

THE EDIBLE GARDEN



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GARDEN NOTES

A word of caution for those planning to use ornamental plants and vegetables together:

Some ornamental plants are poisonous if eaten and parts of them may look similar to edible plants. Children or the unwary may mistake an ornamental for an edible when they are close together. For instance, many plants grow seeds in pods that look like peas or beans: sweet peas, wisteria, bleeding heart, lupins to name a few. Other plants may have attractive looking, but poisonous berries; an example is red elderberry (*Sambucus racemosa*), whose berries should not be eaten, while those of the more common elder (*Sambucus nigra*) may be and are considered to be very healthful. Many vegetables have parts that are poisonous; e.g. the leaves of rhubarb, tomato and potato are toxic. To avoid accidental poisonings take time to research your plants, plant mindfully and label carefully.

DID YOU KNOW?

- Celery can be grown in our area. However it requires a long growing season, lots of water and nutrient rich soil. Start indoors 8-10 weeks before planting out.
- Celery can be harvested one stalk at a time leaving the plant to continue growing.
- The darker the celery stalks, the more nutrients they contain.
- All members of the *Allium* family, such as garlic, can be used as companion plants.
- Rose petals and rose hips are edible. Hips made into syrup or cordial were used as a source of vitamin C in the past.
- Plant dill to attract the swallowtail butterfly (see title larvae); the larvae eat it.
- However, dill inhibits the growth of carrots.
- Fruit trees are both ornamental and productive. Moreover, they can often be trained into interesting forms.

Friends & Neighbours through the Years: Companion Planting & Crop Rotation Part 2

Continued from December 2014

*Rebecca Last,
Master Gardener of Ottawa Carleton*

Family Failings

Another phenomenon we observe with both our ornamental plants and with annual veggies are that related plants seem to suffer from similar pests and diseases. For example, we know to check members of the rose family, including raspberry canes, when Japanese beetles arrive in late June. During wetter summers, we know our hostas, regardless of variety, are likely to be targeted by slugs. These observations confirm that certain pests and diseases have evolved to feed on particular families of plants. If we plant the same family of plants in the same place year after year, the pests know exactly where to go for dinner next year.

Of course, plants from the same family tend to use similar soil nutrients, too. So that's another reason to put family

members in different locations from one year to the next. **This practice is called crop rotation.**



Family Groupings

So what is a “family of plants”? Plants in the same family are genetically related, which is indicated by the plants’ Latin names. Here are some examples of edible plant groups:

- **Allium** genus: includes onions, garlic, leeks, shallots, chives;
- **Apiaceae (Umbelliferae)** family: includes carrot, celery, parsley, parsnip;
- **Brassica (Brassicaceae)** family: includes broccoli, cabbage, kohlrabi, cauliflower, kale;
- **Chenopodiaceae** family: includes beetroot, quinoa, spinach, Swiss chard;
- **Compositae (Asteraceae)** family: includes chicory/endive, Jerusalem artichoke, salsify;
- **Cucurbitaceae** family: includes squash, cucumber, melon, zucchini;
- **Leguminosae (Fabaceae)** family: includes peas, beans, clover, lupin, alfalfa;
- **Nightshade (Solanaceae)** family: includes tomatoes, eggplant, peppers, and potatoes.

Crop Rotation Basics

Beyond making sure that we don’t plant the same family of plants in the same place over two successive years, crop rotation also seeks to make the most of available soil nutrients. So “heavy feeders” should be planted ahead of so-called “light feeders” or “soil builders”.

- Heavy feeders include: the nightshade family, cucurbits, lettuce, beets, artichokes and brassicas,
- Light feeders include: the *Allium* genus and Apiaceae family,
- Soil builders are generally legumes: peas, beans, etc. that add nitrogen to the soil. Some weeds, such as nettles, are also great soil-builders for their ability to draw minerals and nutrients from deep within the soil.

Grains, such as corn, oats, rye and wheat, are grasses, which require a lot of nitrogen, so they do well following a crop of legumes. These grasses also tend to have deep roots, so work well when followed by other plants that have deep roots, such as the nightshade family or root veggies that require deep, loose soil.

