

What's In Your TOPSOIL?

Over the last 5 years there has been a massive increase in the number of topsoil suppliers

With this proliferation has come a big variation in quality. Hopefully this article will help you make the right choice and buy what is fit for your intended purpose.

The British Standard for TOPSOIL BS3882:2007 is designed to help you when buying a topsoil. So getting familiar with it. It will help.

All good suppliers of topsoil should be able to provide you with a "Declaration to BS3882:2007" which says that they provide a quality controlled product

Good topsoil is a balanced mixture of mineral particles, water, nutrients, organic matter, air and living organisms.

Soil Texture

This is the proportion of sand, silt and clay within a topsoil.

Sandy Loam, sand 70%, Silt 18% and Clay 12% is an ideal textural classification for a general purpose topsoil.

Organic matter (OM) consists of living organisms and is very important to soil function and plant growth as it influences soil structure and hence aeration, drainage and root growth, water-holding capacity and soil fertility.

OM helps to bind mineral particles into granular or crumb structures and the proportion of water that is available for plant uptake. It is a major source of essential plant nutrients including nitrogen, phosphorus, potassium and sulphur.

It is also the food for soil organisms, and without it, biochemical activity, which is essential for ecosystem functioning, would cease.

However too much OM, especially if immature, can lead to:

- A deficiency in nitrogen as the OM uses the nitrogen in the soil to fuel the composting cycle
- Unstable ground and planting conditions
- Water logging through the retention of too much water

A good quality topsoil should have OM content of between 3% to 20%

pH

pH is the measure of the acidity or alkalinity of a soil. It affects nearly all soil properties and is a major factor in determining where trees, shrubs and grasses will grow. It influences structural stability, plant nutrient availability, microbe activity and soil pollutant mobility.

A good quality topsoil should have pH 5.5–8.5

Electrical Conductivity

General measure of the soluble salt content or salinity of a soil, a good quality topsoil should have an electrical conductivity value within the range of 100-1500uS/cm (soil : water extract).

Nutrients

A good topsoil should be adequately supplied with the major nutrients Nitrogen, Phosphorus, Potassium and Magnesium.

Nutrient	Purpose	Ideal available Plant Nutrient
Nitrogen	Growth of leaves and stems	>0.15%
Phosphorous	Root growth and development	16-100 mg/l
Potassium	Cell growth and development	121-900 mg/l
Magnesium	A constituent of chlorophyll, the green pigment, which enables plants to photosynthesise	51-600 mg/l

Carbon / Nitrogen (C/N) ratios

Topsoil's that have a C/N of 30:1 and over, have too little N to allow for rapid decomposition. Therefore, the microorganisms will take ammonium and nitrate out of the soil to fuel decomposition. This depletes the soil of nitrate and ammonium. Topsoil's with low C/N ratios (20:1 and less) have sufficient N for the microorganisms to decompose the residues without taking from the soil. A good topsoil should have a C/N ratio of <20:1

Potentially Toxic Elements (PTEs)

PTE's are chemicals which can be harmful to human health and the environment such arsenic, mercury and lead.

Where does the topsoil come from? As a non-renewable resource it is important that you buy a responsibly sourced topsoil. Please ask your supplier where he gets his topsoil from. Digging it out of fields is not a responsible nor sustainable practice and should be discouraged.

Generally speaking always look to purchase a TOPSOIL from a known and consistent source.

Always ask for a certificate of analysis and check the dates on the certificate to ensure it is current information.

The sources of topsoil are:

Natural Topsoil: this may come from Greenfield developments. As the source varies, so may the quality. Always ask where the topsoil is sourced from.

Skip Waste Soil: this comes from site demolition or skips waste recycling facilities. The horticultural qualities of topsoil's from this source are questionable and an analysis of the product should be requested. The analysis should cover pH, conductivity, OM%, nutrient content, Physical Contaminants "Glass, Nails" & Chemical Contaminants "Heavy metals"

Manufactured Topsoil: Ensure that your topsoil is produced from high quality ingredients such as a BS3882:2007 compliant topsoil and PAS100 greenwaste compost.

But please beware that some manufactured topsoil are being produced with low quality topsoil's, sands and excessive amounts of immature green waste compost. The stability and horticultural properties of these topsoil's is questionable.

Andy Spetch

British Sugar TOPSOIL