

## **"Gardening...Your Other Food Storage"**

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**And the Lord God planted a garden...**And the Lord God took man and put him into the garden to dress it and keep it." GENESIS 2:8,15

**Why is Gardening So Important?** Your Basic Food Storage is Survival Mode (300 lbs grains and 60 lbs beans). Raising fruits and vegetable in your own garden will be one way to supplement this. Gardening also has other added benefits: Family Unity, Appreciation of Work, Self-Sufficiency, Beautifying your Home, Pleasure, Health, Reduced Expenses, and Following the Council of the Brethren.

"There are blessings in being close to the soil, in raising your own food even if it is only a garden in your yard and a fruit tree or two. Those families will be fortunate who, in the last days, have an adequate supply of food because of their foresight and ability to produce their own. (Ezra Taft Benson, Oct. 1980)

"Planting a garden, even a small one, allows for a greater degree of self-reliance. With careful attention to factors such as seed selection, planting times, soil preparation and fertilization, and watering, anyone from a first-time gardener to an experienced "green thumb" can cultivate a productive garden. With the right information and a little practice, individuals and entire families can enjoy the many benefits of planting and tending a garden." [providentliving.org](http://providentliving.org)

Tonight we will be covering 4 basic aspects of gardening: Sprouting...Indoor Gardening, Container Gardening, Square Foot Gardening, Gardening in the Antelope Valley.

### **Sprouting**

[sproutpeople.com](http://sproutpeople.com)

In India, during 1938, severe crop failures and food shortages were responsible for thousands of deaths due to scurvy and famine. It wasn't until Jan of 1940 that a plan to solve the problem was announced. Each person was given an ounce of dried sprouted grain or chick peas twice a week. After 4 months there were no reported cases of scurvy. In addition to providing enough vitamin C (and other essential vitamins) sprouts can supply adequate amounts of protein to maintain health.

#### **Sprouts Are**

**Nutritious** - seeds are packed with nutrients, as each grows, proteins, enzymes, vitamins and other nutrients increase while at the same time toxins and enzyme inhibitors are reduced, increasing digestibility. **Fresh** - sprouts grown at home and harvested at the dinner table are the freshest food you'll ever eat and they can be grown year round. **Cheap** - sprouting is ridiculously cheap! **Easy** - it all boils down to "just add water." It requires no special equipment, no soil nor sunshine, and very little effort. All you need is seeds, moisture, warmth and about 5 minutes each day. **Fast Growing** – Sprouts can mature in 1-5 days. **Varied** - you can grow many kinds of seeds so that your salads and recipes will always have something new, diversity is the spice of life!

Using Your Sprouts

Sprouts can be used in: salads, breads, soups, cereal, sandwiches, pancakes, omelets, Chinese or Mexican food, casseroles, meatloaf, blended drinks, or all by themselves.

### Seed Soaking

**Check** the seeds for any stones or hulls then rinse the Seeds before soaking. Dry seeds are dormant. Soaking a seed ends it's dormancy and begins a new life. Different seeds soak up different amounts of water. As a rule **2-3 TIMES AS MUCH** water (as seeds) is enough, but you can not use too much - the seeds will only absorb what they can regardless of what they have access too. A few seeds do not soak at all and though most do, they soak for varying duration's. The norm is 8-12 hours, but some soak for only 20 minutes, some occasionally soak in warm or hot water and for more or less time - Check the seed information pages for the seeds you are sprouting. Also be sure and mix your seeds when you first immerse them in the water so they get thoroughly soaked.

### After The Soak

Skim off any non-seeds that are floating on the water. Run your finger tips over any floating seeds to see if they will sink. Skim or pour off any seeds or non-seeds remaining afloat.

### Rinsing

Use cool water (60-70°). Use a lot of water. Use high water pressure whenever possible. Rinse 2 times daily. By turning your faucet to high or using a sprayer you "clean" your sprouts, infuse them with oxygen and keep them loose. Though sprouts will grow with little water - as long as the humidity and room temperature is right, it is our long held opinion that they won't grow as well, store as well or taste as good if not rinsed.

### Draining

Drain as much of the rinse water out of your sprouts as is humanly possible. Be Thorough! So, spin, shake, bounce and twirl your sprouter - just get as much water out as you can after every thorough rinse. You will be repeating the rinse/drain cycle 2 times per day until they are the desired length.

### How Long Should the Sprouts Be?

For sprouts you are going to cook: let sprout grow as long as the seed

For raw sprouts: (except wheat) let them grow 2-3 inches then let them green

### Greening

We don't do anything special to green our sprouts when we grow at home. We grow them from start to finish on the kitchen counter - or the dish drainer if there is room. In either case they get light from our combined 150-200 watts around the room - just regular light bulbs, and a little (very) indirect sunlight. When you're growing sprouts, room light is nothing to worry about! Don't bother hiding your Sprouts, they can't begin photosynthesis until they have leaves anyway and contrary to the all too popular dogma in sprouting books - it does no harm! On the day your Sprouts are ready to take in light - when their first leaves have shed their hulls or are about to - allow your sprouts light - if you've been keeping it from them. If you grow them - like we do - where light is already available, just watch the magic.

### Grass & Greens

When you see them growing tall (an inch or so for Grass and 2-3 inches for Greens) but yellow (sans chlorophyll) move it to a well lit location. If you use direct sunlight be prepared to do more watering. As the plants grow their roots become more voluminous than the soil on which they're planted, so they drink up the moisture faster the bigger they get. Just plan on watering every day during the last few days. We use the sun whenever we can when Greening plants, there is nothing better for the big plants!

### Clean is Good

Thoroughly wash your sprouter between harvests and sterilize every 3-4 crops. We suggest soaking your sprouter for 10-20 minutes in bleach water (1 Tbs. of bleach per pint of water and then scrubbing thoroughly. You can also use food-grade Hydrogen Peroxide, and some folks like Grapefruit Seed Extract. Whatever works for you is fine. With a few of Sprouters you may need to poke some seeds out of some tight places. We use a paper clip or toothpick for this task. Be sure to rinse all of that bleach.

