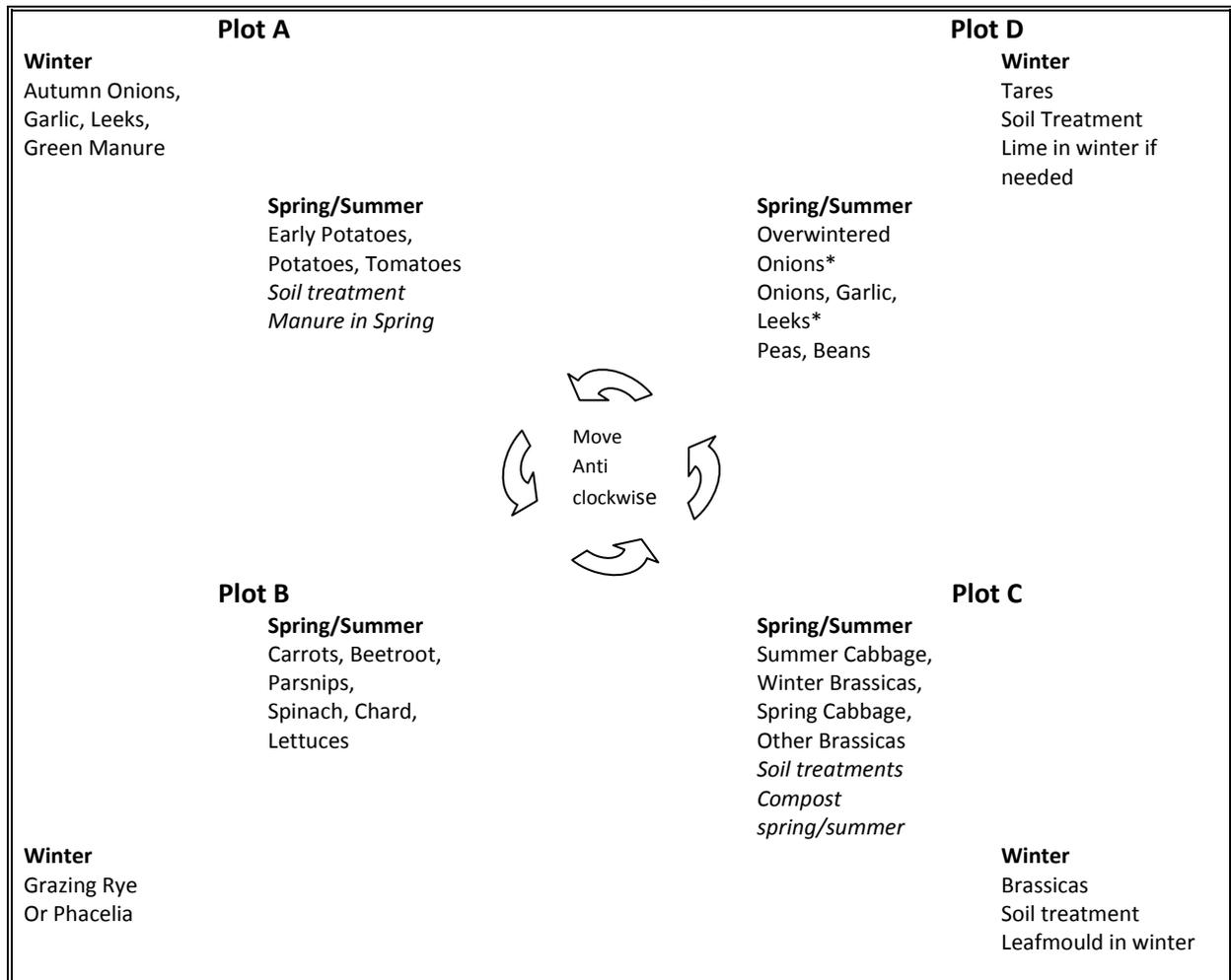


Crop Rotation Made Easy

Crop rotation is the cornerstone of organic vegetable gardening, but it can take a while for a beginner to feel confident about planning one for their own plot.



Rotation, rotation, rotation - it's something organic gardeners and farmers often talk about. There's good reason for this. A well planned crop rotation doesn't just prevent the build-up of pests and diseases. It also helps you to make the best use of the nutrients in your soil.

There are basic principles involved in crop rotation, but there are no hard and fast rules. There are as many crop rotation plans as there are gardeners. It all depends on what you can grow, and what you like to eat. After all, there's no point telling someone to put their sweetcorn with their squashes if they don't like either crop, or they love sweetcorn but hate squashes and would rather grow potatoes instead.

A four- year crop rotation is ideal – it certainly shouldn't be less. You simply divide your vegetable growing area into four equal-sized plots and grow different vegetables on each. The following year, you move them to a different plot so that the soil doesn't become exhausted, pests don't build up, weeds experience different conditions, and you make the most of the nutrition you are helping to provide in the soil.

Now you need to decide which vegetables should go on each one. Vegetables have families – there are nine main ones. Like all the other members of the plant world, they are classified under the Linnaean system. To the

uninitiated, this means they have Latin names which identify them as belonging to particular large groups of plants. Within the main group there will probably be a sub group which identifies them further. For example, broccoli is a *Brassica oleracea*, whereas purple choy sum is a *Brassica rapa*. There may also be a Latin variety name as well.

