



Vegetable Garden Rotations

a common sense guide

Vegetable gardens are a wonderful source of fresh food. The wide variety of vegetables available to gardeners is a treat to see and taste. Following a garden rotation plan takes advantage of plant differences. By learning to work with nature, skilled gardeners can limit problems that may otherwise lead to pesticide use and grow stronger, healthier plants with delicious results!

Reasons to Rotate

Plant families are often susceptible to the same diseases and pests. For example, clubroot disease harms broccoli, cabbage, and other cabbage family members. The disease can linger in the soil and build up if host plants are repeatedly present. While plants in one family may host a disease or insect pest, plants from other families are not bothered. Therefore, rotating crops by family helps interrupt disease and pest cycles.

Nutrient needs vary between plants. Some plants, such as corn are 'heavy feeders,' needing lots of nitrogen and other nutrients. Most root crops are light feeders, while plants in the pea family fix nitrogen and help build soil fertility. By strategically rotating groups of vegetables, the gardener can better manage soil fertility.

Plant roots differ in depth and spread, and therefore differ in where they remove nutrients from the soil. Deep-rooted plants can open up channels in the sub-soil. This can help capture sub-soil minerals as well as improve drainage, aeration, and channels for soil organisms. Sod-forming shallow-rooted plants can crowd out weeds and help keep the surface soil crumbly and full of organic matter. Alternating or mixing shallow and deep-rooted plants can improve soil structure and help ensure plants are sharing space rather than competing against one another.

Different growing seasons are preferred by different plants. Peas do best when planted in early spring, while squashes need the heat of summer. In our climate, winter gardening with hearty cool-

season vegetables is possible. By following an early-season crop with a late-season or overwintering crop, the gardener can get more produce from the same amount of space.

Creating a Garden Rotation Plan

Step 1: Divide your garden into beds or sections of similar size. The number of beds will depend on the length of the rotation plan you choose. A four-year rotation needs four garden beds; a five-year rotation needs five beds, etc. Every year each garden bed is planted with a different group of plants. Planning the rotation carefully takes advantage of the conditions required and created by the different vegetables.

Step 2: Place plants in groups. The suggested groups in this guide place plants based on family, nutrient needs, root depth, and growth season. There are also plant lists to help plan your own rotation; use them as a guide. Remember that the best gardeners are good observers. Pay attention to your garden, experiment, and even consider taking notes or keeping a garden journal to develop your own strategies.

Step 3: Set up the rotation plan. In a four-year rotation plan, a garden bed that held group A plants the first year would hold group B plants the second year, group C plants the third year, and group D plants the fourth year. During the fifth year the bed once again holds group A plants and the cycle continues. Each garden bed starts with a different plant group during the first year, but follows the same order of plant rotations. In other words, A is always followed by B, which is followed by C, which is followed by D, which is followed by A.

Tasks that help manage soil fertility such as adding slow-release fertilizer and soil amendments can also be included in your plan. For example, potatoes can develop scab in soils that were recently limed, so lime is added after potatoes have been harvested. The soil fertility chores rotate with the plant groups.

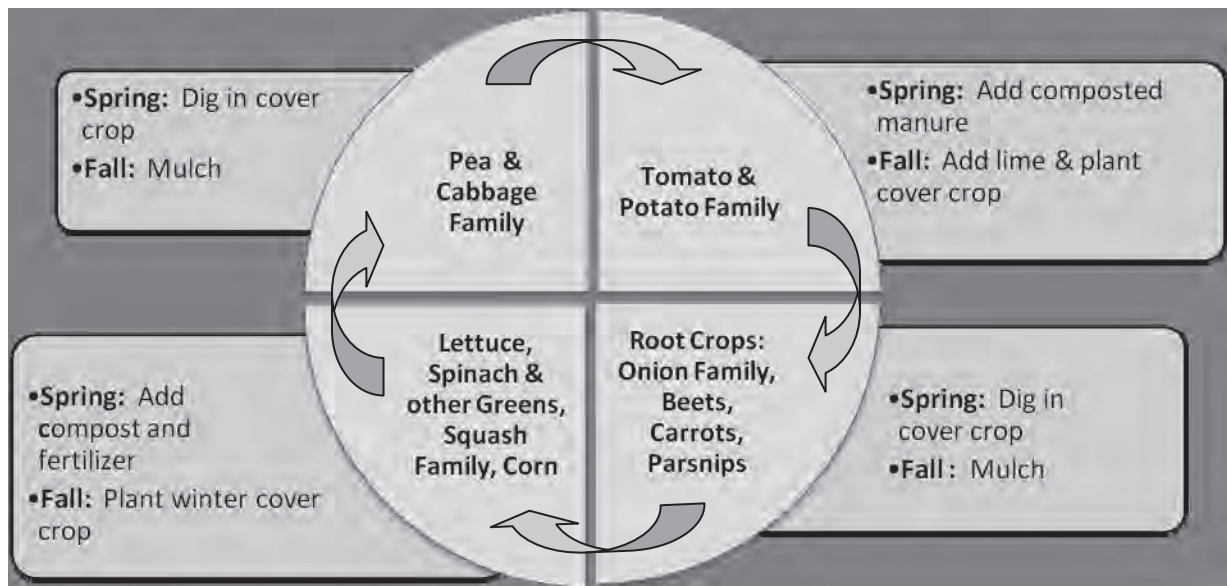
Suggested Rotation Plans

In any garden bed, follow this sequence of plant groups and associated soil fertility chores.

