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SQUARE-FOOT GARDENING

Denise DeBusk and Matthew Richmond

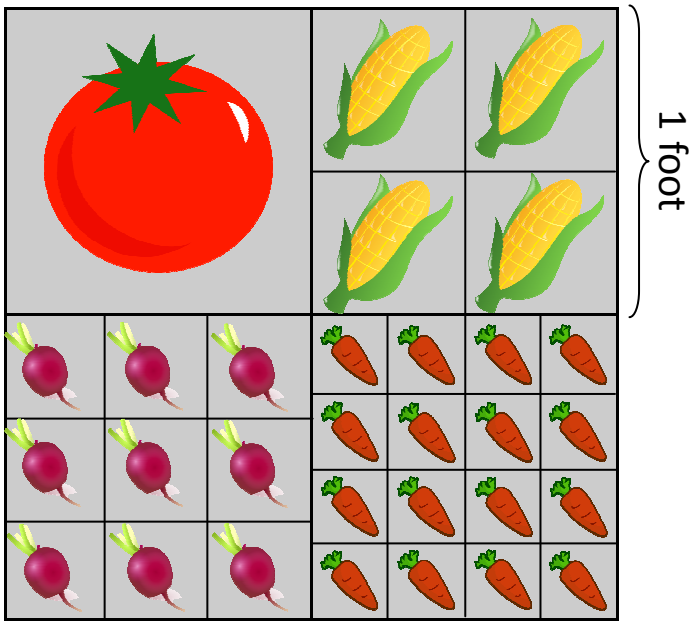
North Florida is notorious for having sandy, nutrient-deprived soils. It requires many soil amendments that could take years to get the soil to where you want it to be. The square-foot gardening method doesn't use existing soil but instead uses a fertile mix of compost, vermiculite, and peat moss. As soon as the square-foot garden is prepped you can begin gardening without any waiting period. No special equipment, weeding, or gardening experience is needed. It's possible to have the same harvest of a traditional row garden in 20% of the space using the square-foot garden method. The garden is separated into grids and each grid is a square foot. Row after row of vegetables is a thing of the past and in its place is a more efficient, space-saving system. Its increase in popularity is a testament to its ease of use and low maintenance.

Building the Garden

Square-foot gardens are usually 4'x4' but can be any size that fits your needs or aesthetics. There can, however, be garden beds that are 2'x2', 2'x4', 3'x8', or any other dimensions that one can reasonably maintain. A key point to remember is that the boxes should be no more than four feet wide, otherwise it would make it harder to reach into the garden without stepping on the soil. A person's reach is usually around two feet, which allows them to reach into the box from either side. The height of the box can vary as well, but six inches is all the plant needs for growth. 4'x4' boxes are the easiest to make because home improvement centers sell 2"x6"x8' boards. Two boards can be split in half and form the 4'x4' box easily. Grids can be formed using either nylon string, polypropylene string, wood lath, or anything else long-lasting and durable. The dividers that make the grid are spaced every foot.

The grid is permanent and should be screwed into place. Any bed can be made higher than six inches if root veggies are being grown. Using weed cloth under the garden reduces weed maintenance and allows the nutrients to go to the crops instead of the weeds. For a basic 4'x4' garden box you will need:

- Two 2"x4"x8' boards (cedar, recycled plastic and composite wood are long-lasting choices)
- Six 48" wood lath or nylon string for grid
- 3" long deck screws
- 4'x4' weed cloth



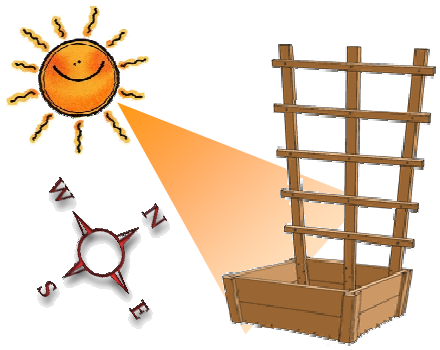
Different plants require different spacing. Here is an example of a 2'x2' square-foot garden including tomatoes, corn, beets, and carrots.