### Refrigerate your Sprouts

Before moving your sprouts to the refrigerator, they should be dry to the touch. In most cases we let our sprouts sit for 8-12 hours after their final rinse, and extremely thorough drain before we refrigerate them. There is no quicker way to kill produce than to refrigerate it wet, so make sure that your sprouts are reasonably dry before you refrigerate them. You can transfer them to a plastic bag, a produce bag, your sprouter, glass or plastic container. We almost always seal our sprouts - we do not let them "breathe" - that just dries them out. But If your sprouts are wetter than you think they should be, or they are warm when you refrigerate them, go ahead and punch a few holes in the bag - it won't hurt in that case and it may help a lot. Once they are cool and dry you can seal them in a new bag or another container. Your home grown sprouts should easily keep for weeks.

### Kinds of Sprouters

Do not be put off by all of the conflicting directions on sprouting! The truth is that seeds will sprout with very little bother. It matters not whether you use sprouting jars, glass jars with mesh lids, sprouting pans, colanders, mesh bags, or elaborate automatic sprouting systems. Many people do prefer glass or stainless steel rather than plastic containers, but I never have had any problem with the plastic colanders that I like to use. The amount of soaking time and sprouting time are other aspects of sprouting that are very forgiving. Sprouts may be harvested in only one day or up to five days after the first tiny tail peeks from the end of the seeds

### **Canning Jar**

Quart size canning jars work great for sprouting. You can buy special plastic sprouting lids for them (Whole Wheatory); or use the regular jar ring and: old, clean nylon; a piece of screening; or a lid cut from hard plastic crafting canvas (Michaels).

**Easy Sprout** is made up of a 1 Quart Growing Vessel, a Solid container/Base that catches excess Rinse water, a Small Seed Insert that snaps in when sprouting small seeds, two Growing Lids 1 for home-Domed and 1 for the road-Flat, and a Solid Lid for refrigerator storage of your sprout crop. It has great drainage and the best air-circulation of any sprouter. The mandatory choice for sprouting in high humidity and great for travel sprouting! Very versatile - Easy Sprout can sprout virtually any seed, anywhere! It is so easy to use, just soak, drain and wait for your sprouts to grow.

**Trays:** Any plastic tray with sides with holes poked in the bottom for drainage. Best inside bigger tray with gravel to catch the extra water drainage. Use medium soil or no soil. Set by inside window for indirect sunlight. Or Sproutmaster: Several sprouters can be stacked with the tray lid in place without losing necessary air circulation. A removable divider in the middle makes it possible to grow a half crop, a full crop or two different type crops at the same time. With a lid placed under the bottom as a drip tray and a lid placed over the top your sprouts will stay crisper longer in the refrigerator without losing vitamins or souring.

NAME	HOW MUCH	HRS TO SOAK	HARVEST	LENGTH AT HARVEST TIME
Adzuki Beans	1 cup	12 hours	2-5 days	¼ inch to ¾ inch (Grown in dark)
Alfalfa Seeds	4 Tbls	8 hours	3-5 days	1/8 inch to ¾ inch
Almonds	1 cup	8 hours	1 day	No shoot produced
Buckwheat	½ cup	12 hours	3-5 days	¼ to ¾ inch
Cabbage Seed	¼ cup	8 hours	3-5 days	¼ inch to ¾ inch
Cow Peas	1 cup	12 hours	3-6 days	½ inch to 1 inch
Garbanzo Beans	1 cup	12 hours	2-4 days	¼ inch to 3/8 inch
Clover Seeds	3 Tbls	8 hours	3-5 days	1/8 inch to ¾ inch
Corn	1 cup	12 hours	2-3 days	3/8 inch
Fenugreek	½ cup	8 hours	3-5 days	¼ inch to 3/8 inch
Green Peas	1 cup	12 hours	2-3 days	¼ inch to 3/8 inch
Lentils	1 cup	12 hours	2-4 days	¼ inch to 3/8 inch
Millet Grain	1 cup	8 hours	3-4 days	¼ inch
Mung Beans	½ cup	12 hours	2-5 days	¼ inch to ¾ inch (Grow in dark)
Mustard Seeds	¼ cup	8 hours	2-5 days	¼ inch to ¾ inch
Oat Groat Kernels	1 cup	12 hours	2-3 days	¼ inch to ¾ inch
Pumpkin Seeds	1 cup	8 hours	1 day	No shoot produced
Radish Seeds	¼ cup	8 hours	2-5 days	¼ inch to ¾ inch
Rye Grain	1 cup	12 hours	2-4 days	¼ inch to ½ inch
Sesame Seeds	2 cup	8 hours	1-2 days	No shoot produced
Sunflower Seeds	2 cups	8 hours	1-3 days	0 to ¼ inch
Watercress	4 Tbls	8 hours	2-5 days	3/8 inch to 1 1/8 inch
Wheat Kernels	1 cup	12 hours	2-4 days	¼ inch to 3/8 inch

### Different Kinds of Sprouts

**Poisonous: tomato, pepper or potato seeds**

**Alfalfa Sprouts (raw):** Mild flavor, mild crunch, big time nutrition, and easy to grow. Seed to Sprout in 5-6 Days Yield = 7:1 Seed Shelf Life at 70°= 3-4 years Sprout Shelf Life = 2-6 weeks Vitamins A, B, C, E and K, Calcium, Iron, Magnesium, Phosphorus, Potassium, Zinc, Carotene, Chlorophyll, Amino Acids, Protein: 35%. Alfalfa sprouts strengthen the immune system, mucous membranes and have amino acids and compounds that help ward off many cancers They are also highly touted for preventing menopausal symptoms, PMS, osteoporosis, and heart disease. They are said to soothe arthritis and soothe digestive, reproductive and glandular tracts. They are sensitive to heat, ready in 7 days. Sprouted, they lower the bad cholesterol and fat but not the good HDL fats. Sprouts also contain an abundance of highly active antioxidants that prevent DNA destruction and protect us from the effects of aging.

