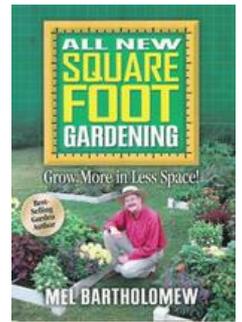


Square Foot Gardening

Square foot gardening is the practice of planning and creating small but intensively planted gardens.

The practice combines concepts from other organic gardening methods, including a strong focus on compost, densely planted raised beds and bio-intensive attention to a small, clearly defined area. This method is particularly well-suited for areas with poor soil, beginner gardeners or as adaptive recreation for those with disabilities (Bartholomew, 2005). The phrase "square foot gardening" was popularized by Mel Bartholomew in a 1981 Rodale Press book and subsequent PBS television series. Source: Wikipedia



Overview

There are many excellent reasons to square foot garden (SFG). It uses 1/10 the space of normal row based gardens, it uses an exact and fool proof soil mix and it grows lots of home grown mineral dense food. Also the small modular beds **are easily adapted, and the gardener can reach the entire area without stepping on and compacting the soil.**

Conventional gardening can require heavy tools to work the soil, whereas in square foot gardening methods the soil is not walked on and thus not compacted, and it remains loose and more easily workable due to the composition of the recommended soil mixture.



In the "All New Square Foot Gardening" book, Mel Bartholomew recommends the following soil mixture:

- **one-third compost**
- **one-third peat moss (cocopeat)**
- **one-third vermiculite.**

A mix of commercial compost, peat moss and vermiculite should start weed free and the few seeds that blow in are easily removed or out competed by the dense vegetable plantings.

In Perth peat moss is neither local nor ethically mined product so you should use cocopeat instead (cocopeat is byproduct (coconut husk) of an existing industry. Peat moss is from dredged waterways and swamps.

For most crops soil only needs to be 15-20cm deep (less than the usual 30cm) as it is highly fertile and water holding.

While you can change the volumes and types of mix using specific soil mixtures within the beds makes this food production techniques fool proof. This mix increases nutrient and water-holding capacities, so that the garden needs less additional water than in systems reliant on the native soil and is an excellent choice for Perth.

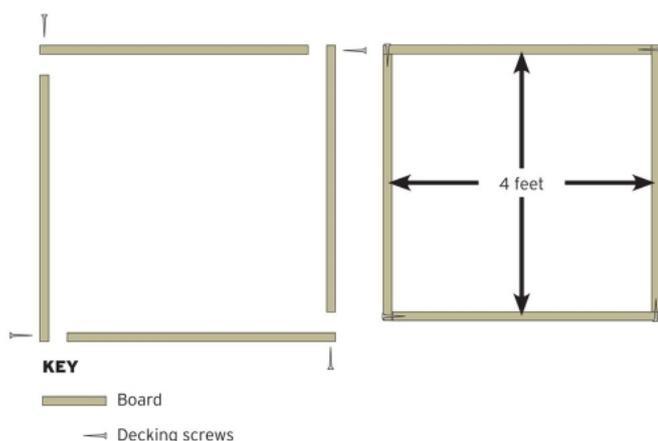
The key ingredient for feeding the soil (replacing fertilisers) is compost, therefore the one-third compost must have a good blend of minerals and trace elements. Bartholomew recommends buying/blending at least five varieties of compost as this will give the soil mix more nutrients as one variety of compost may only be made with one type of material such as sawdust. Locally Greenlife Soils, Gods Gift are good composts but blending is still recommended. If one source is used you might add small amounts of seaweed solution, rock dust and fish emulsion to ensure minerals and trace elements.

Compost can be home made but that can be tricky and is something to try after you get some food growing as waste plants and weeds are needed anyway.

The Cocopeat and vermiculite are 'inert' and provide the moisture holding, structure and nutrient storage, the only thing that needs to be added each crop is new compost. Cutting the top out of the plants (leaving roots in the soil to compost) and 'Top dressing' the square foot spot to bring the soil level back up is all that is required to start the next crop.