It's All in the Mix

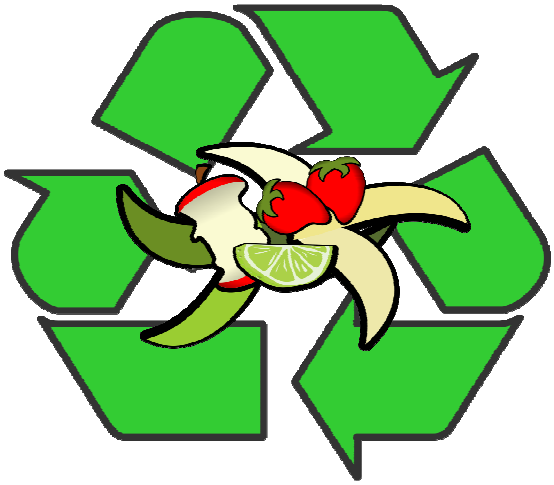
This is usually the toughest part for a gardener to handle but… there is no need for fertilizer. Yes, it's true! Based on Mel Bartholomew's square-foot gardening mix of 1/3 compost, 1/3 vermiculite, and 1/3 peat moss, fertilizer doesn't need to be added. The secret lies in using multiple types of compost. It is important to find as many different types of compost as you can get your hands on, but the minimum amount is five. Local home improvement stores carry different types of compost like worm castings, mushroom compost, cow manure, chicken manure, and more. One type of compost may not carry all the macro and micronutrients a plant needs. If you are already a seasoned gardener then you might have a compost bin at home turning all your produce scraps into "black gold". Compost needs to be added after each season in order to keep up nutrient levels.

Vermiculite is mica rock that is mined, then heated to be able to hold a large amount of moisture while also allowing the soil to breath. Your plants will thank you for adding vermiculite because it will make root growth easier. Vermiculite comes in several different sizes and grades. Coarse is the best for holding moisture and letting the soil breathe. It isn't always easy to find bulk vermiculite so it may be necessary to do your research before purchasing locally. It's important to note that after adding the vermiculite to the garden box you never have to add more over the seasons. It saves money!

Peat moss can usually be found in any home improvement store sold in 3-cu ft. Adding this to the mix makes the soil retain more water, lighter, and more friable. There's controversy over whether or not peat is sustainable. However, after initially adding peat to the mix it never has to be added again. Coconut coir is a more sustainable choice but it is more expensive, doesn't retain water as well, and can add excess salts to the soil if you don't pre-wash it.



Remember to position the garden facing south with the trellis sitting on the northern part of the box to prevent shading of other plants.



Turning your leftover food scraps into compost is a good way to recycle and give nutrients to your square-foot garden.

Getting Started

Now that the box is made and the mix is prepped it's time to pick a spot to put the garden. Finding an area as close to the house as possible is best. This way you can monitor the health of your garden and be as close to a water source as possible. Enjoying the view of your garden is one of the main reasons for having one! The square-foot garden needs at least 6 hours of direct sunlight and should be southern facing. Walkways between boxes should be three feet or wider to allow room to work around the boxes. Trellises should be located at the northern edge of the garden so that they don't shade out neighboring plants.

After finding the perfect spot it's time to put down the weed cloth. The ground can also be prepped by putting cardboard down for a couple weeks to kill any plants underneath. This makes the weed cloth more effective. The garden bed can be placed over the cloth and is ready for the soil mix.

Mel Bartholomew's mix relies on the volume and not the weight of the compost, peat moss, and vermiculite. An easy formula to determine how much mix is needed for the square-foot garden is found by multiplying the length and width of the box then dividing by two. For example, if you have a 4'x8' garden then:

$(4 \times 8) / 2 = 16$ cubic feet
Vermiculite = 5 1/3 cu. ft.
Compost = 5 1/3 cu. ft.
Peat moss = 5 1/3 cu. ft.

Throwing all the materials on a tarp and mixing it next to the square-foot garden is the easiest way transport and combine the parts without breaking your back.

Protecting the Produce

Setting up a square-foot garden only to have it be devoured by pests is not a gardener's goal. Protecting the garden from weather events is a task that requires extra attention as well. Taking measures to protect your plants will ensure that you continue gardening for years to come without quitting in frustration.

Cages made out of chicken wire can be built and set over the top of the square-foot garden , protecting plants from most pests. For frost protection, put tarp over the cage. Here are the materials you will need:

- Four 1"x2"x4' boards or two 1"x2"x8' boards cut in half (whichever is readily available at the local home improvement store).
- Two sections of 4'x8' chicken wire. The openings in the wire should be 1" wide (2" wide openings can be bought but it allows more pests in and is not as strong as the 1").
- 6" or 8" long Cable ties
- Four 2" long deck screws
- 3/8" staples (not needed but do help fill gaps between the boards and wire.)