Pop Quiz

The following is a simple 4-year planting plan for four different crops. We know that we want to plant tomatoes, carrots and onions each year. As you can see, each year, we move, or rotate, these crops around the vegetable garden so each crop is

grown in the same place only once every four years. In this example, can you figure out what our fourth crop should be?

	Year 1	Year 2	Year 3	Year 4
Area 1	Tomatoes	Potatoes? Broccoli? Beans?	Onion	Carrots
Area 2	Carrots	Tomatoes	Potatoes? Broccoli? Beans?	Onion
Area 3	Onion	Carrots	Tomatoes	Potatoes? Broccoli? Beans?
Area 4	Potatoes? Broccoli? Beans?	Onion	Carrots	Tomatoes

For the first year, potatoes will work, but in years 2 through 4, the potatoes wind up next to the tomatoes. Since these two plants are in the same family, we don't want to put them together. Broccoli and onions are good companions, so that would work for years 1, 3 and 4. But both broccoli and tomatoes are heavy feeders, so planting one right after the other is likely to deplete the soil of nutrients. Beans seem to be a good choice. They will replenish soil nutrients for the heavy-feeding tomatoes that follow them, and can follow most other crops.

Rotations for Intensive Growing

The above is a simple example of crop rotation. Things get a little more complicated when we are growing several things in the same space throughout a single season. However, the principles remain the same.

To illustrate, here's how I use one small area in my garden. In early spring, I plant peas, lettuce and radish. These are all cool season crops that will be finished by early June. The peas add nitrogen to the soil. By late May, I have already harvested most of the peas and radishes, and the lettuce is nearing the end of its life because the hot weather will cause it to bolt (flower and go to seed). Using the same trellis that supports the peas, I plant my summer squash or cucumbers. These will take a lot more space than the peas, but I still have room to squeeze a few radishes in around the edges of the bed. The heavy-feeding cukes appreciate the extra nitrogen that the peas added to the soil, and benefit from the pest-repelling qualities of the radish. The radishes typically mature on a 30-day cycle, so I can replant another crop in July. By mid-late August, I've usually harvested most of my summer squash or cukes and their vines are often starting to suffer from powdery mildew, so out they come. For the last few months of the growing season, I can use this space for leafy greens like another crop of lettuce or kale. This rotation makes maximum use of my small space and respects the principles of both companion planting and crop rotation.

Conclusion

Crop rotation and companion planting are two gardening techniques that build on hundreds of years of observation by food gardeners. Essentially, these two techniques provide us with short-cuts about how the mostly annual food plants tend to respond to different plant neighbours and different environments.

BEAUTY AND BOUNTY

MIXING VEGETABLES AND ORNAMENTALS

*Edythe Falconer,
Master Gardener of Ottawa Carleton*



Experimental farm mixed bed

The Ornamental Gardens at the Experimental Farm feature designs that include combinations of edibles and ornamentals. The Organic Garden – also at the Farm – does the same. This year the city featured mixed plantings in some of its public gardens. Home gardeners can do the same and many of them do – myself included! We can indeed have the best of both worlds.

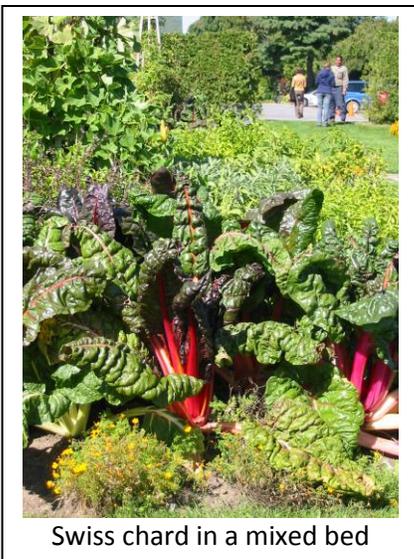
It really doesn't matter whether you choose a natural looking design or a very formal layout. Mixing beauty and bounty will work either way, and mixed designs will bring with them many benefits. I cannot eat boneset, goldenrod, cosmos or sedum 'Autumn Joy'. However all of these attract dozens of different pollinator insects – many of which do double duty as both pollinator and insect "police". Insect police are beneficial insects that attack those that

are harmful. This combination of amazing flora brings myriads of tiny visitors to our gardens while at the same time buoying body and souls with wonderful colour and intriguing forms throughout the season.

