

Crop Rotation and feeding the soil

The principle of crop rotation is to grow specific groups of vegetables on a different part of the vegetable plot each year. This helps to reduce a build-up of crop-specific pest and disease problems and it organises groups of crops according to their cultivation needs.

Crop rotation is used in allotment plots and kitchen gardens for most annual vegetable crops and should be used undercover where possible. Perennial vegetables (such as rhubarb and asparagus) do not fit into the rotation. Certain annual crops such as courgettes, pumpkins, squashes, marrows and cucumbers, French beans, salads (endive, lettuce and chicory) and sweetcorn suffer less from pests and diseases and can be in the same spot more frequently. Avoid growing them *too* often in the same place and make sure you replace all the nutrients they have used with a good quantity of manure and seaweed.

Plan your crop rotation before the growing season starts, and mark out the plots on the beds so you know where to plant each crop.

Benefits of crop rotation

Soil fertility: Different crops have different nutrient requirements. Changing crops annually reduces the chance of particular soil deficiencies developing as the balance of nutrients removed from the soil tends to even out over time. In tunnels it helps to reduce nutrient build up in any one area.

Pest and disease control: Soil pests and diseases tend to attack specific plant families over and over again. By rotating crops between sites the pests tend to decline in the period when their host plants are absent which helps reduce build-up of damaging populations of spores, eggs and pests. Common diseases that can be helped avoided by rotation include clubroot in brassicas and onion white rot.

Weed control: not so relevant in direct watered undercover systems but some crops, with dense foliage or large leaves, suppress weeds, thus reducing maintenance and weed problems in following crops.

How to do crop rotation

Divide your vegetable garden or allotment into sections of equal size (depending on how much of each crop you want to grow), plus an extra section for perennial crops, such as rhubarb and asparagus. Group your crops as below:

Brassicas: Brussels sprouts, cabbage, cauliflower, kale, kohlrabi, oriental greens (inc. spicy salad, radish, neeps and turnips)

Legumes: Pea, broad beans and French and runner beans

Onions: Onion, garlic, shallot and leeks

Solanaceae: Potato, tomato, pepper and aubergine

Roots: Beetroot, carrot, celeriac, celery, Florence fennel, parsley, parsnip and all other root crops, except swedes and turnips, which are brassicas

Move each section of the plot a step forward every year so that, for example, brassicas follow legumes, onions and roots, legumes, onions and roots follow potatoes and potatoes follow brassicas.

It's always best to try to feed your soil as part of your rotation. The food each type of plant needs will then be ready in the ground when the plant needs it. Liquid feeds can be useful as a boost, but relying on them to feed the crop doesn't work. If you apply feed when your crops are showing signs of being hungry, it's probably too late and the plant is suffering. You might still get a crop but it won't be as much as it could have been.

Growing in pots means you need to feed regularly once the plants get to 6" or 15cm in size, or have been in the new (multi-purpose) compost for 4-6 weeks. Feed weekly with seaweed feed or a mix of seaweed and manure tea depending on your crop, see below:

3 year
rotation

Year 1	Year 2	Year 3
Potatoes	Legumes, onions and roots	Brassicas
Legumes, onions and roots	Brassicas	Potatoes
Brassicas	Potatoes	Legumes, onions and roots

4 year rotation

Year 1	Year 2	Year 3	Year 4
Legumes	Brassicas	Potatoes	Onions & roots
Brassicas	Potatoes	Onions & roots	Legumes
Potatoes	Onions & roots	Legumes	Brassicas
Onions & roots	Legumes	Brassicas	Potatoes

Plant families for rotation

Family	Crop	Food	pH tolerable range
Allium	Onions Shallots Spring onions Leeks Garlic Chives	Hungry crop Rich soil Quick fix: homemade compost	5.5-6.5
Brassicas	Cabbage Sprouts Kale Cauliflower Broccoli (purple sprouting/calabrese) Neeps/turnips Romanesco Kohl rabi Chinese cabbage/pak choi Spicy salad/watercress/landcress Rocket Radish	Very hungry crop Lots of manure, seaweed or compost	7-7.5
Chenopods	Beetroot Leaf beet Chard True spinach Amaranth	Medium hungry crop Will do on ground well fed season before	6-7
Cucurbits	Courgettes Marrow Pumpkin Squash Cucumber Patti pan Melon	Very hungry crop Lots of manure and seaweed or compost	6-7.5
Graminae	Sweetcorn	Very hungry	5.8-7
Legumes	French bean Runner bean Broad bean Peas Fenugreek (herb)	Medium hungry Add compost. Has less nitrogen needs than other families Quick fix: homemade compost	6-7.5

Solanaceae	Tomato Pepper Aubergine Chilli Potato	Hungry crop but watch the nitrogen levels Feed with seaweed	6-6.8
Umbilifers	Carrot Parsnip Fennel (bulb and herb) Celery Celeriac parsley Coriander Chervil Dill (Salsify & Scorzonera)	Medium hungry Will do on ground well fed season before. Watch nitrogen levels Quick fix: fish/blood/bonemeal mix	6-6.8
Asteraceae	Lettuce	Medium hungry but will need fed if sowing regularly Quick fix: seaweed	6-7