶ Reduced soil compaction
- ▶ Reduced requirement for fertiliser and irrigation
- ▶ Reduced nutrient leaching and increased soil cation exchange capacity
- ▶ Higher nutrient buffering capacity
- ▶ Plant disease suppression

Compost can suppress many turf grass diseases because it is a biologically active material. Studies carried out on golf courses and sports pitches in the USA and Canada have demonstrated a reduction in the severity and incidence of a wide range of turf diseases, particularly when applied as a top dressing or used as a root zone amendment.

## How to Use Compost

### Turf establishment

Compost should be applied at 25 – 50 mm deep and then incorporated to an approximate depth of 100 – 150 mm. The compost application rate will vary depending on the soil conditions, compost characteristics, and turf species to be established. A soil analysis test is recommended to establish the quality of the site soil. Once incorporated, a proper seed bed should be established and the seed lightly brushed into the surface using a drag mat or rake. Turf may be applied directly on to the soil surface either manually, or with specialised equipment. Once planting is completed, the area should be fertilised if necessary and watered on an ongoing basis to ensure adequate rooting.

## Turf topdressing

Compost can be used as a topdressing for all areas of turf, either as a component of a mix, or on its own. Compost can be blended with various other materials such as sand and loam to produce a product that matches requirements, especially closely mown fine turf and sand dominated, free draining sports turf root zones. Apply to the turf surface at a rate of 6 mm to 12 mm, brush in and water if necessary. Use the lower rate on sports turf and lawns and the higher rate on low maintenance grass and roadside verges. Core aeration techniques can also be used. The compost should be moist but flowable to facilitate application.

## Divot repair

Divots can be fixed effectively using a blend of compost and grass seed mix. The compost contains nutrients and holds moisture, and the dark colour can help to absorb heat from the sun, speeding up germination in cooler periods.

## 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. 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.

## Case Studies

### K Club Golf Course, County Kildare

Cré and WRAP funded trials at the K Club Golf Course, County Kildare to investigate the use of high quality composted materials in the maintenance of golf fairways. The trials were conducted by OCAE, R. Alexander and the Sports Turf Research Institute.



Even though the compost trials performed at the K-Club were short in duration (3 months), several trends can be taken from it:

- ▶ Compost application did not affect the incidence of weed infestation;
- ▶ There was no effect on soil pH from the compost applied;
- ▶ Compost addition increased the organic matter content of the soil.
- ▶ Compost application provided a significant quick release of nitrogen to turf, providing a quick 'green-up' effect (within 14 days) without excessive growth. Hence, in a golf fairway application compost could be used to provide a simple means of greening up turf quickly and evenly. However, by the end of the trial it was obvious by observation of the turf colour that additional nitrogen fertiliser was required.
- ▶ The application of both types (garden and garden/food material compost) of composted materials provided nutrients to the trial plots, compared to plots with no compost added;
- ▶ There was some evidence of reduced incidence of disease on the plots treated with compost materials late in trial (at the day 56 and 70), compared to plots without.
- ▶ There was no significant effect on worm castings from compost application;
- ▶ The application of compost did provide a boost to growth and visual appearance of the turf, even at the lowest application rate used. Because of the initial dark visual impact of compost after application to the turf surface at the 12mm rate, it would be advisable to apply, 9mm at most, to the fairway turf.
- ▶ It is recommended that 9mm be used as an application rate, because there was less weed cover on both the clay and sandy sites compared to the other compost treatment and control.

### Guidelines

Based on the results of these trials the following guidelines are given for the use of compost on turf:

- ▶ Compost: <10mm grade although <5mm is preferable
- ▶ Apply 40 tonnes per ha per dressing
- ▶ Apply in early March to September

### Loughgall Country Park Golf Course in County Armagh

Keen golfers at Loughgall Country Park golf course in Armagh, Northern Ireland have BSI PAS 100 compost to thank for the improvement in the quality of the fairways and tees. Opened in 2000, the municipal 18 hole golf course is set in the grounds of the

magnificent Loughgall Country Park and is one of the first in Northern Ireland to specify the use of compost. In 2004, Country Park manager, Greg Ferson, approved a trial of BSI PAS 100 compost after hearing about the success of a similar project at Epping Golf Course in Essex.

Sourced from accredited producer Natural World Products, where the golf course already sent its grass cuttings and clippings for recycling, the compost was applied to three fairways and one sand based fairway landing area. Greg explained: "We selected four different areas of the course with varying soils so that we could establish the performance of the compost in different conditions. On two of the fairways chosen we had an issue with the grass growth and colour and hoped that the compost would rectify this. All suffered from uneven and unhealthy growth in addition to low nutrient levels."

"Within a couple of weeks the results were already visible. We directly compared the areas which had been applied with BSI PAS 100 compost with those where no compost had been used. There was a significant difference in the growth and colour of the grass," said Greg.

"We're delighted with the results of the trial and will be continuing to use compost around the course, especially on the areas where there is a high clay content as the compost improves the soil structure by introducing more oxygen and improving its water holding capacity. As we are a council-owned course, it is excellent that we can demonstrate our commitment to recycling by putting compost back into the course in a way which is improving its quality and playability," said Greg.

### Compost Network

Cré Compost Skillnet is a training network whose main aim is to train compost operators to produce high quality compost and to train organic farmers/landscapers how to use compost. If you are interested in finding out more about this training network log on [www.cre.ie](http://www.cre.ie) or call 086 8129260.

Cré Compost Skillnet is funded by member companies and the Training Networks Programme, an initiative of Skillnets Ltd. funded from the National Training Fund through the Department of Education and Skills.

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