



## What do plants need?

Plants can make their own food from **water, air and sunlight**, so make sure that your plants have good access to these. Different types of plants need different amounts of these but all need some of all three. Although they can make their own food they do need **minerals** to create their cells with, these can come from the soil or added fertilisers.

### Water

Plants can't make their own food without water, also water makes up a large % of their cells so they will literally collapse if they don't get enough water (wilting). Therefore, plants need a constant supply during their growing season (March to October).

If your plants are in pots, water well and often to make sure pots are always moist. To check, stick your finger into the compost – if it comes out with dark coloured damp compost stuck to it the pot has enough water, if it comes out with light brown small dry crumbs of compost or nothing on it - the pot needs watering. If it's hot sunny weather water early in the morning or in the evening so the water has a chance to soak into the compost/soil. Remember to water the soil/compost, not the leaves of the plant. The plant absorbs water through its roots, not its leaves.

If it is dry and windy you'll also need to water regularly as the wind will 'dry' the plant leaves like it dries your washing! Also, leaves can get wind burn so if your plant pots are on a balcony or window ledge where they catch the wind try to shelter them and water them every evening when it's dry or hot.

If you've planted into the ground you need to prepare the soil well before (see below). If you've done this you should only need to water your new plants two or three times (straight after planting and then at 3 day intervals) if it doesn't rain. After this they should get their roots down into deeper soil to get their own water supplies.

### Air

This should be straight forward to provide! But remember plants get air from their roots as well as their leaves. If they are growing in totally waterlogged soil there will be no air pockets and they will 'drown'; only specially adapted bog or pond plants can survive in constantly waterlogged conditions.

## Look after your soil

The ideal soil is 25% air pockets, 25% water 45% minerals (clay, sand, silt) and 5% organic matter. Plant roots extract the minerals they need from the soil via their roots but need air pockets and water in order to do this effectively.

If you are interested in soil types go to <http://www.soil-net.com/>; it's basic information for schools, but developed by Cranfield University's National Soil Resources Institute. Otherwise to identify the general type of soil in your garden you could do a 'squeeze' test. Take a small handful of soil and squeeze it moderately hard, then open your fingers. If the soil breaks apart and runs through your fingers you have sandy soil (warm, good drainage, poor nutrients) if it stays in a crumbly ball you have silty soil (moist, warmish and reasonable nutrients) and if it stays together in a sticky ball you have clay soil (cold, wet and good nutrients).

Organic matter is a great addition to any soil to make sure that it has a good structure with space for air pockets and water, which allow access to minerals and provide good drainage and water retention.

Organic matter could be

- rotted manure (great for retaining moisture in dry soil),
- garden compost,
- off-the-shelf bags of compost (peat-free, coarse types are best),
- composted bark (very good for heavy clay soils),
- de-composed leaf mould,
- old compost from pots.

Just make sure any organic matter has rotted down/decomposed first or it will take minerals out of your soil as it rots down.

You can add organic matter in three ways.

- 1) The easiest is to pile it on top of your soil in when the soil is cool and moist in autumn through to early spring. Just put it on at least 5cm deep (leaving space around existing plant stems so they don't rot) and leave it there, worms and other insects will do the hard work mixing it with the soil. You should do this on raised beds and vegetable patches too.
- 2) If you are planting you should dig a hole slightly deeper than the plant pot and at least 1.5 times as wide (more for trees and shrubs) put organic matter in the bottom of the hole and then mix the organic matter with your original soil as you backfill around the plant.
- 3) If you are making a new border or vegetable patch you can dig trenches one spade deep and put a layer of organic matter in the bottom before refilling it with existing soil.

If you get your soil basic 'profile' right most perennial plants in your garden should not need any extra fertilizers to get the minerals that they need. All you should do is add some extra organic matter on top of your soil every autumn.

## Fertilisers

If you grow vegetables, fruits, annual plants or plants in pots you will need to add fertilisers into your compost or soil as these plants may not get enough minerals to grow/provide a good crop. There are two main types of fertilisers:

- 1) Organic – made from once-living organisms and including cow/horse manure, chicken manure pellets, garden compost, off-the-shelf compost, seaweed feed, comfrey/nettle feed, liquid feed from wormeries etc.
- 2) Inorganic – specifically manufactured chemical compounds such as liquid and powder, granular and pelleted fertilisers.

For all types of fertiliser you should carefully follow the instructions or advice for applying them and don't add more than you need; thinking the plants will grow even better. Sometimes too much fertiliser creates weak, soft growth that attracts pests.

For vegetables I would recommend adding manure to retain water and then add chicken pellets two weeks before planting out or sowing your crops. Both fertilisers will release their nutrients slowly and feed your crops gradually.

Liquid feeds are the easiest to give to potted plants. As well as inorganic shop bought fertilisers, seaweed, wormery, comfrey and nettle feed can be diluted and watered into pots. Just make sure you follow the dosage, too much fertiliser can 'burn' or damage plants.

## Choosing Plants

There are thousands of plants you can buy in garden centres and shops and even more you can buy as seeds and grow yourself. BUT there is probably a limited amount of plants that will thrive in your particular garden. This is because most plants have a preference for specific types of soils, access to water, sunlight and climate. So before you start choosing plants, work out what type of garden you have got. Check the following;

- How much sunshine do you get (south facing gardens usually get most)
- Do you have a lot of shade (may be created by nearby buildings/trees)
- Is your soil wet, heavy, clayey or light and dry (try the squeeze test)
- Do you have particular pests or diseases? (slugs/snails, greenfly or mildew)
- Which plants/weeds are growing well already?
- Do you get frost/snow staying in your garden in winter? (or does it melt)

When you have got answers to these questions you can start picking which plants will thrive in your garden (yes, there are plants that like wet, cold, shady gardens and slugs won't eat them either!). Do some research on the internet or in books before you go to buy your plants and match up your garden with suitable plants, it will make your garden a pleasure to look at and easier to look after.

