

# Managing your Soil

A fertile soil is one with both a good structure and a good supply of plant foods. When managing your soil, hold both these objectives in mind. Aim to protect and maintain what you have, as well as looking at ways of improving it.

## Cultivation

The first impulse for many gardeners, when faced with an empty plot, is to reach for a spade and dig. This might not always be the best course of action. Digging is a good method of breaking up a hard layer or 'pan', loosening compacted or heavy soil, and exposing soil pests to predators. But digging also speeds up the breakdown of organic matter (an essential and valuable component of a fertile soil), encourages weed seeds to germinate, releases nutrients, and can damage soil structure. To protect your soil, dig only where necessary, or consider a no-dig system.

If you have clay soil, the 'window' for digging can be short. Such soils are usually dug in the early autumn, allowing frosty weather to break up the heavy clods over winter so a seed bed can be prepared in the spring. This does little in the long term for soil structure so it is not an alternative to soil improvement with organic matter.

Other soils can be covered with a mulch or green manure over winter and dug, if required, in the spring.

## Digging tips

- Avoid mixing subsoil and topsoil; there is a change in colour between the two layers.
- Use a small, sharp spade and stop regularly to stretch.
- Never cultivate a soil that is frozen, dried into solid lumps or wet enough to stick to your tools.

## Beds

If you can avoid walking on your beds you will avoid soil compaction. Consider a raised bed system, so that all work can be carried out from surrounding paths. Alternatively, use a plank or similar to spread your weight. Never walk on wet and sticky soils.



## No Digging

A garden can be run without regular digging so long as compaction or drainage problems are sorted out first. A no-dig, or reduced dig, system is worth trying on both heavy and light soils, especially with fixed beds that are not walked on. Apply manure and compost to the surface as a mulch, the worms and the weather will do the rest.

## Soil improvers

Dead plants and leaves, compost and manures are all forms of bulky organic matter. Microscopic soil creatures feed on it, releasing food for growing plants. They mix it up with the mineral components of the soil, improving drainage on heavy soils, helping light soils to hold water and reducing erosion. Aim to maintain or increase levels of organic matter in the soil using a combination of materials.

### Compost and strawy animal manures

Either homemade compost or animal manure will add nutrients and improve the soil structure. All manures should be well rotted or composted before use. Too much straw can lock up nitrogen making it unavailable to plants.

### Leafmould

Contains few plant foods but can be used to improve structure and water holding. It can also help to release plant foods in heavy soils, and to hold on to those present in light soils, improving fertility without directly adding nutrients.

### Green manures

Green manure can improve soil structure in a number of ways. Any crop which is grown then incorporated into the soil will add organic matter. This will aid soil aeration, increase water and nutrient retention (on light soils) and improve drainage (on heavy soils).

## Lime and liming

If you need to raise the pH of your soil ground limestone and dolomitic limestone (also contains magnesium) are the organic gardener's choice. Their action is much slower and gentler than gardener's lime. They are best applied in the autumn, at a rate of around 250g/sq m (8oz/sq yd). If the soil is very acid, another application may be needed the following year but measure pH first. The full effect is felt in the second year.

Liming an acid soil will help to make certain plant foods more available, and to speed up the decay of thatch on a lawn.

## Over winter

Where annual flowers and vegetables are grown, soil is often left bare over winter, allowing the rains to destroy the structure and wash out goodness. To protect the soil keep it covered with a growing crop, a green manure or mulch. Use a low nutrient mulch such as leafmould or straw, or even newly fallen autumn leaves.

If you prefer to add compost or manure in the autumn, either sow a green manure crop afterwards, apply semi mature compost or cover the soil with a sheet of black plastic.

### How much?

Don't be too lavish with the nutrient rich materials. If you add too much at once, much of the goodness it contains may be washed out before plants can use it.

For more information see the 'Soil Improvers Application Rates' information sheet.

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