

WATERLOGGED SOILS

Constantly wet soils often lack oxygen, which leads to the suffocation of the plant's root system. It can be hard to establish plants in a wet environment as there is a fine balance between too much water when plants are young and too little when they are established. Excess water can kill fragile plants in winter/early spring.



- Try to plant in mid-late spring and raise the planting soil level a few centimetres above the surrounding surface, using good-quality soil and organic matter, to greatly assist survival.
- In very wet winter weather, dig shallow drainage channels around the outer edge of planted areas to allow any surplus water to drain away freely.
- As frost and cold can cause more damage in wet conditions, mulch with a 5cm layer of organic material such as well-rotted farmyard manure, or well-weathered mushroom, garden or planting compost to help protect plants in bad weather.
- Water-loving plants are also hungry feeders, so apply a general fertiliser each spring to help produce bushy, strong-growing and flowering plants.

RECOMMENDED PLANTS: Plants that benefit and flourish in such conditions are those often found growing close to, or even in water.

- **Trees:** *Salix* (willow) in tree and shrub forms, *Alnus* (alder), *Taxodium* (swamp cypress) – a deciduous conifer with attractive foliage and bold bronze autumn tints with roots specially adapted for living in water, *Sambucus* (elder) comes in a range of leaf colours, some with an interesting cut-leaved effect.
- **Herbaceous:** The giant leaves of *Gunnera manicata* and *Rheum palmatum* thrive in wet conditions but take up a lot of room; *Hosta* has foliage and flower interest; *Iris pseudoacorus* (flag iris) produces yellow flowers in early to mid summer; *Lobelia cardinalis* 'Queen Victoria' has deep purple foliage and bright dark red flowers in midsummer; *Astilbe* give bold patches of colour in late spring and early summer; *Mimulus* (monkey flower) has bright, boldly coloured, summer flowers; *Ligularia* comes in many forms; *Caltha palustris* (bog marigold) has yellow, white and double flowering forms in spring, and Candelabra primulas (below) provide early summer colour.



WHAT YOU'LL NEED

- Fork
- Spade
- Possible hire of mini-digger
- Compost activator
- Organic material
- Fertiliser
- Soil test kit

For more information:
www.rhs.org.uk/advice
www.plantforlife.info

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THE EASY GUIDE TO MANAGING YOUR SOIL



MAKE THE MOST OF YOUR SOIL

Although at first site your garden soil appears solid and robust, it is a fragile living environment that must be at the very least protected, and wherever possible improved by certain rules of good soil cultivation. Incorporating organic matter – compost, leafmould, well-rotted farmyard manure or wood and bark chippings – at least twice a year will benefit your soil, making it darker and crumblier and keeping your plants in good health.

COMPOSTING

Most garden and household waste can be composted to offer a useful renewable supply of organic matter by following these guidelines:

- Buy or build (from slatted timber posts and wire, or concrete blocks and bricks) two containers that can hold a year's worth of garden, vegetable and household waste.
- Dig over the soil at the base of the container to encourage microscopic soil animals up the heap to carry out the work of rotting.
- Place a 30cm-layer of vegetable waste in the base – vegetable and fruit peelings, coffee grounds and tea bags, crushed egg shells, old flowers and plants, any annual weeds that have not set seed and leaves.
- Spread a 3cm-thick layer of garden soil on top of the vegetable material and a sprinkling of compost activator. This transports soil animals throughout the heap, and these are fed by the activator.
- Continue to add layers of vegetable waste and soil and compost activator until the top of the container is reached.
- Leave the top open to allow rain water into the heap.
- In early autumn turn the material from the first container into the second to help decomposition.
- The compost will be ready to use the following year.
- Only use up to 25% lawn mowings to 75% vegetable matter. Do not add if weed killer has been used.



NEW-BUILD SOILS

The very worst situation is after the builders have left the site of a newly built house where traces of rubble may be left and the soil has been moved, mixed and worst of all, compacted.

Before the builders started work, the dark fertile top-soil (loam) would have been the top layer and this should have been put back – but often isn't.