In Bartholomew's method, the garden space is divided into beds that are easily accessed from every side. A 4 ft x 4 ft (1.2 m x 1.2 m) garden is recommended for the first garden, and a path wide enough to comfortably work from should be made on each side of the bed, if possible, or if the bed must be accessed by reaching across it, a more narrow one should be used so that no discomfort results from tending the garden. Each of the beds is divided into approximately one foot square units and marked out with sticks, twine, or sturdy slats to ensure that the square foot units remain visible as the garden matures. Old strapping tape from worksites makes a bright wide division and is hardwearing.

Bartholomew suggests putting the SFG closer to the house as this will be more convenient for the gardener to attend the SFG during the growing season.



For accessibility, raised boxes may have bottoms to sit like tables at a convenient height, with approximately 6" (15 cm) of manufactured soil per square foot. For some plants, such as carrots or asparagus, it is recommended to build areas deeper than 6" in order to facilitate a deeper root requirement.



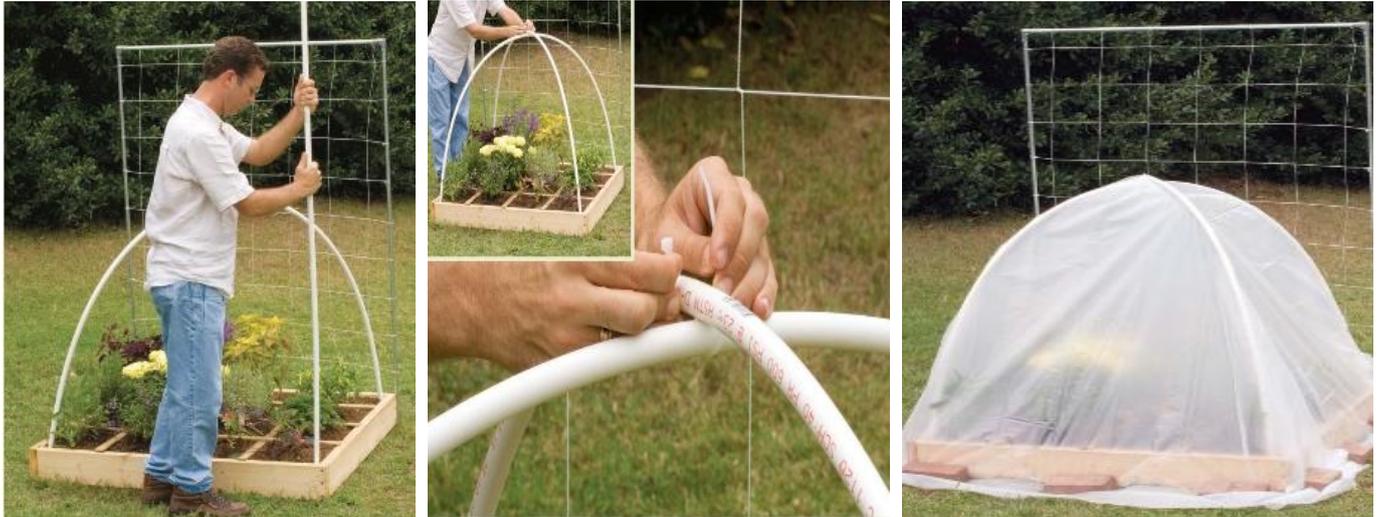
A plywood bottom can be attached to the bottom of a box, which can then be placed on a tabletop or raised platform for those who wish to garden without bending or squatting, or to make gardening easily accessible for wheelchair, cane or walker users. According to Bartholomew, gardeners wishing to utilize this "raised" method of gardening should install the SFG on a very stable surface, preferably with four legs and not just a center support as tipping can occur. Sawhorses may also be used to raise the SFG.

Water is easily and conservatively managed in the compact shallow beds by hand-watering directly at the plant roots, so that there is very little waste so young plants and seedlings are preserved.

Densely planted crops can form a living mulch, and also prevent weeds from establishing or even germinating.

Natural insect repellent methods such as companion planting (i.e. planting marigolds or other naturally pest-repelling plants) become more efficient in a close space, which may reduce the need to use pesticides. The large variety of crops in a small space also prevents plant diseases from spreading easily.