**Broccoli Sprouts (raw):** Mild flavor, mild crunch, big time nutrition, antioxidants, easy to grow. Seed to Sprout in 3-6 Days Yield=5:1 Seed Shelf Life at 70°=4-5 years Sprout Shelf Life = 2 - 6 weeks Vitamins A, B, C, E and K, Calcium, Iron, Magnesium, Phosphorus, Potassium, Zinc, Carotene, Chlorophyll, Amino Acids, Protein: 35%, Antioxidants. Broccoli Sprouts have been found to have remarkable anti-cancer properties, strengthen the immune system, strengthen the antioxidant system, and decrease inflammation and blood pressure. They improve our cardiovascular health.

Buckwheat (raw): Rich in vitamins B,D, and E and many minerals and linoleic acid. The great as a salad green.

Lentil Sprouts (raw/cooked): Vitamins A, B, C and E, Calcium, Iron, Phosphorus, Protein: 25%. Lentil sprouts provide a generous supply of essential amino acid lysine. The lack of it causes slow growth and leads to anemia, reproduction problems, pneumonia, and acidosis.

Mung Bean Sprouts (raw): Soak 15 hours. Vitamins A, B, C and E, Calcium, Iron, Magnesium, Potassium, Amino Acids, Protein: 20%; Mung beans are the most consumed sprouts on Earth.

Radish Sprouts (raw): Spicy and so very beautiful! Seed to Sprout in 3 - 6 Days

Yield = 5:1    Seed Shelf Life at 70° = 4 - 5 years    Sprout Shelf Life = 2 - 6 weeks

Vitamins A, B, C, E and K, Calcium, Iron, Magnesium, Phosphorus, Potassium, Zinc, Carotene, Chlorophyll, Amino Acids, Protein: 35%, Antioxidants. Radish sprouts have 10 times more calcium than a potato and more vitamin C than a pineapple.

Soybeans (raw/cooked): Extremely rich in protein and vitamins A,B,C and E, minerals and lecithin.

Wheatgrass juice is easily grown at home. The grass is sprouted for 10 days and then is ready to be juiced into wheatgrass juice, which can help build vitality for anyone desiring optimum health. Wheatgrass is perhaps the most powerful and safest healing aid there is.

Wheat Sprouts (raw/cooked): Seed to Sprout in 1 - 3 Days    Yield = 1.5:1

Seed Shelf Life at 70° = 1.5 - 4 years

Sprout Shelf Life = 1 - 2 weeks

Nutritional value: Vitamins A, B1, B2, B3, B5, B6, B12, B17, C, D, E, F, H, K, P, choline, folic acid, inositol, PABA, Protein: 30%. Minerals: boron, calcium, chlorine, chromium, cobalt, copper, iodine, iron, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, selenium, silicon, sodium, sulphur, zinc. Germinated wheat sprouts aid metabolism, neutralize toxins, cleanse the blood, and provide energy for innumerable bodily functions. These enzymes, also aid the digestion of other foods, and can benefit anyone who suffers with digestive and assimilation problems. During the 3 days of sprouting, the vitamin E content can increase 300%, vitamin C increase 600%, and the B vitamins have been found to increase from 20% to 1200%, including B17, and protein content increases by 300% compared to the unsprouted wheat seed.

### How to Obtain Seeds

Seeds, grains, and lentils for sprouting may be obtained in most natural food stores or grain outlets (Walton's) and provide an inexpensive, as well as healthful way to provide food for the family table. Caution should be used so that only untreated seeds are purchased (not ones for your garden). You do not need to buy expensive seeds packaged especially for sprouting. A lentil is a lentil. There are not "special lentil seeds". Don't waste your money on them. Try different kinds of seeds until you find the ones you really like and then stock up on those kinds.

### Shelf Life and Storage of Seeds

**Basic** storage is 2-5 years in a Cool, Dry and Dark Place. 55-70°F with humidity 70% or less.

Seed life can be maximized by **Freezing** - which will increase shelf life 4-5 times or

**Refrigerating** - which will at least double it. In all cases it is essential that you avoid condensation - which could shorten a seed's life.

### Growing Buckwheat or Sunflower "Lettuce" and Wheatgrass

Un-hulled Buckwheat or Sunflower seeds (Seeds that still have their hulls on.)

2 Growing trays – use serving platters, or recycled plastic food containers

Dark piece of cloth or hand towel

Spray hose at kitchen sink or squirt bottle.

Potting soil or Top soil –(Potting soil dries out faster and needs to be watered more.)

The amount of seeds used will depend on the size of the trays. (Ideally, each seed should touch the others without being piled on top of each other when spread out on top of the soil.)

- Rinse the seeds to remove any dust and Soak overnight or for 8 - 12 hrs.
- Drain and sprout for 12 hrs.
- Spread approximately  $\frac{3}{4}$  of an inch of soil on one of the trays. Then sprinkle the sprouted seeds over the top of the soil, trying not to “pile” them.
- Spray the tray with water. You want it just barely damp...not muddy or puddlely.
- Cover with the 2<sup>nd</sup> tray, and then cover the top of the “lid” with the dark fabric or towel if your trays or transparent. Set aside for 3 days. Uncover after 3 days. If there is bluish-green mold instead of baby plants, try again with new seeds and less water and make sure that the spot you left them in is not too warm. (65° - 75°)

-Water every 1 - 2 days, keeping soil moist, not muddy. Depending on the room temperature you can harvest your “lettuce” with scissors within 7 to 10 days. Cut stems close to the soil. Do not rinse if you plan to store them. They will keep for 7 to 10 days in the refrigerator.

## Recipes

For More Recipes: [isga-sprouts.org/recipes.htm](http://isga-sprouts.org/recipes.htm)

### Whole Grain Sprout Bread

Makes 2 - 3 loaves

To soften yeast - combine in a large bowl: Allow the yeast to proof (bubble) for 5 min.

2 1/2 cups warm water                      2 T. active dry yeast

Stir in:

1/2 cup oil                                      1/2 cup honey                                      1 Tbs. salt  
2 Cups Sprouted Grains - whole or ground lightly                                      4 cups flour

Beat well. Cover and let this “sponge” sit 45-60 minutes. Stir down and gradually add:

3-4 cups flour (any combination)

Turn dough out onto a lightly floured surface and knead until smooth. Place dough into a greased bowl - turn it over and around to coat the whole of the dough. Cover and let rise until doubled (60-90 minutes). Knead dough down in the bowl, divide and shape into 2 - 3 oblong loaves.