3-Year Rotation: Recommended for Small Gardens

- Pea/bean family and cabbage/broccoli family
Chores: Spring—Add compost and fertilizer; Fall—Mulch
- Greens, tomato family, squash family, corn
Chores: Spring—Add composted manure and fertilizer; Fall—Plant cover crop
- Roots including potatoes
Chores: Spring—Dig in cover crop, add compost; Fall—Add lime and mulch

4-Year Garden Rotation: Recommended for Year-Round Gardening



5-Year Rotation: Recommended for Large Gardens or When Grain is Desired

- Pea/bean family and cabbage/broccoli family
Chores: Spring—Dig in cover crop; Fall—Mulch
- Lettuce & greens, squash family, corn
Chores: Spring—Add compost and fertilizer; Fall—Plant cover crop
- Root Crops—onion family, beets, carrots, parsnips
Chores: Spring—Dig in cover crop; Fall—Mulch
- Grain crop such as buckwheat, quinoa, barley, rye, amaranth, or wheat; or make a fallow bed by growing a cover crop for a whole year
Chores: Spring—Add fertilizer; Fall—Plant cover crop or mulch
- Tomato/potato family
Chores: Spring—Add composted manure; Fall—Add lime and plant cover crop

Plant Groups To Aid Rotation Plan Design

Family Reunions: Plants listed by botanical family

Tomato family (Solanaceae):
Tomatoes, peppers, eggplant,
potatoes

Cabbage or mustard family
(Brassicaceae): Broccoli,
cabbage, cauliflower, kale, col-
lards, radishes, Brussels sprouts,
arugula, turnips, cress, mustards,
many oriental greens, rutabaga,
kohlrabi

Beet-spinach family
(Chenopodiaceae): Beets, chard,
spinach, quinoa

Pea family (Leguminosae, also
known as Fabaceae): Beans,
peas

Carrot family (Umbelliferae, also
known as Apiaceae): Carrots,
parsnips, celery, parsley, fennel,
cilantro, dill

Squash family (Cucurbitaceae):
Cucumbers, winter squash, sum-
mer squash, melons, pumpkins,
zucchini

Sunflower family (Compositae
also known as Asteraceae): Let-
tuces, endive, Jerusalem arti-
chokes, sunflower, chicory, radic-
chio

Onion family (Alliumn or Lilli-
aceae): onions, shallots, garlic,
leeks, chives

Grass family (Gramineae):
Corn, barley, rye, spelt, triticale,
wheat

Buckwheat family
(Polygonaceae): buckwheat,
sorrel, rhubarb

Purslane family
(Portulacaceae): purslane,
miner's lettuce

Amaranth family
(Amaranthaceae): amaranth

Mint family (Laminaceae):
mints, lemon balm, anise hyssop,
basil, marjoram, oregano, thyme,
sage, winter savory

Nutrient Needs

Heavy feeders: Corn, tomatoes, beets, cabbage family crops (broccoli, Brussels sprout, cabbage, cauliflower, kale, kohlrabi, radish), celery, cucumber, endive, lettuce, parsley, pumpkin, cucumber, squashes, rhubarb, spinach, sunflower

Light feeders: Root crops (carrot, garlic, leeks, onion, parsnip, potato, rutabaga, shallot, turnip), bulbs, herbs, mustard, pepper, chard

Soil builders: alfalfa, beans, clover, peas

Root Depth

Shallow rooting (18-24 in.):
Broccoli, Brussels sprouts, cab-
bage, cauliflower, celery, Chinese
cabbage, corn, endive, garlic,
leeks, lettuce, onions, parsley,
potatoes, radishes, spinach

Moderate rooting (36-48 in.):
Bush beans, pole beans, beets,
carrots, chard, cucumbers, egg-
plant, muskmelons, mustard,
peas, peppers, rutabagas, sum-
mer squash, turnips

