

# Horticulture Diagnostic Laboratory



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## Growing Vegetables in Containers

Would you like to have a garden, but you can't because you live in the city where there is no room for one? Then start a mini-farm! If you have a roof-top, windowsill, patio, or just a doorstep, you can grow vegetables in containers and even harvest year round!

Anything that can grow in a garden can also be grown in a container. Just provide your plants with a few basic needs - a suitable container, a growing media, water, nutrients and light, and watch them sprout and grow! The few simple steps outlined here will show you how.

### Containers

Containers for your plants must:

- Be big enough to support your plants when they are fully grown.
- Hold soil.
- Have adequate drainage.

Anything and everything that fulfills these basic requirements can be used. Use your imagination! For example, among the containers that can be used are clay pots, plastic pots, garbage cans, wash baskets, bushel baskets, recycled styrofoam coolers, wooden crates (lined with plastic so that they will hold soil), barrels, tile flues, drain pipes, milk cartons, dish pans, tin cans, and cement blocks. You need not spend a lot of money on containers. Keep your eyes open for suitable candidates amidst the garbage put on the sidewalks. Ask at your local fish market for a discarded fish carton or ask at a grocery store for a fruit or vegetable crate. If you want something a little fancier, try building your own planting box out of wood (redwood and cedar are the most rot resistant).

Whatever kind of container you use, drainage is extremely important, and may mean the success or failure of your mini-farm. Be sure that there are adequate holes on slats, bricks or blocks so that excess water can be drain off freely.

As for size, most beginners underestimate the size of the container needed to support their fully grown plants. Here is a list of commonly available containers, their approximate capacity and the plants recommended for their size:

#### Small Containers

Container	Capacity	What Can Be Grown
Milk cartom	½ to 1 gallon	2 to 3 lettuce, spinach or mustard plants, or one pepper plant
Tin cans	½ to 1 gallon	could be grown in 1 gallon of mix. ½ to 1 gallon container will
8 inch flower pot	1 gallon	accommodate 16 to 30 radishes or green onions. A 2 gallon
10 inch flower pot	2 gallons	container is adequate for 1 dwarf tomato plant.
Plastic buckets and dish pans	1 to 2 gallon(s)	

#### Medium Containers

Container	Capacity	What Can Be Grown
Buckets and garbage cans	5 gallons	Everything that can be grown in a small container can also be
12 inch flower pots	3 ½ gallons	grown in a medium sized container, only in larger quantities.
14 inch flower pots	6 gallons	Also, carrots, beets and eggplant can be grown in containers
½ bushel	8 gallons	with at least a 3 gallon capacity.

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## Large Containers

Container	Capacity	What Can Be Grown
Garbage cans	10 to 20 gallons	Vegetables that could be grown in large containers include cabbage, brussel sprouts, cucumbers, squash, tomatoes, and corn (4 dwarf plants in a 10 gallon container).
Bushel baskets	16 gallons	
Tubs	10 gallons	

Many dwarf varieties have been developed for growing in containers. They tend to have a more compact habit and require less room to grow. Among the varieties that have been developed by seed companies are the following:

Vegetable	Varieties
Beets	Ruby Queen, Detroit Dark Red & Burpee Golden
Carrots	Tiny Sweet, Short n' Sweet, Nantes Half-long, Gold Pak
Cucumbers	Pot Luck, Patio Pick, cherokee, Challenger, Mincu
Sweet corn	Golden Midget, Midget Hybrid, White Midget
Eggplant	Morden Midget, Long Tom
Tomatoes	Gardener's Delight, Tiny Tim, Sparten Red, Small Fry, Hybrid Patio, Pixie, TamuSaladette, Tom Boy

More information on varieties is available from the *Selected List of Vegetable Varieties for Home Garden Use in New York State*. For more information visit our web site <http://ccesuffolk.org/assets/Horticulture-Leaflets/Selected-vegetable-varieties-2012.pdf> or contact our office.