Place in well greased loaf pans and cover. Let rise 60 minutes or until almost doubled. Bake at 375° for 35 to 40 minutes. Remove loaves from pans and cool on wire racks.

Notes- Mix and match grain sprouts to your heart's content. When using whole wheat and/or rye flours you might add wheat gluten - at a rate of 1/8 cup per cup of flour - as it often produces a nicer loaf.

## Outdoor Gardening



**“We encourage you to grow all the food that you feasibly can on your own property. Grow vegetables and eat them from your own yard. Even those residing in apartments or condominiums can generally grow a little food in pots and planters. Study the best methods of providing your own foods. Make your garden ... neat and attractive as well as productive.” Spencer W. Kimball *Ensign*, May 1976**

There are many different types of outdoor gardens: container gardens, square-foot gardens and traditional row gardens, gardens for those with physical handicaps, family friendly gardens and gardens that are so simple even novices can succeed with them. Tonight we will be covering a self-contained container garden, square-foot gardening (a type of raised bed garden) and then give you some hints for gardening in the Antelope Valley. There is much information on the internet on these types of gardens plus information on individual crops. I encourage you to explore these sites if you have specific questions. I think you will find most of the answers are out there.

### **"Earthbox" Self-Contained Gardening System (SCGS)**

<http://www.earthbox.com/consumer/instructions.html>

The Earthbox can double yields, using less water and fertilizer compared to conventional gardening, no weeds, portable, you can never over or under water and so easy even those with black thumbs can have a productive garden.

Soil: You'll need the big bag "2 cubic feet or about 60 quarts per box. The potting mix can be used 5-6 seasons before replacing. Or use a mixture of 1/3 peat moss, 1/3 vermiculite and 1/3 compost mixture-homemade is best. (With this mixture I don't think you will need any fertilizer.)

Fertilizer: The EarthBox® is designed to be used with a strip of common dry granular fertilizer or plant food for vegetables. Almost any brand of fertilizer will work as long as it is not designed to be mixed with water and all 3 numbers on the label are between 5 and 15. You'll need two cups of fertilizer for each planting. Organic fertilizers can also be used. Simply use 3 cups of organic fertilizer to replace the 2 cups of chemical fertilizer. Do not add any additional fertilizer during the growing season.

For Tomatoes and Vegetables: To prevent blossom end rot, simply add 2 cups of dolomite or hydrated lime to the top 2 or 3 inches of the **potting mix** before each planting. If Blossom End Rot develops during the season, mix 1/4 cup of hydrated lime to a gallon of water. Spray the mix directly on the plants or add it to the water reservoir the next time you water your EarthBox®. Make sure to stake or cage your tomatoes.

Plant Selection: Use the smaller 5-7" tall seedlings available in 2" pots, or start with seeds.

Planting: Use the placement chart when planting your box. Resist the temptation to overplant your EarthBox. Select a sunny spot, as most warm season crops, such as tomatoes, need 6-8 hours of daily sunlight. Cool season leafy vegetables such as spinach and lettuce require partial shade. The plants should always be planted through the plastic cover into the **potting mix**. Always leave the cover on. Gently loosen the plant's root ball and set your plants into the soil as far away from the fertilizer strip as possible.

Watering: Allowing the reservoir to go dry will shut down the system, so don't try to regulate the water level. Always use the fill tube to keep the water reservoir filled. You'll know the reservoir is full when water flows from the overflow hole. Add water every few days when the plants are young, and every day when your plants are mature.

**Replanting and Winterizing:** At the end of the growing season remove the old plants, the cover, and dig out and discard the fertilizer strip. Drain the reservoir by tipping the EarthBox to avoid frozen water in the system. Cover the box with a new cover until you are ready to plant again. To replant add additional compost if necessary, creating a mound, and then continue with Steps 5-8 of the instructions.

## Three Simple Rules

- Always keep the cover over the potting mix and fertilizer.
- Always keep the reservoir full.
- Place the fertilizer on top of the potting mix and don't use water-soluble fertilizers.



## Frequently Asked Questions

What is the best way to control weeds in my garden?: Since the potting mix in The EarthBox is covered, weeds don't even have a chance to start. There's never any need to pull weeds or use herbicides.

What if I need support stakes for my tomato plants? Tomatoes, eggplant, cucumbers, beans and other vine plants need support.

How can I prevent splitting tomatoes?: Tomatoes will split when (1) there is lots of heat and lots of rain or (2) if very dry weather is followed by two days of rainfall. It is really caused by the drastic change in the amount of water in the fruit along with the heat. You can cover your plants with shade cloth to cut the amount of heat and always remember to keep the water reservoir full so the plants always have a consistent supply of water.

What can I do to prevent black spots on the bottom of my tomatoes? The black on the bottom of your tomatoes is called "blossom end rot." It is caused by a lack of calcium and other ingredients from the potting mix. Adding 2 cups of hydrated lime to the potting mix before planting as in the instructions can help prevent the blossom end rot from forming. In the event the blossom end rot still presents itself mix 1/4 cup of hydrated lime with one gallon of water and add that to the reservoir the next time you fill your Earthbox with water.

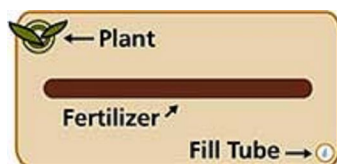
Can I remove the plastic cover once the plants have started growing? You should never remove the cover until you're ready to replant. The SCG cover is an integral part of the Self-Contained gardening system. The cover helps to keep your potting mix moist; it keeps the weather away from your fertilizer and the cover helps to stop weeds and other unwanted plants from getting into your SCG.

**Plant Selection Chart:** Use this list to purchase the correct number of seedlings for the type of plants you wish to grow. Refer to the Plant Placement Guide. If the plants have the same configuration, they can be successfully mixed in the Self-Contained Garden.

