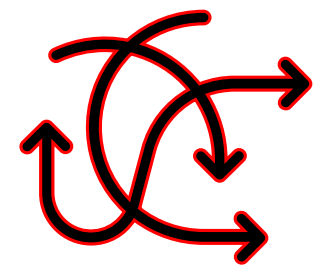


# Crop Rotation- WHY? I am not a farmer!



Crop rotation in smaller urban gardens is just as important as it is on larger gardens and farms.

With limited space and sun exposure, you might think there are no options to rotate your plantings, however you may find that if you don't practice some form of rotation, your overall success will diminish or disappear.

Rotation of plants is beneficial for:

- 1) Disease prevention and control without resorting to chemical methods or soil replacement.
- 2) Soil fertility – less need for time, expense
- 3) Overall productivity and increased harvests- which are IMPORTANT in smaller spaces

Rotation has to consider not only the specific plant but also the close relatives as they tend to share susceptibilities.

The Family group is something you can look up online, but I provided a short list of common things later in this document.

Rotation should be done at a minimum of 3 years between plants in the same family, so one easy way to accomplish this is dividing your garden into 4 quarters and moving everything on a 4-year cycle.

Many people only grow one type of plant- like summer fruits (tomato, pepper, squash), so moving to diversify in crop rotation can push you to expand your repertoire and get a new item into your diet. Diversity attracts our beneficial insects as well, who do all the heavy lifting for us in pollination and population control for the “bad actors” that attack our precious gardens.

## Diseases and Pests:

If you continue to plant the same things in the same spot year after year after year, you might start to see insect or disease hit harder and harder and sometimes lead to failure of an entire crop. This is due to a build-up of populations over time. Your carrots become riddled with holes. Your tomatoes turn green then brown. Oh! The humanity!

Plants in the same family tend to share pests and diseases so it is important to know which family your veggies are in. For example, radishes and broccoli are susceptible to root maggot (a fly larvae) and club root (a soil fungus), so knowing that both are in the brassica family you can start to manage these pests.

Plants in the nightshade family are especially sensitive to disease- plants like tomato, potato, and eggplant. Same goes for Allium family plants like Onion and garlic.

Tomatoes are already fussy in the PNW, so control of things like Late Blight by rotation gives you a better advantage. Late Blight spores splash up from the soil onto the foliage, so at a minimum, prune up lower leaves and use landscape cloth, or better yet, use RED row cover as it enhances ripening of the tomatoes in addition to preventing soil splash. If you employ crop rotation, your disease pressure is reduced. I always remove the foliage and send to commercial composting instead of turning under in place, just as an extra hygienic step.



## **Brassica (mustard) family**

- pac choi
- mustard greens
- broccoli
- Brussels sprouts
- cabbage
- cauliflower
- Radishes
- Arugula
- Turnips
- Napa- Chinese cabbage
- Kohlrabi



## **Allium (onion) family**

- Onion
- garlic
- Shallot
- Leeks
- Chives



## **Legume (bean) family**

- beans
- Peas



## **Chenopod (Beet) family**

- Beets
- Spinach
- Chard
- Quinoa



## **Nightshade (tomato) family**

- tomato
- potato
- eggplant
- Tomatillo
- Peppers



## **Curcubid (cucumber) family**

- Cucumber
- Squash- all types winter and summer
- Melons



## **Compositae (sunflower) family**

- sunflowers
- Lettuce
- Endive
- Artichoke
- Radicchio



## **Apia (carrot) family**

- carrot
- Fennel
- Chervil
- Celery
- Parsley
- Cilantro
- Dill



# Soil fertility:

If you plant the same crop in the same space over and over, key nutrients will deplete from the soil. Nitrogen for leaf growth is the first to go. Phosphorus, calcium, and potassium, and trace minerals take longer to deplete but they will decline after a few seasons.

The method of crop rotation included with this presentation will help to build and preserve soil nutrition with minimal effort and purchases.

## Fertilizer basics

NPK numbers on a bag or box of fertilizer means this (this is a generalization; they all work together):

N= Nitrogen, feeds the leaves

P= Phosphorus, helps the flowers (and roots)

K= Potassium, boosts the roots (and metabolism)

So, an all-purpose mix might be listed as 10-10-10 and a bloom formula might be 10-20-10 or 10-20-20. Organics numbers will be lower (single digits) but that does not mean they are less beneficial.

Trace elements you might find are calcium, iron, manganese.

Nitrogen fertilizers that incorporate sulfur are very powerful at greening up a yellowing plant. You see this listed in lawn fertilizers very frequently.

Soils that are highly acidic (e.g. high clay content or near a douglas fir tree) can benefit from LIME for veggie gardens. This will change the PH and bring it to a more neutral state. Test kits are available at all garden stores.

A simple way to rotate is this:

# Leaf to Root to Flower to Fruit

*Grab a copy of The Maritime Northwest Garden Guide from Seattle Tilth for an absolute wealth of information in addition to this primer on rotation of crops in the home garden.*

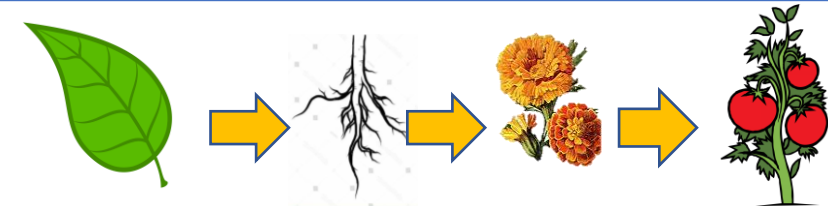
An example of this might look like:

Year 1: LEAF- Lettuce

Year 2: ROOT- Beets

Year 3: FLOWER– Cilantro/Coriander (Leave to flower– attracts and INSANE amount of beneficial insects and bees, you harvest the coriander seeds when finished.)

Year 4: FRUIT--Tomatoes



The category reflects the part of the plant you harvest.

Before you plant the leaf crop you can add your higher nitrogen with manure or alfalfa or bloodmeal, or a commercial blend—either conventional or organic. Work in well, add compost if you need. I like a blended all purpose organic and I add an extra nitrogen boost as well.

The following year you do a root crop, which don't need the nitrogen that has been depleted by the leaf crop.

You may add compost, but a fresh dose of fertilizer is not really needed. In fact, if you have high nitrogen your root crop will be on the puny side!

The third year choose a flower- either for your insect population or your soul. Seeded Flower crops tend to be light feeders and you likely don't need to add a thing. If want to do something "extra" choose a flower blend with plants in the bean or pea family, so they "fix" the nitrogen in the soil and make it more available to other plants. Crimson Clover is a good one. You can then just turn them under and mix into the soil for what we call Green Manure.

Fourth year in Tomatoes, Peppers, etc- the summer fruits. These items are excellent in rich soils that benefited from a cover crop the previous year. You may choose to add small amounts of fertilizer but if your soil has been prepared for several years you might be surprised by the firepower you built up. Peas or fava beans are also good early crops- I tend to plant and harvest my peas right before my tomatoes go in, so I get a lot of bang for the buck on square footage.