A good online database is provided by the RHS - <http://apps.rhs.org.uk/plantselector>



### **Good Plants for Shady areas**

Shade loving plants usually have large leaves that create great shape and texture and many have attractive flowers as well. Here are some easy-care ones:

- Hellebores – flower in the winter and spring resist most slug attacks too
- Rodgersia – large, unusual leaves, upright spikes of small flowers
- Ferns – wide range of types available, some suitable for dry shade too
- Hostas – large oval leaves, spikes of flowers in the summer can succumb to slugs and snails so you'll have to protect them
- Astrantia – long flowering plant in shades of pink and white
- Geranium phaeum – small white, pink or purple flowers in Spring
- Pulmonaria – spotty oval leaves, pink, blue, white bell-like flowers in Spring

### **Shrubs for small gardens**

Many shrubs can take over a small garden and can be a boring block of green for most of the year. So for small gardens I recommend dwarf varieties of shrubs, naturally small shrubs or shrubs you can prune back every year to keep them small. Some good ones include:

- Dwarf rhododendrons – evergreen leaves and large, trumpet shaped flowers,
- Hebe – evergreen leaves with white, pink or purple spring or summer flowers,
- Cornus – red, yellow, green or dark purple stems in the winter with green or variegated leaves spring to autumn. Prune down to 15cm from the ground in March each year.
- Choisya × dewitteana 'Aztec Pearl' – delicate evergreen leaves, scented white flowers in the late spring and autumn
- Philadelphus 'Belle Etoile' – oval green leaves, white strongly scented flowers in the late spring/early summer

### **Good perennial plants for pots**

- Ferns – most varieties will be happy growing in pots for many years
- Hostas – often it is easier to keep slugs off them if they are in pots
- Lilies – these like well-drained soil and you can easily add grit to pots
- Agapanthus – striking balls of flowers; they often prefer growing in pots
- Small grasses – Hakonechloa macra, Festuca glauca, Stipa arundinacea
- Daffodils and tulips – will grow well in pots and can be moved after flowering

## Good grasses for small gardens

Many grasses are hardy plants that need little care but they create extra texture in your garden with their fine leaf blades that catch the light, move in the wind and sparkle with frost in the winter. Be careful though, some grasses spread via underground stems and can take over your flower beds. I would recommend these varieties, which grow in more well behaved clumps;

- Miscanthus zebrinus – tall clump of green grass with cream 'stripes'
- Miscanthus sinensis 'Morning Light' – fine variegated blades
- Stipa tenuissima – small fine blades with hair-like flower spikes
- Panicum virgatum – tall clump with flower plumes in summer
- Hakonechloa macra – small yellow and green blades of grass
- Elymus magellanicus – silvery blue, fine blades of grass

## Easy to Grow vegetables

- Mangetout – provide a support for them to climb up (sticks/netting etc)
- Broad beans – may need staking when tall, leave space for air circulation
- Radish – quick to crop, you can also eat the flowers and pods
- Lettuce and salad leaves – only need a small space or pot, quick to crop
- Kale – similar flavour to broccoli, but quick to grow; eat in salads or steam/stir fry
- Potatoes – grow well in pots and bags

## How to reduce slug and snail attack

- Avoid growing plants they like to eat!
- Keep your garden tidy and don't give them damp dark places to hide in during the daytime.
- Encourage frogs and hedgehogs into your garden to eat them.
- Put out beer traps or hollowed out halves of oranges or grapefruit to collect them and then relocate them to a park or area well away from your garden.
- 'Hide' taste vegetables behind chives or onions that slugs don't like
- Try diluted garlic puree; boil, crush and then dilute with water and pour onto plant leaves.
- Gravel, grit and sharp edged barriers will put them off
- Copper rings work well on pots
- New slug 'electric fences' for raised beds.

### **Having year-round interest in your garden**

- Make sure you plant spring flowering bulbs in the autumn.
- Select plants that flower at different times of the year.
- Chose plants with attractive foliage, so there's something to look at when there are no flowers.
- Contrast the shape of leaves, type of flower heads and colours of flowers.
- Have a few evergreen plants or shrubs to give colour in the winter.
- Add annual plants in pots or the ground to add colour at any time of year (you can grow these from seed)
- Leave some tall plants flowering plants and grasses standing over the winter to catch the frost.

### **Maximise your time in the garden**

- Go into your garden or look at your balcony or pots regularly, even if it's for 5 minutes, just to see what is happening. You may catch a snail or see a new bud opening.
- Weed a little and often – catch weeds before they spread their seeds.
- Cut back dead foliage and flowers in the spring and summer to stop diseases spreading and reduce hiding places for pests (leave a messy area for wildlife, if you have space).
- Water pots and vegetables in the evenings if it is hot weather; the water will soak in better then and drop of water won't scorch the leaves.
- If you are busy, make a note of jobs you need to do so you don't forget them later!
- Get good tools to help you do the job and keep your secateurs sharp so they are easy to use and make sharp, clean cuts.
- Be realistic about the time you have to look after your garden and choose plants and surfaces that you have the time to look after. Gravel and paving take less looking after than lawn.
- Although pots are easier to keep weed-free than soil remember they need watering and fertilising in the summer and you may need someone to look after them when you are on holiday.
- Adding a layer of organic matter to your soil in the autumn will save you watering and fertilising your garden in the spring and summer.
- If you soil is very poor and badly drained, building raised beds on top of it may be the best solution.