Artichokes (2 seedlings)  
 Beans (16 seedlings)  
 Bell Peppers (6 seedlings)  
 Broccoli (6 seedlings)  
 Brussels Sprouts (6 seedlings)  
 Cabbage (6 seedlings)  
 Cauliflower (6 seedlings)  
 Celery (6 seedlings)  
 Chard (6 seedlings)  
 Corn (16 seedlings)  
 Cucumbers (4 seedlings)  
 Eggplants (2 seedlings)  
 Flowers (8 seedlings)  
 Greens (6 seedlings)

Herbs (6 seedlings)  
 Hot Peppers (6 seedlings)  
 Kohlrabi (8 seedlings)  
 Leeks (8 seedlings)  
 Lettuce (8 seedlings)  
 Melons (4 seedlings)  
 Okra (8 seedlings)  
 Onions (10 seedlings)  
 Peas (16 seedlings)  
 Salad Greens (8 seedlings)  
 Spinach (10 seedlings)  
 Squash (4 seedlings)  
 Strawberries (6 seedlings)  
 Tomatoes (2 seedlings)

Legend: The patterns shown below illustrate the best placement of plants and fertilizer based on the suggested number of plants per variety as listed above.



Double Row (3/4 seedlings per row)



(5 seedlings per row)(8 seedlings per row)

Single Row (2/4 seedlings per row)



## Making a Self-Container Gardening System

Designed by Josh Mandel

<http://www.josho.com/gardening.htm>

Here's how I make a homemade "self-contained gardening system" in about 10 minutes, and for about \$10 (instead of the \$40.00-plus-shipping that the genuine article costs from various sellers).

**A GENTLE REQUEST:** I offer them for everyone's use, free of charge. However, I do request that if you find these instructions useful, and you copy the design and/or the text and/or photos from this site, please credit me or the website. If you would include a link to the website, I'd be even more appreciative. Additionally, if you know anyone who's charging money for this information on eBay, I'd love to know about it since it's both a violation of the copyright (the material on this site is copyrighted) and of the spirit in which this information has been posted. Thank you!

MATERIALS (figure 0):

- **2-** 18-gallon (or similar) tote boxes with lids, such as Rubbermaid. Dark colors are preferable. Also, a box that is somewhat wider is preferable to one that's deeper. (You can also use larger totes, but note that once you fill them with soil, they'll be very hard to move.) The more straight-sided the box, the better.
- **1-** 5" pond basket (these are plastic planters with perforated sides to allow the free flow of water). **See note 3 at bottom of page regarding pond baskets.**
- **1-** 2-foot length of 1 ½" flexible black tubing (1-1/2" should be the outside diameter) or bamboo. (See Note 5 at bottom of page.) Also: not shown in the pictures is the fact that I cut one end of the tube at an angle. This helps the free flow of water through the tube and into the water reservoir in the bottom of the finished box.



Figure 0

EQUIPMENT:

- a pencil or pen
- a drill with a 1/4" or larger bit and a 1-1/2" bit
- a saw (handsaw will work, but a jigsaw makes it much easier)

**STEP ONE**

Take one of the totes, the pen/pencil, and the pond basket. Mark the HEIGHT of the basket all around the outside of the tote (see Figure 1).



Figure 2

**STEP 2**

Cut along this line. When you've cut the entire box, discard the top (open) half; you won't need it. See Figure 2.



Figure 2

**STEP 3**

Turn the bottom portion upside down. Take the pond basket, put it upside-down on top of the bottom portion of the tote, and trace the circle. Cut the circle out, but you're going to cut about a half-inch or more INSIDE the circle (so that this hole is about an inch smaller in diameter than the top of the pond basket). After you've done this, drill a 1-1/2" hole in the corner of the tote bottom, and a lot of small (1/4" or so) holes all over it. See Figure 3. We'll call this piece the "base."



Figure 3

**STEP 4**

Use the pond basket to make a hole on the outside of the tote 1/2 inch shorter than the basket (drain hole) Take the pond basket and put it right-side up in the bottom of the second tote box (the one that hasn't been used yet). See Figure 4.



**STEP 5**

Put the base in the tote box (drilled side up), wedging it down as far as it will go, and positioning the pond basket directly under the big hole. See Figure 5.

Because the big hole in the base is smaller in diameter than the top of the pond basket, the pond basket will help support the weight of the base once the soil is on top. And because the pond basket will be filled with soil, it will act as a wick for the moisture (much like the square wicks in opposing corners in the authentic "self-contained gardening

system" that was my inspiration for this container).



Figure 5

**STEP 6**

Drill a 1/4" (or slightly larger) hole straight through the outer box AND the base just below the level of the base.

This is the drainage hole. See figure 6.



Figure 6

**STEP 7**

Cut the end of the 2-foot length of 1-1/2" pipe at an angle (if you haven't done so already) and feed this angled end into the 1-1/2" hole in the base. This is the pipe you'll use to fill the box with water.

See Figure 7.

Figure 7

**STEP 8**

You're pretty much done. Drill a matching 1-1/2" hole near the corner of the lid for the pipe to go out, and enough other equally spaced 1-1/2" holes in the lid for however many plants you're going to put into the box (I use the planting guide that came with my commercially-available "self-contained gardening system" to tell me how many plants of any given type I can reasonably fit in the box). **SEE NOTE AT BOTTOM OF PAGE REGARDING THE PLANTING GUIDE.** Fill the box with soil (the pond basket and the entire remaining box above the base). Pour on the 9-15-15 fertilizer stripe of as shown in the planting guide that accompanies the commercially-available "self-contained gardening system". (They also recommend adding lime or dolomite to the soil if you're planting tomatoes.) Put on the lid.

**STEP 8**

Take the lid that fits onto the box. Cut out the center of the lid, leaving just a rim (about 2" worth), enough to snap back onto the box. (You can discard the center piece, we won't be using it.) It should look like this:



(Notice that I've cut a circular area in one corner for the pipe. This is not strictly necessary. I did it so that I could have the pipe all the way in the corner, leaving more room for plants.)

**STEP 9**

Now cut a piece of **plain white** tarp (vinyl, etc.) so that it is at least a couple of inches bigger around than the top of your self-contained gardening system. Cut a hole in it for the pipe to fit through. When you're ready to plant, cut "X"s in the tarp where the plants will go.

