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GREEN CROPS

A 'green crop' (sometimes called a 'green manure' or 'cover crop') is when fast-growing plants are grown thickly in a garden to improve soil conditions for a following crop.

WHY USE THEM?

As plants grow in the garden, they use up nutrients and organic matter. When they are harvested this material is removed from the soil, so it needs to be replaced. This could be done by adding compost, but a green crop only requires the addition of seed, making it much easier (and possibly cheaper)! Water-soluble fertilisers only provide nutrients, not organic matter so they may feed plants, but will not feed the organisms that create soil. Green crops help build soil and feed future crops, but they can also protect soil from the effects of excessive rain or sun, provide food and habitat for helpful garden creatures and even help deter pests from the soil.

WHERE CAN THEY BE SOWN?

Any garden bed can be sown with a green manure crop. If sowing into a vegetable garden, annual crops are best, as they will die when cut down, whereas perennials (which grow back after being cut down) are better suited to a garden with fruit trees or bushes. Typically seeds are sown after a crop is removed, but it is also possible to sow a green manure crop underneath an existing crop (e.g. clover under established broccoli), to enrich the soil while the crop is growing, as well as benefiting the following crop.

WHEN SHOULD THEY BE SOWN?

Although traditionally autumn-sown, as long as the right plants are chosen, a green crop can be sown at almost any time of the year. Autumn sowings are mostly used to protect the soil from winter rain, or to 'lock up' nutrients for a spring crop. They tend to grow slowly over the winter but put on a lot of growth heading into spring. Green crops are also sown in spring, to boost the soil for a crop the following winter (such as cabbages or broccoli) or to provide nectar for beneficial creatures (such as hoverflies or ladybirds). Any time the soil is going to be bare for more than a few weeks a green crop can be sown.

HOW IS IT DONE?

Lightly cultivate the ground to be sown, removing weeds and crop residues (just chop annual plants off at the base rather than pulling them out - the roots will die and feed the soil). Sow seeds according to the instructions and 'tickle' them into the soil using a rake or trowel so that they are mostly buried. Cover with netting to protect the seeds from birds (especially important if sowing grains such as oats, wheat or rye) and water in if necessary. Let the crop grow until it is just about to flower (unless you also want flowers to feed beneficial insects) and then you can either: chop it into bits with hedge clippers or a sickle and leave it as a surface mulch; or dig it into the soil surface using a sharp spade. Once the crop is cut, leave it for a few weeks to die off then you can plant your next crop. If you want to sow seeds, you will need to make shallow trenches and fill them with compost, then sow.

WHAT CAN BE USED AS A GREEN CROP?

Legumes

These plants host a bacteria on their roots that gathers nitrogen from the air and makes it available to the plant. They are essential components of gardening and farming systems across the world. When the plant dies the bacterial 'nodules' on the roots die off and provide their nitrogen to other plants. Annual legumes that suit green cropping include **lupins, broad beans, vetch, peas and crimson clover**. All of these are hardy and can grow through winter. Perennial legumes include **red and white clovers** and **lucerne** (also known as alfalfa). Below, left to right: crimson clover, blue lupin, purple vetch.



Winter Cereals

These tend to be sown in autumn and grow slowly through the winter, putting on masses of growth heading towards spring. They have deep fibrous root systems that can break up heavy soils and improve soil structure. Good winter cereals include **rye, oats, barley and wheat**.

Other useful annuals

Phacelia (*Phacelia tanacetifolia*) and **buckwheat** (*Fagopyrum esculentum*) are both highly regarded as green crops. Phacelia is hardy and can grow through winter and when flowering attracts a wide range of beneficial creatures. Buckwheat is a tender annual so won't tolerate cold weather, but will grow very quickly when it warms up. Buckwheat also attracts a lots of beneficials when flowering. Below, left to right: oats, phacelia flowers, buckwheat flowers.



Perennials

These are useful as permanent stands harvested for green manure or composting, as they will regrow after being cut. Perennial legumes (like alfalfa and the clovers mentioned above) will replace nitrogen removed from the soil. **Comfrey** is a vigorous deep-rooting plant that can bring up minerals and nutrients from deep in the subsoil, making them available to the soil surface. Once planted, many perennials can be hard to remove, so be careful where you plant them!

'Weeds'

Many of the plants we call **weeds** can be excellent soil improvers. They often have deep roots that bring nutrients and minerals to the soil surface. As long as they aren't allowed to flower and drop seeds they can be used as green crops, although if they are perennials (or drop seeds) they may continue to grow and become a nuisance, so need to be carefully removed.