Since the beds are typically small, making covers or cages to protect plants from pests, cold, or sun is more practical than with larger gardens. To extend the growing season of a square foot garden, a shade sail and/or pest barrier (mosi net or fruit fly exclusion mesh) can be placed over the bed on a vertical frame or drape.



Example of a square foot garden style



Beds laid out ready for planting.



Same beds 3 month later



Same beds 12 month later

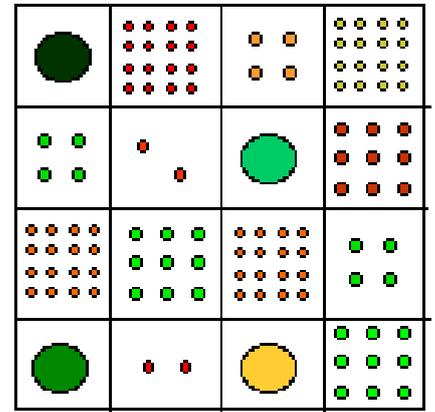


Same beds 18 month later

A basic 4x4 or 1.2m x 1.2m 16 unit "square foot garden"

The square-foot-gardening method (per Bartholomew) uses a four-sided box with no top or bottom to contain a finite amount of soil, which was divided with a grid into sections. These force gardeners to pack plants in very tightly for higher productivity in less space. The 1 large to 32 small dots in each square foot show different planting densities for different sized adult plants.

As a rule of thumb the plant spacing is 1/10 that of conventional gardening and what you will find on the back of most seed packets. Some vegetable spacing are provided to give you a guide but each variety of vegetable is different so common sense and changes will be required for local plants and conditions.



PLANT SPACING

EXTRA LARGE (1)	LARGE (4)	MEDIUM (9)	SMALL (16)
Broccoli	Leaf Lettuce	Bush Bean	Carrot
Cabbage	Swiss Chard	Spinach	Radish
Pepper	Marigold	Beet	Onion

Plant spacing		
1 per square foot	4 per square foot	9 per square foot
Roots/Tubers: Potatoes, Sweet potatoes, Ginger, Horseradish	Herbs: Parsley, Cilantro, Basil, Oregano, Mint	Roots/Tubers: Beets, Turnips, Garlic
Leaf crops: Broccoli, Kale, Collards, Cabbages	Leaf crops: Bok choy, Lettuces, Chards	Leaf crops: Spinach Fruits/Legumes: String beans, Peas
Fruits/Legumes: Melons, Squash, Tomatoes, Artichoke, Eggplant, Cucumber, Okra, Peppers, Pumpkin	Fruits/Legumes: Soybeans, Fava beans, Drying beans, Corn, Strawberries	16 per square foot Roots/Tubers: Carrots, Radishes, Onions, Green onions

To encourage variety of different crops over time, each square would be planted with a different kind of plant, the number of plants per square depending on an individual plant's size.



A single tomato plant might take a full square, as might herbs such as oregano, basil or mint, while most strawberry plants could be planted four per square, with up to sixteen radishes per square.

Tall or climbing plants such as maize or pole beans might be planted in a northern row (south in the southern hemisphere) so as not to shade other plants, and supported with lattice or netting.



Different seeds are planted in each square, to ensure a rational amount of each type of crop is grown, and to conserve seeds instead of overplanting, crowding and thinning plants. Common spacing is one plant per square for larger plants (broccoli, basil, tomato, etc.), four plants per square for medium large plants like lettuce, nine plants per square for medium-small plants like spinach, and sixteen per square for small plants such as onions and carrots.

Plants that normally take up yards of space as runners, such as squash or cucumbers, are grown vertically on sturdy frames that are hung with netting or string to support the developing crops.

Ones that grow deep underground, such as potatoes or carrots, are grown in a square foot section that has foot tall sides and a planting surface above the ground, so that a foot or more of framed soil depth is provided above the garden surface rather than below it.

The beds are weeded and watered from the pathways, so the garden soil is never stepped on or compacted.

Because a new soil mixture is used to create the garden, and a few handfuls of compost are added with each harvest to maintain soil fertility over time, the state of the site's underlying soil is irrelevant. This gardening method has been employed successfully in every region, including in deserts, on high arid mountain plateaus, in cramped urban locations, and in areas with polluted or high salinity soils. It is equally useful for growing flowers, vegetables, herbs and some fruits in containers, raised beds, on tabletops or at ground level, in only 4 to 6 inches (15 cm) of soil. A few seeds per square foot, the ability to make compost, to water by hand, and to set up the initial garden in a sunny position or where a container, table or platform garden may be moved on wheels to receive light is all that is needed to set up a square foot garden.