Compaction is a problem that must be addressed to ensure that there is no 'pan' or layer of compacted soil. This prevents water from draining away and plant roots from penetrating it in dry spells in their search for water.

'Pans' can show their effects many years after planting and leads to the death of plants and drying out of lawns.

New-build soils will inevitably require double digging in order to address compaction and improve the quality of the soil (see below).

DOUBLE DIGGING

Double digging will address many problems, and cultivate the soil to a depth of 50cm. Adding well-rotted farmyard manure, well-weathered mushroom compost or other proprietary organic material, will help improve the soil by holding in moisture and providing some plant foods.

- Dig a trench one spade or fork deep; 70cm wide. Put the soil to one side to fill the final trench.
- Fork over the base of the trench, adding compost or manure.
- Dig and throw forward the next 70cm, mixing in organic material, so creating the next trench.
- Repeat until the entire plot has been dug and fill in the last trench with soil from the first.

HELPFUL HINTS:

- For large areas, hire a mini digger to help do the job.
- Never attempt to prepare the soil if it is very wet or frozen.
- Aim to keep the fertile top soil on top and the sub-soil below.
- Dig deep if 'pans' are suspected.



CLAY

Clay soil will smear and feel sticky in wet weather. It drains slowly, holding water well, but it may not be available to plant roots. Clay reacts slowly to changes in temperature and stays cold for longer in spring. Digging helps open up the soil and adding large quantities of grit and organic matter will help improve its drainage and workability.

SANDY

Sandy soils are gritty and fall through your fingers. They are free draining, quickly respond to changes in temperature, easy to work and unlikely to waterlog in winter. However, they are low in water reserves and nutrients. Incorporating organic matter will improve the water and nutrient-holding capacity of sandy soils.



Double Digging

- Add plenty of well-rotted organic material.
- On very wet soils add a layer of sharp grit to improve drainage.
- If possible, prepare in autumn to leave winter weather to break down the soil surface naturally.
- Try to stand on a board when digging to prevent compaction.
- Any bricks or rubble unearthed can be salvaged for hardcore, under paths or structures. Odd pieces of timber may be useful for edging borders or producing temporary supports for banks.



ACIDITY / ALKALINITY

Some plants will only tolerate an acid soil, so it is worth testing the soil before planting to find out the amount of acidity present. Your local garden centre or nursery will sell soil test kits, which will determine the level of pH in the soil.

ACID SOILS (pH4–6): Acid soils are suitable for growing ericaceous (lime-hating) plants. Apply a general fertiliser in mid spring to help growth and build up root clumps, which will produce more leaves and improve flower performance. If signs of yellowing (chlorosis) are identified, use a trace-element fertiliser to relieve the problem. Lime-hating plants have fibrous root balls so keep these moist with regular watering. Mulching with lime-free compost in spring helps conserve valuable moisture. If you wish to grow alkaline-loving plants, garden lime can be added to lower the acidity.

RECOMMENDED PLANTS:

- **Trees:** *Acer rubrum*, *Magnolia*
- **Shrubs:** azalea, *Calluna*

(summer-flowering heather), camellia, *Gaultheria* (box berry), *Hamamelis* (witch hazel), *Kalmia* (calico bush), *Pieris*, *Rhododendron*, *Skimmia*, *Vaccinium* (blueberry).

- **Alpines:** *Gentiana*, *Lithodora*.

ALKALINE SOILS (pH6.5–8):

These chalky soils drain and dry fast and are usually low in humus. Organic supplements are available to improve soil texture and raise the acid levels. Most plants will cope with a chalky soil, and some will flourish in alkaline conditions (see below), but ericaceous plants (see left) have to be grown in containers with suitable compost.

RECOMMENDED PLANTS:

- **Trees:** *Betula* (birch), *Corylus*, *Ginkgo biloba*, *Malus* (apple), *Prunus* (plum, cherry)
- **Shrubs:** *Cistus*, *Ilex* (holly), *Philadelphus*, *Viburnum*
- **Herbaceous:** *Acanthus* (bear's breeches), *Achillea*, *Aquilegia*, *Campanula*, *Knautia*, *Verbena bonariensis*, *Verbascum*.