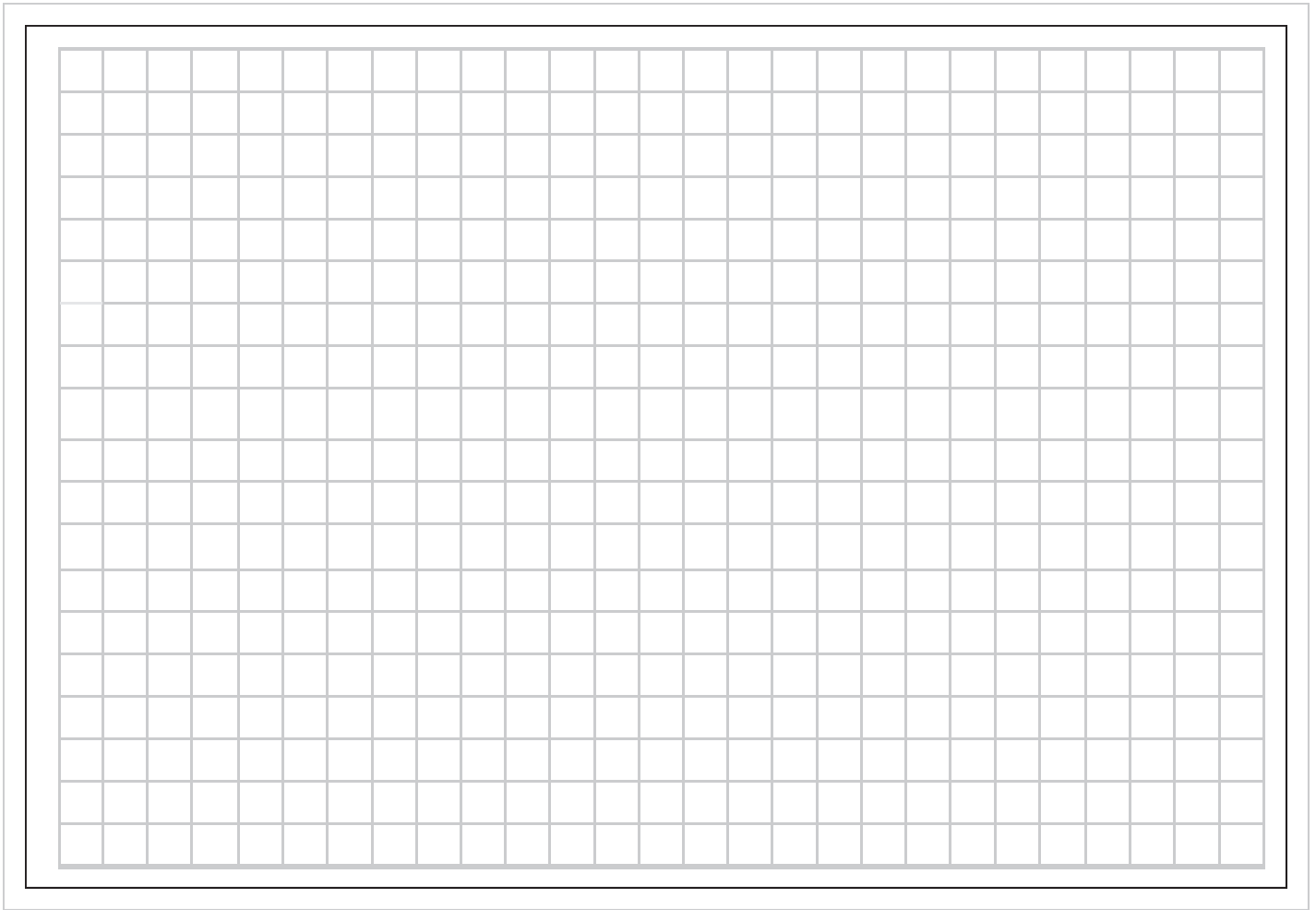
Deep rooting (>48 in.):
Artichokes, lima beans, parsnips,
pumpkins, winter squash, sweet
potatoes, tomatoes, watermelons,
alfalfa, sunflower

Growing Season: Some like it hot!

Warm-season: Cucumbers, eggplant, melons, peppers, pumpkins, snap beans, squash, sweet corn, sweet potatoes, tomatoes

Cool-season: Broccoli, Brussels sprouts, cabbage, carrots, cauliflower, celery, lettuce, onions, parsley, peas, potatoes, spinach

Layout Your Garden



For more information on gardening or pest control topics and other Common Sense Gardening guides, contact Thurston County Environmental Health at 360-867-2674 (TDD line 360-867-2603). Common Sense Gardening guides are also available free at area garden centers and online at: www.co.thurston.wa.us/health/ehcsg/.

References:

The Maritime Northwest Garden Guide, by Seattle Tilth

Growing Vegetables West of the Cascades, by Steve Solomon

Many Extension websites from around the country, search for garden rotation, extension

The Self-Sufficient Gardener, by John Seymour

Rodale Institute: www.rodaleinstitute.org

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To receive this guide in an alternative format, please call 360-867-2674 (TDD 360-867-2603)

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Thurston County Environmental Health Division; 412 Lilly Road NE; Olympia, WA 98506