AS A RECAP THE 10 BASICS ARE BELOW

1. **LAYOUT** – Arrange your garden in squares, not rows. Lay it out in 1.2m x1.2m planting areas. 30cm = a foot
2. **BOXES** - Build boxes to hold/frame a new soil mix above ground.
3. **AISLES** – Space boxes 1m apart to form walking aisles.
4. **MEL'S MIX** – Fill boxes with: 1/3 blended compost, 1/3 peat moss/cocopeat, and 1/3 coarse vermiculite.
5. **GRID** – Make a permanent square foot grid for the top of each box. Needed to force close planting.
6. **CARE** – NEVER WALK ON YOUR GROWING SOIL. Work your garden from the aisles.
7. **SELECT** - Plant a different flower, vegetable, or herb crop in each square foot, using 1, 4, 9, or 16 plants per square foot.
8. **PLANT** – Conserve seeds. Plant only a pinch (2 or 3 seeds) per hole. Place transplants in a slight saucer-shaped depression.
9. **WATER** - Water by hand with good water. (Rested tap water, rainwater, pond water, worm wee, etc)
10. **HARVEST** – When you finish harvesting a square foot, add compost and replant it with a new and different crop.

What to Plant When Guide - Mel's book and most websites are for Northern hemisphere sun and climate, here is a local planting guide from Greenlife Soils so you know what to plant in Summer and Winter.

When to Sow												
Grow smarter Grow healthy	January	February	March	April	May	June	July	August	September	October	November	December
Beans Snake Beetroot Capsicum Chillies Carrots Celery Cucumber Eggplant Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Corn Sweet Potato Tomato Zucchini	Beetroot Capsicum Chillies Carrots Cucumber Eggplant Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Runner Beetroot Broccoli Cabbage Chillies Carrots Cauliflower Celery Chives Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Runner Beetroot Broad Beans Broccoli Brussels Sprouts Cabbage Carrots Cauliflower Celery Chives Garlic Globe Artichoke Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Runner Beetroot Broad Beans Broccoli Brussels Sprouts Cabbage Carrots Cauliflower Celery Chives Garlic Globe Artichoke Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Runner Beetroot Broad Beans Broccoli Cabbage Carrots Cauliflower Celery Chives Garlic Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Runner Beetroot Broad Beans Broccoli Cabbage Carrots Cauliflower Celery Chives Garlic Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beetroot Broad Beans Broccoli Cabbage Carrots Cauliflower Celery Chives Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Asparagus Beetroot Broad Beans Broccoli Cabbage Carrots Celery Chives Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Asparagus Beetroot Broad Beans Broccoli Cabbage Carrots Celery Chives Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Dwarf Beetroot Capsicum Carrots Celery Chillies Cucumber Eggplant Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Snake Beetroot Capsicum Carrots Celery Chillies Cucumber Eggplant Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini	Beans Snake Beetroot Capsicum Carrots Celery Chillies Cucumber Eggplant Kale Kohl Rabi Lettuce Spring Onions Pumpkin Raddish Melons Silverbeet Squash Tomato Zucchini

Information is intended as a guide only and suitability for planting does depend on climatic conditions and environment in your backyard