Native plants such as Michaelmas daisy, vervain, milkweed and *Echinacea* are excellent additions to the edges and corners of our vegetable gardens.

Then there is the "plight of the bumblebee". They come to my garden – not in swarms – but certainly in impressive numbers. Bees – and there are many kinds – have in the past been our planet's main pollinators – buzzing obligingly into the flowers in our garden and those of all of our major food crops. These furry little workers are currently under threat; therefore so are we. I like to think that our home gardens can somehow become their refuges while they recoup. There's a certain irony in the fact that products some growers use on their crops may be helping to destroy the pollinators that contribute to making their crops productive!

Recently we watched an episode on the *Nature of Things* featuring monarch butterflies. They rely heavily on the presence of milkweed. Farmers have traditionally regarded milkweed as a true weed and have worked hard to eliminate it. However it has recently been discovered that the fluff from its pods can be used to clean up oil spills: now there will be fields of cultivated milkweed. I grow it in my yard because it attracts the glorious monarch butterfly.



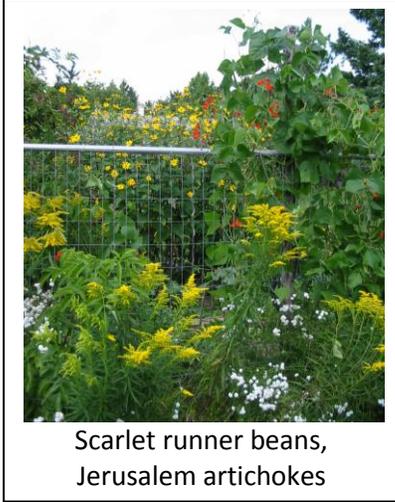
Swiss chard in a mixed bed

Edibles can definitely contribute colour and form to any garden. Those who breed ever more cultivars of a specific plant know that we crave colour. If you have in hand your latest Seed Catalogue I recommend that you have a look at the possibilities with such plants as beans – both pole and bush, beets, kale, lettuce and Swiss chard. These are just a few examples of plants that are available to provide a veritable rainbow of colour and a wide range of form.

Nowadays there is much discussion about avoiding monocultures and practicing biodiversity. Monocultures get a bad rap when their cultivation results in greater vulnerability to disease and insect depredations, effects that can be magnified if they are grown on the same patch year after year. Biodiversity, for home gardeners, means planting as many different types of plants as possible and, in the case of annual edibles and ornamentals, changing what and where you plant in any given year.

The choices for combining edibles and ornamentals are limited only by our imaginations. Literally anything goes!

For me the pole bean provides the single most impressive example of a plant that mixes well with other plants. A list of their many charms includes



1. They are edible, ornamental, and can be used raw, cooked, frozen, canned or dried;
2. They are fast and easy to grow and usually pest free: try succession planting;
3. They keep on producing all summer long and even into the fall;
4. They are legumes, therefore they fix nitrogen;
5. They provide summer privacy on chain link fences or on trellises along property lines;
6. They can bedeck the pillars of a pagoda or cool a too sunny veranda;
7. They can provide shade for shade-needing plants and children's outdoor structures;
8. They can teach a history lesson when grown with corn, squash and Rocky Mountain bee plant (*Cleome serrulata*). The Three Sisters (corns, squash and beans) often had help from a Fourth Sister: *Cleome*, the Rocky Mountain bee plant;
9. They attract humming birds!

There are other plants that perform generously but if you find one that beats beans, please let me know!

In front of a fence full of bean vines many interesting scenes can be created using combinations of more edibles and more ornamentals. A long skinny bed can be decked along its outer border with a mixture of small groupings of nasturtium, petunia, marigolds, alyssums, *Portulaca*, or daisies; each group of them being interrupted with small groups of colourful kale, beets and various lettuces. In other words pole beans can be a back drop for almost any group of plants, taking up very little garden space and adding value with nitrogen fixing.

In a free standing bed beans can be supported on homemade tepees or on sturdy stylish metal pillars. These bean towers can be the main attraction in circular, oval or asymmetrical beds. At their "feet", plant sun lovers on the sunny side and shade lovers on the shady side.

Perennial vegetables such as rhubarb and asparagus are beautiful in themselves. Even if you don't eat them they can be the backdrops for various annual and ornamental "crops".