Attach the 1"x2"x4' boards together to form a 4'x4' square with the deck screws and a power drill. Pilot holes should be drilled initially to prevent cracking of the boards (use a bit that matches the inner diameter of the threaded part). Two screws can be used on each corner to increase the structural integrity if the cage gets moved often. Next, roll a 4'x8' section of chicken wire out and place the wooden frame in the center of the wire. The length that stretches past the sides of the frame will end up being the height of the cage. There should be two feet of wire extending on both

ends of the frame. Bend the wire so that it wraps around the sides of the frame and points up. Remove the section of the wire from under the frame and lay out the second 4'x8' section of wire under the frame and repeat the bending process. Lay one section of the bent wire on the other section to form the cage. The corners of the cage should be tied together using the cable ties. When all of the corners are tied you can flip the cage over onto the frame and connect them

together using the cable ties. If there are gaps between the frame and the wire, staples can be used to secure them. The top of the cage may need some cable ties to connect both sections of the wire to prevent drooping. Place the cage in the final location in the garden.

Choosing the Right Plant for the Right Place

Vegetables	Spacing per Square Foot	Family
Asparagus	1 or 4	Liliaceae
Bush Bean Pole Bean	9 8	Fabaceae
Beet (large) Beet (small)	9 16	Chenopodiaceae
Broccoli	1	Brassicaceae
Cabbage	1	Brassicaceae
Carrot	16	Apiaceae
Cauliflower	1	Brassicaceae
Swiss Chard	4	Chenopodiaceae
Corn	4	Poacea
Cucumber	2	Cucurbitaceae
Eggplant	1	Solanaceae
Lettuce	4	Asteraceae
Melon	1 per 2 sq. ft.	Cucurbitaceae
Okra	1	Malvaceae
Onion	16	Liliaceae
Parsley	4	Apiaceae
Sugar Snap Pea	8	Fabaceae
Pepper	1	Solanaceae
Potato	4	Solanaceae
Radish	16	Brassicaceae
Spinach	9	Chenopodiaceae
Strawberry	4	Rosaceae
Summer Squash (bush) Summer Squash (vine)	1 per 9 sq. ft. 1 per 2 sq. ft.	Cucurbitaceae
Winter Squash	1 per 2 sq. ft.	Cucurbitaceae
Tomato (bush) Tomato (vine)	1 per 9 sq. ft. 1 per 1 sq. ft.	Solanaceae

Herbs	Spacing per Square Foot	Family
Basil (small) Basil (large)	4 1	Lamiaceae
Chive	16	Liliaceae
Cilantro	1	Apiaceae
Mint	1	Lamiaceae
Oregano	1	Lamiaceae

Flowers	Spacing per Square Foot	Family
Dahlia (small) Dahlia (medium)	4 1	Asteraceae
Dusty Miller	4	Asteraceae
Marigold (dwarf) Marigold (large)	4 1	Asteraceae
Pansy	4	Violaceae
Petunia	4	Solanaceae
Salvia	4	Lamiaceae

These tables are adapted from Mel Bartholomew's "All New Square-Foot Gardening," and is not meant to be a comprehensive list of all the things you can grow in a square-foot garden. If you don't know what spacing requirements are needed for a seed, just look at the back of the seed packet. The packet will tell you the spacing needed and you can do the math from there.

Here is another example of a 2'x2' square-foot garden incorporating diversity and showing how successful it can be. It doesn't always have to be an all edible or an all ornamental square-foot garden box. It can be a mixture of both that supplies benefits to all plants involved.

Companion Planting

Planting a 4'x4' bed with different types of plants is not only aesthetically pleasing, it can be advantageous to your gardening as well. One of the reasons to switch from row gardening to square-foot gardening is the diversity that can be obtained in such a short area. Native flowers can be planted next to cucumbers to attract pollinators into the area. Marigolds can be planted to prevent nematodes that manage to make it through the weed cloth. Types of predators and parasitoids are attracted to certain plants and are able to offer organic pest protection. Nasturtiums have been to shown to repel wooly aphids, whiteflies, and cucumber beetles while also being edible. Companion planting is a topic that deserves more attention than what can be given here so do your research and you won't be let down!

Successive Planting

The beauty of the square-foot gardening method is that as soon as a plant has spent its use, tear it up and plant another. Planting can happen almost year-round in Florida so plantings can be staggered to get continual harvests. Another thing to keep in mind is that all the season's lettuce doesn't need to be planted at once… save some squares for the next week so that you can get fresh, healthy lettuce throughout the season. There is also no need to add more vermiculite or peat to the mix after a harvest because it will stay in the mix for longer than your garden will be in use. Just add a mixture of compost to the mix and put a different plant in the square. It's important to rotate crops because certain crops take up more or less nutrients than other crops.

For additional questions, contact:

UF/IFAS Extension Alachua County
2800 NE 39th Avenue, Gainesville, Florida, 32609
Phone: 352-955-2402
E-mail: alachua@ifas.ufl.edu
Website: http://alachua.ifas.ufl.edu