**STEP 10**

Now just snap the rim onto the box:

Note that because of the tarp, the lid may NOT snap neatly into place anymore. This may not be an issue for you, but if you're in a windy area, you might find it necessary to tie the rim in place:



## NOTES (added 4/25/07)

1. One of the companies that sells "self-contained gardening systems" has been gracious in putting their planting guide online: [Planting Guide - PDF Format](#). It's a large file; give it time to load. Print it out, and be sure to read the whole document before using your self-contained gardening system (whether it's commercial or homemade).
2. Many folks have trouble finding "pond baskets." (BTW, the 5" refers to their HEIGHT, not their diameter, but the height is not at all crucial...it will just dictate how tall your insert is.) They're also sometimes called "water baskets." I find mine in the "water feature" area of my local gardening center or Home Depot/Lowe's-type store -- the area where they have fountains, pumps, and hoses. In the event that you can't find a suitable pond basket -- and they CAN be square, circular, tall, short, etc. -- you can improvise this a couple of ways and even perhaps save some more money. You can use a #10 can, removing the top and bottom and punching lots of holes in the sides. (Just substitute the can for the pond basket in all the steps above...marking the height of the can in Step One)
3. A number of people have asked me what I do about staking. So I have two methods I utilize. For one, I have my boxes up against a chain link fence, and I tie the plants to the fence using plant ties. But frequently the plants are too big and lush to all be attached to the fence. So I buy the very sturdy, tall, heavy wooden stakes sold at my local hardware store's gardening department, and pound them into the ground around the boxes.
4. **I no longer use PVC in any of my boxes. PVCs have been demonstrated to leach plasticizers and harmful chemicals, including endocrine disruptors. There are plenty of alternatives, so there's no good reason to use PVC and risk putting these chemicals in your homegrown fruits and vegetables.**
5. **What sort of plastics are to be avoided?** Of course, you want to avoid these all throughout the self-contained gardening system, not just with the watering tube. The kinds of plastics we generally regard as safe are those with the numbers 1, 2, 4, or 5 (these numbers are usually found inside the recycling symbol). The ones we seek to **avoid** are 3 (Polyvinyl Chloride/Vinyl), 6 (Polysterene/Styrofoam), and 7 (Polycarbonate and others).

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## Online Resources for Container Gardening

For ready made container gardens:

[www.EarthBox.com](http://www.EarthBox.com) & [www.aGardenPatch.com](http://www.aGardenPatch.com)

Planting Guide and Instructions for Container Gardening:

[Planting Guide - PDF Format](#).

For growing Citrus in containers:

<http://www.fourwindsgrowers.com/growing/containers.html>

"Some may ask, "Why have a garden when we can buy produce inexpensively?" One of the important keys of home production and storage is the acquisition of skills. Sometimes we may be able to buy food inexpensively, but the skills and intuitive wisdom gained through gardening and other home production projects are worth more than the time and effort they require. In a sustained emergency, basic gardening know-how are invaluable. Some home production and storage goals you and your family may want to consider include: planting and caring for a garden; learning techniques of home canning, storing seeds; and having adequate tools." "Catching the Vision of Self-Reliance," *Ensign*, May 1986

## Square Foot Gardening

<http://www.squarefootgardening.com/>

How would you like a garden filled with beautiful flowers, fresh herbs and luscious vegetables, but NO WEEDS and NO HARD WORK? No more heavy digging or all-at-once harvest. Less watering, weeding, and thinning. What's left is a picture perfect garden you will be so proud of. Square Foot Gardening is a uniquely simplified method of gardening that produces 100% of the harvest in only 20% of the space -- AND -- without all the hard work and drudgery of single row gardening.

- Easy to understand. No extensive training or years of experience
- Requires much less effort; No Heavy Digging, No Tilling, Little Weeding
- 5 times more productive than conventional row gardening
- Requires very little space; 80% less than conventional gardening.
- Uses much less water – about 20% compared to traditional gardening
- Uses fewer seeds. No seed goes to waste
- Is not dependant on fertilizers. Your own compost provides the nutrients
- Does not require a tiller or other expensive tools
- Can be done anywhere – No need to condition existing soil
- Can be done in as little as 4 feet by 4 feet, -- or as large as you want.
- Can be done by those with physical or mental limitations
- Great family project, all ages can participate - kids love to garden.

**What could be easier than this?**



## First the location



Pick an area that gets 6-8 hours of sunshine daily.



Stay clear of trees and shrubs where roots and shade may interfere.



Have it close to the house for convenience.



Existing soil is not really important, since you won't be using it.



Area should not puddle after a heavy rain.



## NOW THE DETAILS

**1 - LAYOUT.** Always think in squares: lay out 4 foot by 4 foot planting areas with wide 3 foot walkways between them. (see photos below)

**2- LANDSCAPE DESIGN.** Try locating your boxes at different places around the yard to see if they can enhance your landscaping or emphasize a patio. You can put your 4' x 4' boxes close to the house and even arrange them in interesting patterns – either all in one area or scattered about the yard at strategic locations. And those aisles in between your gardens can be part of your overall landscaping design. Don't block traffic lanes, but do make your garden readily accessible. (see photos below)

**3 - BOXES.** Build garden box frames no wider than 4 feet, and 6 to 8 inches deep. The length is not as important, but a recommended size for your *first time* is one frame 4 foot by 4 foot. You can, of course, go smaller. A 2 foot by 2 foot works great on patios and 3 foot by 3 foot box is ideal for kids. Frames can be made from almost any material *except treated wood*, which has toxic chemicals that might leach into the soil. 1 by 6 or 2 by 6 lumber is ideal, and comes in 8-foot lengths. Most lumber yards will cut it in half at little or no cost. Deck screws work best to fasten the boards together. Rotate or alternate corners to end up with a square inside.

**4 - PREPARING YOUR BOX.** If placing frames over grass you can dig out the grass or cover it with cardboard or landscape cloth to discourage grass and weeds from coming up through your new garden soil. If you have gophers use a bottom layer of chicken wire.

