

PLANNING YOUR GARDEN

What To Plant

Make your wish list of plants, then identify which do better as seedlings (tomatoes, eggplant, melons) and what can be direct sown (lettuce, carrots, radishes).

Select plants to fit your garden space. Try to visualize what they will all look like when full grown to understand how they will impact surrounding plants—e.g., tomatoes could shade out parts of garden, zucchini and cucumber leaves take up a lot of space.

Only buy plants and seeds from reputable places or risk losing a growing season to clean out your bed from a fungus or disease brought in with bad plants or seed. Inspect plants before you buy for white flies, aphids, or larvae eggs.

Square Foot Gardening is a good starting point to help understand how much space particular plants require for healthy roots. Grow UP!

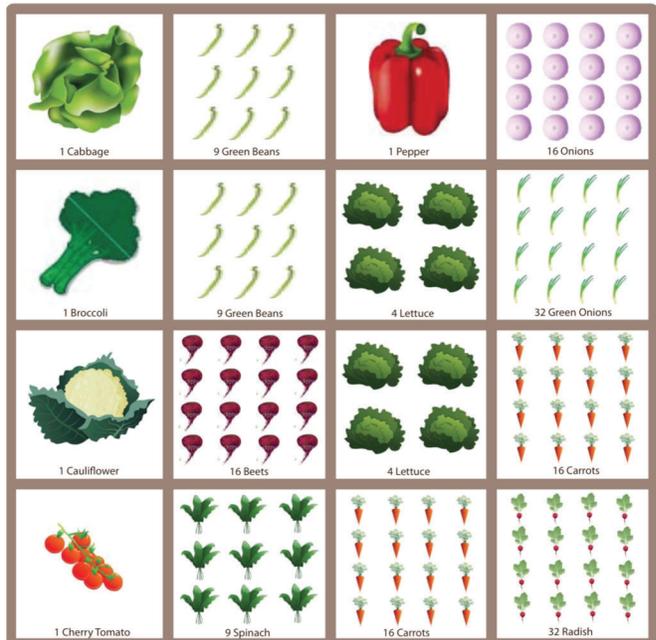
In general, square foot gardening involves having 1, 4, 9 or 16 plants per square foot. To translate seed packet growing information:

If seed packet says space	12"	1 per sf
	6"	4
	4"	9
	3"	16

Vegetable

Seeds/Plants Per SF

cucumbers	1
baby broccoli	1
lettuce heads	4 - 5
zucchini	1
tomatoes	1
leeks	16 - 25
scallions	25
eggplant	1
peppers	1
beets	16
radishes	16
carrots	16 (large carrots) 25 (smaller varieties)
leaf lettuce	scatter method (missed with sand) OR cluster method (about 10 seeds in 5 clumps)



Preparing Garden Bed

Bed prep and cleaning is critical with raised beds because you don't have a lot of wiggle room for crop rotation.

One of the advantages of raised bed gardening is that you aren't wading on the soil and compacting it—plant roots are free to grow. Don't counter this by using heavy "garden soil." The ideal texture of raised bed soil is in between garden soil and potting soil. There are even products that are readily available specifically for raised beds.

To this, add some composted manure that is rich in nutrients and helps reduce the amount of fertilizing you need to do during the growing season. Each year thereafter, the only bed prep you will need to do is cleaning the bed out in the fall and adding some more composted manure in the spring.

When To Plant

- Warm weather vs. cold weather plants
- Seed-to-transplant, buy-to-plant and direct sow
- Some plants work best with direct sowing; use May 15 as “last frost” date for our area—don’t plant any warm weather crops till after this date
- Starting your own seeds requires some investment of time and money to be successful

Fall crops for our area include:

<u>Veggie</u>	<u>Last Direct Sow</u>
Snap peas	8/7
Potatoes	8/7
Carrots	9/6
Beets	9/6
Lettuce	9/6
Radishes	9/6
Onions	9/16

MAINTAINING YOUR GARDEN

Succession Gardening

Succession planting is nothing more than following one crop with another crop. There are 3 kinds of succession planting:

1. Same vegetable, staggered plantings. This involves spacing out plantings of the same vegetable every two to four weeks. Rather than planting an entire row of beans all at once and having feast or famine, you can plant part at the beginning of the season and then plant more in about two to four weeks so that a new crop will be continually coming in. Crops like lettuce, radishes, and kale can be planted every two weeks until you run out of growing days.
2. Different veggies in succession. Some crops, such as snap peas, have short growing seasons and the space they were using can be replanted with a later season crop, like eggplant. Good vegetables for succession plantings include: arugula, basil, beans (pole), beets, broccoli raab, carrots, cilantro, dill, endive, green onions, kale, kohlrabi, lettuce, mizuna, mustard, bok choy, radish, rutabaga, spinach, chard, and turnips.
3. Paired veggies in the same spot. More on companion planting below.

Although it takes a bit of planning, succession planting will allow you to increase your harvest without increasing the size of your garden. To be successful at succession planting you only need to know how many days to maturity for each crop and how many days you have in your growing season. Days until crop maturity can be found on your seed packages. To find out how many days are in your growing season, count the number of days from the last frost date (May 15) in spring to the first frost date (Oct 5) in fall.

- Make sure you have enough seed to get you through the season.
- Add some compost between plantings to replenish nutrients and keep the soil rich.

- Don't hesitate to pull out vegetables past their prime. Use them while they are at their best and then use the space for something else.
- Vegetables that like cooler temperatures can still be started during the summer if you cool the soil before planting seeds. The easiest way to do this is to thoroughly soak the planting area and cover it with a wide board for a couple of days before planting. Lift the board to sow the seeds, water again and then replace the board on top of the sown row. Check daily for germination and remove the board as soon as you see the first signs of green.
- If using the square foot method, keep one square open at the start to have spot to plant successive crops.