## Soil

A light weight potting mix must be used in your containers. Soil dug up from the ground cannot be used in a container because it is too heavy. The particles are too small and therefore the soil gets too compacted in the container when it is watered. Soil must be porous in order to support plants, because the roots require both air and water, which fill the pore spaces. Circulation of both air and water through the soil is vital to healthy plants. Lightness of the mix is achieved by adding peat moss or inorganic heat-expanded materials such as-vermiculite and perlite.

You can purchase a commercial potting mix and make your own. A standard soil mix that will give excellent results is the peat-lite mix. If you plan on using large quantities of potting mix, it would be especially practical to make your own, since this would be much less expensive in the long run. The two main ingredients of the peat-lite mix are peat moss and vermiculite, which come in quantities of cubic yards and fractions of a cubic yard (a cubic yard equals approximately 24 bushels).

**The following are the ingredients you will need:**

### For 1 bushel of mix

½ bushel #2 size vermiculite  
½ bushel peat moss  
5 tablespoons ground limestone  
2 tablespoons super phosphate  
8 tablespoons 5-10-5 or 6-12-6 fertilizer

### For 2 quarts of mix

1 quart of #2 size vermiculite  
1 quart peat moss  
½ teaspoon ground limestone  
½ teaspoon 5-10-5 fertilizer

## Planting And Thinning

If your containers will be outside, check a growing chart or Cornell Cooperative Extension – Suffolk County for dates when different vegetables should be planted. Some vegetable such as lettuce, spinach, mustard, radishes, onions and the cole crops are cold tolerant, and can be planted very early in the year. Others, such as tomatoes, peppers, eggplant, corn and beans are warm weather crops and should only be planted when the weather is warm enough.

Some vegetables such as leaf vegetables can be grown inside year-round with artificial light. Fruiting vegetables on the other hand cannot be grown indoors in the dead of winter, because they will not receive enough light, even with supplemental lighting, to produce fruit.

Before planting, thoroughly water the soil mix in your container (which has already been provided with drainage holes). Sow the seeds at the depth indicated on the seed packet. Put the containers in a warm place out of direct sun, away from any source of heat. Most seeds like to germinate in a moist environment. Once they have sprouted, move them to a sunny spot.

Thinning is a job which is very hard for some of us to do. But it is vitally important. Overcrowding leads to malformed, spindly and small plants that yield little or nothing. Give your plants enough room to grow!

## Transplanting

Tomatoes, eggplants and peppers are best started in small pots and transplanted into their containers. Unless you have excellent conditions for growing transplants like a greenhouse has, it is advisable to purchase your transplants. It is very important to start with short, stocky plants that do not yet have blossoms. When transplanting be sure to keep the root balls intact and water thoroughly with a water soluble nutrient solution ("liquid fertilizer").

## Watering

Watering is probably the most important single need of your plants. If your plants are outdoors, then the sun and wind are constantly drying out your pots. If your plants are in porous containers such as clay pots, then there is additional evaporation from the sides, and watering must be done more often. When you water do so thoroughly so that the excess water runs out of the bottom of the container. Check your pots at least once a day and twice on hot, dry days. Feel the soil to see whether or not it is damp and check your plants for wilting. Excess watering can also be fatal especially if your soil is not porous and there is inadequate drainage.

## Fertilizing

The 3 numbers that always appear on a package of fertilizer refer to the proportions of nitrogen, phosphorus and potassium. These are the 3 major nutrients that plants need to grow.

Very simplistically, nitrogen promotes growth of foliage, phosphorus promotes growth of roots and ripening of the seed and potassium promotes fruit production.

If you use the peat-lite mix with the fertilizer added, then your plants will have enough nutrients for about 10 weeks. If plants are grown longer than this, then add a water-soluble fertilizer at the recommended rate. Do not add more than the recommended rate, since this may cause fertilizer burn and the death of your plants. If a little is good for your plants, *then a lot is not better.*

## Light

Last but not least, your mini-farm will need sunlight. It is vitally important to locate your mini-farm in a place where it will receive adequate sunlight.

Vegetables that do best in full sun all day and that need at least 6 hours of full sunlight per day are: tomatoes, peppers, green beans, eggplant, squashes, and cucumbers. The root vegetables such as beets, carrots, and radishes require less light, and leafy vegetables such as lettuce, spinach and swiss chard also require less light.

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