**5 - MIXING IT ALL UP.** Take care when mixing the 3 ingredients - they are dusty so don't mix outdoors if it's windy and wear one of those inexpensive painting dust mask if you're indoors like the garage. The expert way is to pour out all the ingredients onto a big sheet of 4 mill plastic. Then either use a rake and flat shovel to mix or better yet, use 2 people to pull the plastic over from 2 corners till the pile moves but doesn't spill out then do the same thing from 2 other corners, working your way around all 4 sides till mixed well. Next step, just carry the entire mixture out to the garden in the plastic. As you add

it to the box - wet it down well.

**6 - SOIL.** Fill frame with Mel's Mix, a mixture of 1/3 compost, 1/3 peat moss, and 1/3 coarse vermiculite (no dirt needed). A blended compost made from many ingredients provides all the nutrients the plants require (no chemical fertilizers needed). Peat moss and vermiculite help hold moisture and keep the soil loose. It's best to make your own compost from many ingredients but if you have to buy it, make sure it is truly compost. Some stores sell mulch or humus and other ground covers but call it compost. Most commercial compost is made from one or two ingredients so to be safe, don't buy all of one kind but one of each kind until you have enough for your garden. It's really best to make your own compost, then you know what goes in it. When buying vermiculite, be sure to get the coarse grade, and get the more economical 4 cubic foot size bags.

**7 - GRID.** On top of each frame place a permanent grid that divides the box into one foot squares. The grid is the unique feature that makes the whole system work so well. To show you why the grid is so important, do this little demonstration: Look at your 4 foot by 4 foot box with the grid on and imagine up to 16 different crops. What you see before you is a neat and attractive, well organized garden, that will be easy to manage. Now remove the grid. Could you organize and manage this space without dividing it up into squares? Besides, without the grid you will be tempted to plant in rows, which is a poor use of space. Grids can be made from nearly any material; wood, plastic strips, old venetian blinds, etc. Use screws or rivets to attach them where they cross. On a 4 foot by 4 foot frame, the grid divides the frame into 16 easy-to-manage spaces, for up to 16 different crops. Leave the grid in place all season. The grid can be cut long enough to fit across the top of the box or cut shorter to lay on the soil inside the box.

**8 - SELECT.** Depending on the mature size of the plant, grow 1, 4, 9, or 16 equally spaced plants per square foot. If the seed packet recommends plant spacing be 12 inches apart, plant one plant per square foot. If 6 inch spacing; 4 per square foot. If 4 inch spacing; 9 per square foot. If 3 inch spacing; 16 per square foot.

**9 - PLANT.** Plant one or two seeds in each spot by making a shallow hole with your finger. Cover, but do not pack the soil. Thinning is all but eliminated. Seeds are not wasted. Extra seeds can be stored cool and dry in your refrigerator. Don't over-plant. Plant only as much of any one crop as you will use. This 4 foot by 4 foot box will grow more than a conventional garden that is 8 foot by 10 foot.

**10 - WATER.** Water only as much as each plant needs. Water often, especially at first, and on very hot dry days, If possible, water by hand (uses a lot less water) with a cup from a sun-warmed bucket of water. As the plants get larger, spread the watering out so they develop deep roots.

**11 - HARVEST.** Harvest continually and when a crop in one square is gone, add some new compost and plant a new different crop in that square.



## Gardening Seeds

“And it came to pass that we had gathered together all manner of seeds of every kind, both of grain of every kind, and also of the seeds of fruit of every kind.” 1 Nephi 8:1

**Gardening Seeds should be a part of your home storage program.**

**Where can you buy them?** You can pick up seeds for sometimes 10 for \$1 this time of year. They can be found in drug stores, retail stores (target/walmart), home improvement stores, gardening stores and on the internet.

**Hybrid Seeds?** Most seeds you can buy locally are hybrids meaning that the seeds that are produced from these plants cannot be planted and reproduce. Because of events in the world, seeds may not always be readily available to grow next season’s crop. Plan ahead by storing lots of extra seeds or buying heirloom seeds.

**Heirloom Seeds:** Heirloom seeds are NOT hybrids, meaning you can harvest their seeds and save them and plant them next year. They usually come from varieties that have been around for many, many years. They are more expensive than hybrids BUT you will be able to depend on them to grow additional food for many years.

**Storing Seeds:** Seeds can be stored in an airtight container. By placing this in the freezer you can extend the storage life 5x (most seeds have at least a 2 year storage life) or in the refrigerator which extends their storage life twice as long.

**Google search engine for finding heirloom seeds.**

<http://www.google.com/coop/cse?cx=009338732721437528424%3Aad-kgp1hr6o>

## On Line Resources for Gardening Tips and Information

\*Gardening advice, a pest control, gardening articles, and free newsletters. The site also features a children’s gardening section, recipes, and garden research. [garden.org](http://garden.org)

\*Read what other gardeners are saying about common gardening topics in the garden forum, find answers to your gardening questions in the Q&A section, and learn from a list of frequently asked questions. [gardenweb.com](http://gardenweb.com)

\*Get a free e-book, gardening tips, advice, techniques, and FAQ’s to answer your gardening questions from Dr. Mittleider. [foodforeveryone.org](http://foodforeveryone.org)

\*Info on everything that is green or growing from Scotts. [gardeningadvice.com](http://gardeningadvice.com)

\*Find heirloom seeds, learn how to compost, pests and other organic gardening tips. [organicgardening.com](http://organicgardening.com)

\*Info on seeds, indoor, greenhouse and organic gardening. [gardenersnet.com](http://gardenersnet.com)

\*In depth information and hints on growing specific vegetables:

<http://www.gardenersnet.com/vegetable/squash.htm>

<http://gardening.about.com>

\*Herbs: <http://www.wvu.edu/~agexten/hortcult/herbs/ne208hrb.htm>

## Simple Backyard Compost

<http://www.compostguide.com/>

Video about composting: <http://video.about.com/gardening/compost-video.htm>

### **Materials:**

Composting structure (e.g., wire frame)

Dry ingredients (leaves, branches)

Garden dirt or mulch

Grass clippings

Landscape waste

Kitchen waste (vegetable matter only)

Gardener's rake

Pitchfork

### **Steps:**

1) Begin with some sort of composting structure. Elaborate, high-tech ones (**figure A**) are available from garden suppliers, but all you really need for basic composting is a simple structure like the wire frame shown in our demonstration (**figure B**). Simple wire frames are desirable in many situations because they are inexpensive and easily moved.