The easiest way to remember, or work out, which family a plant belongs to is to think about what it would look like if you let it flower and seed. With peas and beans this is easy because we eat the seeds. Carrots, parsnips, cabbage family plants and onions are a bit more difficult because we don't usually see them in flower. The illustration should help you to put them in their families. There are a few you be surprised about. Not only are lettuces members of the daisy family – Asteraceae – they are also related to Jerusalem artichokes and salsify. Carrot family plants include celery and celeriac, while tomatoes, potatoes and peppers are all in the Solanaceae. The beet family includes spinach and chard, and cucumbers, courgettes and squashes are all Cucurbitaceae. Some plants just don't fit in – examples are corn salad (lamb's lettuce) and New Zealand spinach. You may have already realised what a large family the brassicas belong to – radishes, land cress and oriental vegetables are all part of it.

Experienced organic gardeners often grow green manures – living plants which prevent soil erosion and leaching on bare soil, to improve soil structure and provide extra nutrition. If you use them, remember that they belong to a plant family too; sow them in the same growing year as their vegetable counterparts. Luckily, grazing rye, phacelia and buckwheat are not related to the common vegetables.

Nine into four will go

The solution to having nine plant families and four areas of garden is to group some of the vegetable families together, based on their nutritional needs. Think of each group as preferring to absorb the same kind of food. So, for example, potatoes, squashes and sweetcorn can all belong to the Pudding Club because they like their soil to be really rich. Peas and beans are the slimmers – they "live on fresh air" by taking nutritious nitrogen out of the atmosphere and fixing it into the soil using nodules on their roots. At Ryton (<http://www.gardenorganic.org.uk/gardens/ryton.php>) we include the onion family in this group. As for brassicas, they're happy as middle of the road healthy eaters. Roots prefer lean cuisine – well prepared but not rich. This is a very simplified way of looking at things; crops can slide between feeding groups, rather as we do ourselves, and, as you become experienced, you will develop your own system. Runner beans, for example, can benefit from a trench filled with rich compost or rotted kitchen waste, but this is because they like a moist root-run rather than a lot of food.

So what do they "eat"? Because organic gardeners feed the soil not the plant, think of the soil treatments each year as boosting the basic nutrients that the soil contains. Soil for greedy potatoes, squashes and sweetcorn in the first year Pudding Club needs a dressing of manure. The second year's legumes and onions – the slimmers – get enough nourishment from the previous year's manure treatment. In Year 3, soil for the middle of the road brassicas has a dressing of health food – slow release garden compost. Your soil might need a little ground limestone in the autumn before the brassicas are planted to give them ideal conditions. In the fourth and final year of the rotation, the "lean cuisine" root crops are happy with a dressing of leaf mould, which is low in nutrients but very good for soil structure. Then the rotation starts again.

This "vegetable diet" system is not a prescription. It's a device to help you understand the principles of crop rotation. If you want to grow large quantities of potatoes, you may want to let them dine alone. If you don't grow potatoes, then your pumpkins and sweetcorn could co-exist happily in that part of the rotation. You can combine vegetables in many different ways to suit yourself, your garden and the nutrients you've got available.

Although you have plenty of choices in the planning stages, once you are practising the rotation on the ground, keep the vegetables in the same groups each year. If you add a new crop, make sure you know which "family" it belongs to, and put it with its relations.

Planning Tips

- Write a list of the crops you want to grow. Include the green manures.
- Group them into their families.
- Group the families into their food preferences.
- Draw a plan of your plot and divide it into four equal areas.
- Place your four groups onto your four plots.
- Be prepared to juggle your plans- brassica lovers often find it hard to grow all they want to, for example, but it's better to grow less than to abandon the rotation.
- Start growing, and remember to write down what you planted as well as what you planned to plant. This will help with future planning.
- The following year, just move each group round to the next plot on the plan. You can move them clockwise or anti-clockwise, as long as you always move them in the same direction.
- There is a little flexibility – quick-heading lettuces, for example, can be fitted into any part of the rotation.

Chenopodiaceae

Beetroot family

Beetroot, Good King Henry, Quinoa, Spinach, Swiss Chard, Spinach Beet

Solanaceae

Potato family

Aubergine, Pepper, Potato, Tomato

Umbelliferae (Apiaceae)

Carrot family

Carrot, Celeriac, Celery, Fennel, Parsley, Parsnip

Alliaceae

Onion family

Garlic, Leek, Onion, Shallot

Miscellaneous

Corn, Lambs Lettuce, Miners Lettuce, New Zealand Spinach, Purslane, Phacelia, Grazing Rye, Buckwheat

Cucurbitaceae

Marrow family

Cucumber, Courgette, Marrow, Melon, Pumpkin, Squash

Leguminosae (Fabaceae)

Peas and Bean family

Alfalfa, Broad Bean, French Bean, Runner Bean, Clover, Fenugreek, Lupin, Pea, Tares, Trefoil

Compositae (Asteraceae)

Daisy family

Chicory/Endive, Jerusalem Artichoke, Lettuce, Salsify, Scorzonera

Cruciferae (Brassicaceae)

Cabbage family

Broccoli, Brussels Sprouts, cabbage, Calabrese, Cauliflower, Kale, Kohlrabi, Mustard, Oriental Brassicas, Radish, Swede, Turnip.

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