Interplanting or Companion Gardening

Companion planting is the practice of growing different plants together—veggies, herbs and/or flowers. It is based on the idea that the different plants can benefit from having neighbors they like:

- Plants can attract beneficial insects and pollinators, deter pests, and thus act as insect repellants.
- Tall plants such as corn provide shade for crops like lettuce that do not do well in hot summer sun, and they can serve as support for crops that need trellising.
- Interplanting can help marking the rows, e.g., plant quick growing radishes as edge of square of lettuce. Or combine fast germinators (radishes) with slower ones (lettuce, carrots).
- Companion planting helps suppressing weeds.

Some examples of good and bad companions:

<u>Plant</u>	<u>Good companions</u>	<u>Bad companions</u>
Tomatoes	basil, onions, carrots	potatoes
Beets	onions	
Carrots	lettuce, tomatoes, rosemary, radishes	dill
Celery	onions, tomatoes	potatoes
Cucumbers	sunflowers, radish	aromatic herbs
Lettuce	carrots, radishes, cucumber	
Peas	carrots, radishes, cucumbers	onions, potatoes

Organic Gardening & Pest Control

You can garden organically, so food can be eaten as harvested, without spending a fortune. Bird feeders attract birds that eat many insects. There are many organic pest products that aren't OMRI certified (because the company didn't want to pay the charges of having that certification on the bottle) and cheaper. BIONIDE is a good brand and readily available.

- You want an anti-fungal like copper fungicide. Start using on tomatoes, cukes, peppers and zucchini around July 4 to prevent powdery mildew.
- Diatomaceous earth is good when creepy crawlers keep eating delicate plants, like new lettuce.
- Pyrethrum is made from chrysanthemums.

PLANTING TOMATOES

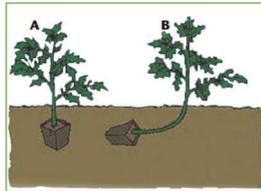
Tomatoes need fertile soil with good drainage and plenty of sunlight—at least six to eight hours a day. In a traditional garden, two-foot spacing is recommended to allow for good air circulation around the plants and to reduce the risk of the spread of disease. In raised beds, that's not practical—so we grow UP.

You need a minimum of 12 inches of soil for healthy tomato plants. Dig a hole, toss in a handful of compost. Carefully remove tomato plant from the pot, gently teasing the roots a bit if the plant has become root bound. Place the tomato transplant into the center of the planting hole. Ideally, you want to plant the tomato deep (about two-thirds of the transplant should be in the soil) so only the first two sets of leaves are sticking above the soil. As you can see in the picture below, the tomato plant will be planted much deeper than it was in the pot.

With the tomato sitting in the planting hole, take some clean (Lysol spray clean) scissors and trim off any limbs that are below or at the soil level. Trim the limbs off at the stem, but avoid cutting into the stem itself. Allow the cut off limbs to fall into the planting hole. The limbs will help add organic matter to the soil as they decompose.

Once you are finished covering the tomato plant with soil, add the tomato stake or cage, and a three to five inch layer of mulch (straw is inexpensive, easy to move, and it breaks down easily, adding organic matter to the soil). This provides a barrier so that any fungi in the soil won't splash onto the leaves when you water or it rains.

Keep tomatoes uniformly moist, but not wet. When tomato plants reach about 3 feet tall, remove the leaves from the bottom foot of the stem. These are the oldest, and usually the first to develop fungus problems.



WEBSITE RESOURCES

wigardenexpo.com (annual Garden Expo)

www.territorialseed.com

www.growveg.com/clients/growguideplantindex.aspx?c=4 (Mother Earth News)

www.gardeningknowhow.com

www.melindamyers.com

dane.extension.wisc.edu/horticulture/ (Dane Co. Extension at UW)

www.your-vegetable-gardening-helper.com/companion-planting.html (companion planting info)

garden.org/learn/library/foodguide/veggie/

www.gardeners.com/advice

BONIDE Liquid Copper Fungicide



Liquid copper fungicide helps prevent and treat many diseases on a wide variety of trees and ornamental plants, including Anthracnose, Bacterial Blight, Bacterial Leaf Spot, Black Spot, Botritis, Brown Rot, Cedar-Apple Rust, Citrus Scab, Downy Mildew, Fireblight, Phytophthora, Powdery Mildew, Scab. It comes in pre-mixed spray or concentrate. Can be used on grapes, vegetables, fruit trees, berry bushes, roses, pine, cedars, and more.

Concentrate Instructions:

- Mix 2 – 6 T. per gallon of water (1 quart should treat 10 sq. yards)
- Spray plant thoroughly BEFORE disease appears
- Repeat at 7 - 10 day intervals until harvest
- Re-apply after rainfall
- Can spray up to one day before harvest

Plant-Specific Instructions:

Plant	Purpose
Beet	powdery mildew, downy mildew, leaf & fruit spot
Brussels sprouts	powdery mildew, downy mildew, white rust
Cucumber	powdery mildew, downy mildew, leaf & fruit spot
Eggplant	leaf & fruit spot
Lettuce	powdery mildew, downy mildew, leaf & fruit spot
Spinach	powdery mildew, downy mildew, leaf & fruit spot, white rust
Squash	powdery mildew, downy mildew, leaf & fruit spot
Tomato	early blight, late blight, leaf & fruit spot, leaf mold, bacterial spot, buckeye rot
Zucchini	powdery mildew, downy mildew, leaf & fruit spot

Storage:

- Do not store below 40 F—can be damaged by freezing