2) Once your structure is in place, begin adding the compost ingredients. Begin with a bottom layer of dry matter -- dry leaves, branches, etc. (**figure C**) -- that's about 4 inches deep. Spread the dry ingredients evenly to form a level layer. A narrow bed-rake (**figure D**) is useful for arranging and spreading your compost ingredients as you add them.

3) For the next layer, add some ordinary garden dirt (not potting soil) or leaf mulch from your yard (**figure E**). Spread the layer evenly. These bottom two layers will create the initial base for your compost pile.

4) Green material such as grass clippings (**figure F**) can go in next. It's fine if these are fresh clippings with some moisture still in them. Add a thick layer of green material and spread it level using the rake.

5) Once the green material has been added, leave the compost pile undisturbed for about a week. After a week, you can turn the ingredients using a pitchfork (**figure G**).

6) If you're using a wire frame, the turning step is simplified since the frame can be easily lifted aside. Simply move the frame over a couple of feet, then turn the ingredients as you shovel them back into the repositioned frame (**figure H**).

7) With the initial base-ingredients turned, you can begin adding other ingredients such as landscape waste -- garden and yard cuttings, etc. (**figure I**).

8) You can also begin adding kitchen waste (**figure J**). You can safely add fruit and vegetable matter, eggshells, coffee grounds, tea bags, etc.

**Important:** Avoid adding animal products (meat scraps, dairy products), animal waste or diseased plants to your compost pile. These can contaminate the desirable organic ingredients and attract unwanted pests.

9) If your mix of ingredients follows these guidelines, you should have rich, dark compost (**figure K**) in about two months. Adding aged compost as mulch in flower beds or around trees helps add natural nutrients into the soil.

## **Antelope Valley Gardening**

(tips from the "experts")

**1) If you don't like it then don't grow it.** Why bother putting time, effort and money into growing things your family won't even eat?

**2) The key to successful gardening and harvests is in the soil.** The methods outlined here use the perfect soil. If you are going plant in the ground you will want to add compost, vermiculite, etc. to bring your soil more in line with these soils.

**3) What Grows Well Here:**

**Summer Crops:** Tomatoes, Grapes, Potatoes, Onions, Green Beans, Squashes, Peppers, Cucumbers, Melons, Herbs, Fruit Trees (not Citrus), and Berries.

**When to Plant:** April-June (check your seed packages)

**Winter Crops:** Broccoli, Carrots, Lettuces, Cauliflower, Onions, Turnip, Cabbage, Celery, Radish, Artichokes, Brussel Sprouts and Peas.

**When to Plant:** Sept-Jan (check your seed packages)

**Advantage:** No bugs or weeds in Winter

**4) What Doesn't Grow in Antelope Valley:** Citrus, avocado,

**5) Watering:** Do not over or underwater- Train your plants. When you first plant your garden, especially when planting seeds you will need to keep the soil moist (not wet) and will need to water 2x a day. As the plants grow, skip a day, as they get bigger, skip another day and they get bigger skip another day. If you have trouble like I do gauging if your garden needs watering get a water gauge (garden stores) and measure before watering. You can water by hand, with a sprinkler, use soaker hoses or a drip system. If you want to get really fancy you can even have your watering system on a timer. Also water in the early morning so they have time soak it up before the heat of the day.

Consistent watering is another key to a bountiful harvest.

**6) Stagger and Rotate Crops:** One of the secrets of fewer bugs is to spread your plants around the garden. Also you will want to move your crops around each year because different plants pull different nutrients out of the soil, by rotating you will have a high yield. Hint:

DO NOT PLANT cucumbers next to any melons, they cross pollinate and your melons will taste like cucumbers.

DO NOT PLANT: broccoli, cauliflower, brussel sprouts or kale by each other

DO NOT PLANT seedless grapes next to seeded grapes for the same reason. You will have all seeded grapes.

**7) Pests:** Your best defense against pests is having really good soil which makes really healthy plants. By not using pesticides you will have organic harvests which are healthier for you and your family. If you do get pests you can: pick them off, make a spray with one quart of water to 10 drops GSE (Grapefruit Extract) and spray the plants, introduce natural predators (ladybugs eat aphids), find other natural remedies on the internet or use

pesticides. How you get rid of pests or if you do is totally up to you. You can also use moth balls to keep critters from eating your garden.

8) **Last day for frost here in the AV: April 17<sup>th</sup>.** (according to local farmers)

### Conclusion



Some may ask, "Why have gardens when we can buy produce inexpensively?" One of the important keys of home production and storage is the acquisition of skills. Sometimes we may be able to buy food inexpensively, but the skills and intuitive wisdom gained through gardening and other home production projects are worth more than the time and effort they require. In a sustained emergency, basic gardening know-how are invaluable. Some home production and storage goals you and your family may want to consider include: planting and caring for a garden; learning techniques of home canning, storing seeds; and having adequate tools.

"Catching the Vision of Self-Reliance," *Ensign*, May 1986

In D&C 59:18-19: "Yea, all things which come of the earth, in the season thereof, are made for the benefit and the use of man, both to please the eye and to gladden the heart; Yea, for food and for raiment, for taste and for smell, to strengthen the body and to enliven the soul."

**"I do not want to be a calamity howler. I don't know in detail what's going to happen in the future. I know what the prophets have predicted...We will see the day when we will live on what we produce."**

Marion G. Romney, April Conference 1975

The revelation *to produce and store food* may be as essential to our temporal welfare today as boarding the ark was to the people in the days of Noah. (President Ezra Taft Benson, October 1980)

I sincerely hope you will each find a way to incorporate gardening into your lives. As you can see gardening can be easy and there are gardens for all kinds of circumstances: gardens for apartment or those with an acre of land, gardens for young and old, gardens for those really busy schedules and for those who could spend all day in them. They should be beautiful and functional. The important thing is that you start now, before the real need arises to learn how to have a productive garden and that you have gardening seeds and supplies as part of your preparedness program.