Grow smarter Grow healthy

How to Sow

Greenlife Soils

Plant	Treatment	Temp. °C	Cover	Germination
Asparagus	Soak 8 hours, sow in tray	24 - 28	yes	21 - 42 days
Beans	Sow direct	18 - 22	yes	7 - 14 days
Beetroot	Soak 24 hours, direct or tray	20 - 24	lightly	15 - 20 days
Broccoli	Direct or tray	18 - 22	yes	7 - 14 days
Cabbage	Direct or tray	18 - 22	yes	7 - 14 days
Capsicum	Sow in tray	20 - 24	yes	7 - 14 days
Carrots	Sow direct	18 - 22	lightly	14 - 21 days
Celery	Direct or tray	18 - 22	yes	10 - 20 days
Chillies	Direct or tray	20 - 24	yes	7 - 14 days
Chives	Sow in tray	18 - 22	yes	10 - 15 days
Cucumber	Sow direct	20 - 24	yes	6 - 10 days
Eggplant	Sow in tray	20 - 24	lightly	7 - 14 days
Kale	Direct or tray	18 - 22	yes	7 - 14 days
Kohl Rabi	Direct or tray	18 - 22	yes	7 - 14 days
Jeru, Artichoke	Sow direct	18 - 24	yes	5 - 10 days
Lettuce	Sow in tray	18 - 22	lightly	5 - 10 days
Melons	Sow direct	22 - 26	yes	7 - 14 days
Spring onions	Direct or tray	18 - 22	lightly	10 - 14 days
Parasnips	Direct or tray	15 - 22	lightly	14 - 35 days

Plant	Treatment	Temp. °C	Cover	Germination
Peas	Soak over night, sow direct	15 - 22	yes	7 - 14 days
Raddish	Sow direct	13 - 21	lightly	3 - 7 days
Silverbeet	Soak 24 hours, direct or tray	20 - 24	lightly	15 - 20 days
Spinach	*Stratify 2 weeks, sow in tray	10 - 15	lightly	7 - 14 days
Tomato	Direct or tray	21 - 25	yes	7 - 14 days
Turnips	Sow direct	18 - 22	yes	7 - 14 days
Zucchini	Direct or tray	20 - 25	yes	6 - 10 days

* Stratify: To treat dormant seeds by chilling under moist conditions to simulate winter conditions.

Information is intended as a guide only and suitable for planting does depend on climatic conditions and environment in your backyard.
Information based on 'Plant Propagation A to Z by Cecel Bryant (A very useful book)



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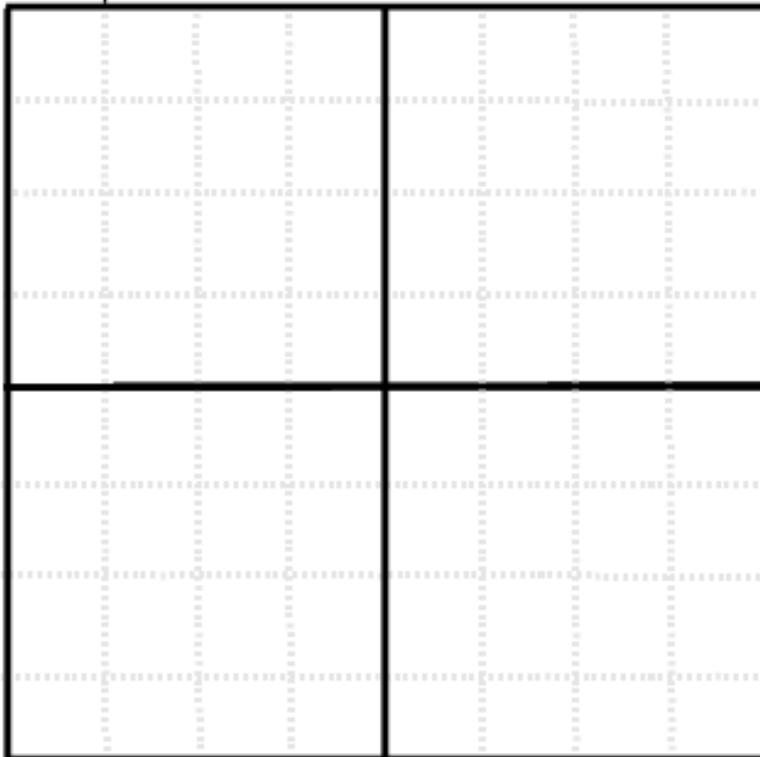
Square Foot Gardening

Planting List Visit www.squarefootgardening.com for more info

	Plant	Companions	Spacing
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			

SquareFoot Gardening Grid

This Represents one 4'X4' box. Divide each 12"X12" section into the needed plant spacing. Either 1, 4, 9, or 16 plants per SqFt.



To Use this grid draw in the needed grid size for each square foot and use the letter of the plant above to populate the grid. For 1, 4, or 16 you can use the grid provided.