BOOK REVIEW

*Dale Odorizzi,
Master Gardener of Lanark*

ROSES LOVE GARLIC: COMPANION PLANTING AND OTHER SECRETS OF FLOWERS

Louise Riotte, Storey Publishing
ISBN-13: 9781580170284

Louise Riotte wrote 12 books on gardening, companion planting and garden lore. Among them are 2 extremely popular books on companion planting (see December 2014 Edible Garden Newsletter) ***Carrots Love Tomatoes: Secrets of Companion Planting for Successful Gardening*** and its partner, ***Roses Love Garlic: Companion Planting***

RECIPE

*Dale Odorizzi,
Master Gardener of Lanark*

ROASTED VEGETABLES

Root vegetables are a staple in the winter diet. One of the tastiest ways to enjoy your root vegetables is to roast them. They are easy to prepare and can be put in the oven once the turkey or other roast comes out. This way they are piping hot and ready to enjoy when everything else is ready.

1 kg (2 lb) of vegetables of choice – potatoes, carrots, parsnips, onion, sweet potato, squashes, fennel, Brussel sprouts, beets, turnips, asparagus, leeks, tomatoes, sweet peppers, cauliflower, aubergine (eggplant)...

and Other Secrets of Flowers. Although Ms. Riotte died in 1998, her excellent books are available today and are as relevant as they were 15 years ago.

Roses Love Garlic discusses flower lore, trees, shrubs and vines. Ms. Riotte describes the benefits and pitfalls of planting certain plants near each other. Dusty miller repels rabbits from other prized flowers. Japanese beetles are attracted to four-o'clocks and are unaware that by eating them, they are committing suicide. Peas and beans have inhibiting effects on each other. Planting rue with roses foils Japanese beetles and keeps cats out of your garden. Rue and basil are incompatible. Garlic and onions and other members of the *Allium* genus keep rose chafers and aphids off your prized roses. On and on it goes.

The sister book to **Roses Love Garlic, Carrots Love Tomatoes** is similar but the focus is much more on vegetables. Who knew that beans and onions would hinder the growth of one another? And how did Louise Riotte know that planting celery near cauliflower would deter the white cabbage butterfly? There are no flashy photographs or dreamy prose in these books. Yet there is such a wealth of information here dispersed among simple and informative drawings. If only I had known last year that dill may affect carrot growth in a negative way, I may have ended up with carrots that weren't the size of cocktail weenies. It truly does matter which veggies end up being neighbours. If you don't plant the right guys next to each other, you'll end up with fierce competition over nutrients that will prevent one or both of them from flourishing. Basil helps keep tomatoes healthy from disease while improving growth and flavour, beets and kohlrabi grow well together because they take soil nourishment at different levels and broccoli is hindered by tomatoes.

About the only complaint I have with these two books is the need to search back and forth to discover which plants work well together and which plant should be separated. The book is crying out for a table to assist with your garden planning.

1 tablespoon (Tbsp) of Olive oil or oil of choice
Flavouring of choice – optional
Serves 8.

General Directions for all variations:

Peel and cut vegetables (1kg or 2 pounds per recipe) as needed then toss with 1 Tbsp olive oil and roast at 450 °F (230 °C) on a rimmed cookie sheet.

For example:

Potatoes:

Toss 1 inch chunks and 1 Tbsp chopped rosemary leaves and roast 35 minutes.

Brussel Sprouts:

Roast halved sprouts 20 minutes. Toss with ¼ cup finely chopped walnuts and 1 Tbsp parsley.

Red Onions and Fennel:

Toss ½ inch wedges with 1 teaspoon (tsp) chopped thyme leave, 2 cloves garlic, thinly sliced and ¼ tsp black pepper. Roast 30 minutes.

Turnips & Squash:

Roast 1 inch chunks for 35 minutes. Sprinkle with 1 Tbsp chives.

Watch for **Trowel Talk** the Master Gardeners of Ottawa Carleton electronic monthly gardening newsletter available on the 15th at <http://mgottawa.mgoi.ca/>

Visit the Almonte online community newspaper '**The Millstone**' - <http://millstonenews.com/> -for a column by David Hinks of the Ottawa Carleton Master Gardeners; under the Gardening tab

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