HS708

UNIVERSITY OF FLORIDA
IFAS EXTENSION

Minigardening (Growing Vegetables in Containers)[1]

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Vegetable gardens range in size from plant containers (mini-gardens) all the way to fields of an acre or more (maxigardens). What makes them all gardens rather than farms is that the produce is consumed by the grower, or his family and friends, rather than being marketed.

Minigardening is practical for those who do not have sufficient yard space for a larger garden. Even persons living in apartments and condominiums can grow at least a few vegetables by planting a minigarden. Many Florida 4H members grow radishes in containers as a school project.

Areas suitable are along fences and in fence corners, in and around flower beds, adjacent to walks and drives, near the foundation of the house, on patios, porches and balconies, and even on roof-tops. Such small-scale container culture can be both practical and ornamental if properly and imaginatively done. Even boat dwellers cruising Florida's waterways have been known to have a few container gardens at railside.

CONTAINERS AND CROPS BEST SUITED

Minigardening involves growing plants in containers which contain soil or any one of a variety of soil substitutes.

A wide assortment of containers might be used, ranging from hanging baskets and flower pots to tubs, bean hampers and refuse cans. Most any container is suitable as long as it is sufficiently durable and large enough to hold the fully-grown plant or plants. In this respect, gardeners are limited only by their imagination. An old bathtub might yield the prize tomatoes of the neighborhood, while an old plastic beach ball cut in half could become an excellent herb container. Table 1 provides examples of some commonly available containers.

RAISED BEDS

Many entire gardens are successfully grown throughout Florida on raised, constructed beds. They are particularly useful in Dade County where topsoil is preferred over the native rockland that is difficult to cultivate.

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When you plan the size of the beds, it is a good practice to keep their area in a simple to figure number of square feet. For example, beds 5 x 20 feet long total 100 square feet. This makes it easy to figure how much fertilizer or mulch you will need. In a smaller garden a bed that is 2 x 5 feet (for a total of 10 square feet) makes garden calculations simple.

An advantage to having permanent beds is that structures such as trellises and fences can be permanent as well. This allows you to build them for the long run out of durable materials such as pressure-treated pine, redwood, cypress, or cedar. Many gardeners are concerned that the chemicals in treated lumber might be hazardous to health. So far, there is no evidence to support such concern.

To improve drainage and garden neatness, beds can be raised with brick, rot-resistant lumber, landscape timbers, railroad ties, or concrete blocks. Railroad ties lend themselves especially well to stacking for beds as high as 1 to 3 feet. This reduces the distance you have to stoop. And when combined with wide, hard-surfaced paths, such high beds make gardening possible for those confined to a wheelchair.

Many gardeners shovel soil from around the raised bed. This extra soil combined with liberal amounts of organic amendments creates the raised bed. Soil depth should be six inches minimum, and twelve inches if possible.

USING THE CONTAINERS

Metal containers should be painted on the inside with asphalt paint, and clear glass containers on the outside with dark paint. Be sure to punch holes at interval 1" above bottom of container to allow for drainage of excess moisture. Baskets could be lined with plastic film to keep soil mix from spilling through cracks. Small slits should be made in the plastic to permit drainage.

Fill container with growth medium. Use a good garden soil, a prepared mixture, or a soil substitute such as sawdust or wood shavings. Keep in mind that the lighter materials enable easy movement of containers.

A first time minigardener probably should start with a commercial mix which is already mixed in the proper proportions of ingredients. But for those who wish to make up their own medium, Table 2 gives some tested mixtures. Several commercial mixes on the market are listed in Table 3 .

Some of the many combinations of aggregate materials which have been tried successfully with tomatoes are as follows:

- sand;
- 1 part sand to 1 part perlite or vermiculite;
- 1 part sand to 1 part rice hulls;
- 1 part sand to 1 part redwood bark;
- 1 part sand to 1 part pine bark; and
- 1 or 2 sands to 1 peat moss.

FERTILIZING

In general, the more porous growth media, such as sand and gravel, most closely approximate hydroponic culture. These tend to dry out fast and do not hold nutrients very long. Therefore, frequent plant feedings are necessary. Normally, the nutrient solution must be added and drained in the containers once or twice a day. During especially hot, dry weather, the aggregate may need more than two drenchings daily, sometimes as many as five.

Soil substitute mixes which contain ample organic materials, and which have fertilizer included in the mixing process, also will need additional fertilizer from time to time, but at much less frequent intervals than with porous sand or gravel culture. Once every week or two may be sufficient.

Either drench with soluble fertilizer or apply dry common garden fertilizer to the soil surface and water thoroughly into the root zone. Don't apply too much or fertilizer burn will result. Usually, 1 level teaspoon of dry fertilizer per square foot of soil surface is adequate at each feeding. Where ready-mixed soluble fertilizers are purchased, follow label directions for application.

A suggested solution is made with one ounce of 20-20-20 analysis water-soluble fertilizer in 5 to 6 gallons of water. For tomatoes, substitute calcium nitrate for the complete fertilizer every 2 weeks. Mix at the rate of one ounce per 3 gallons of water to insure adequate calcium and to prevent blossom-end rot. It may be used on other crops as well as tomatoes.

CAN CULTURE OF TOMATOES

This describes a method of can culture used successfully in a home garden in central Florida. The principles used were sound, and the results were outstanding. There is every reason to believe that the system will work just as well for you.

Containers:The gardener used 5-gallon square cooking oil cans. Anything similar, such as bushel baskets or plastic garbage cans may be used but not smaller containers.

Location:A four-foot wide strip of black polyethylene was laid out on the ground. It was long enough to accommodate about 24 cans. The cans were placed on the mulch in full sunlight. Containers may be placed wherever they might be most attractive. Since the containers have their own soil, they can be placed on hard surfaces such as concrete patios or wooden decks.

Soil:Sawdust was used as a soil-substitute. It is important to use well-rotted aged sawdust for best results. Although this gardener did not put anything else in the sawdust at the time it was placed in the cans, it is advisable to mix about a half cup of dolomite in each can to provide sufficient calcium.

Varieties:Plants were set directly into the sawdust. The varieties used were `Floradel,' `Walter,' `Big Boy,' and `Stakeless.' Best production was obtained from `Walter' and `Floradel' and least from `Stakeless.' `Big Boy' was only fair. Other varieties suggested for use are `Floramerica,' `Betterboy', and `Floradade.' Also, the small-fruiting varieties such as `Summer Cherry' do well in can culture. The latter will also permit growing into the warm summer months. Certain varieties were developed for container culture. The following are examples of Florida varieties for this purpose:

`Florida Basket' — A dwarf tomato for hanging baskets. Produces 1-inch fruit or 6-inch plant.

`Floragold Basket' — Grow 3 plants in a 12-inch hanging basket to produce lots of yellow cherry-size fruits.

`Tiny Tim' — Round, red 3/4 inch fruit on 18-inch vine.

`Micro-Tom' — an extremely dwarf type for 4-inch pots.

`Sweet 100' — Big plant, small fruit in clusters.

Fertilizer and Watering:A fertilizer solution was prepared and applied daily to each can. The fertilizer solution was mixed in a five gallon container. The gardener mixed two tablespoonsful of high analysis soluble fertilizer (Nutri-Sol) into five gallons of water. One gallon of this solution was poured into each tomato can once each day. At the end of each week, the fertilizer was omitted and, instead, each container of sawdust was given a thorough wetting with the garden hose. The purpose was to wash out accumulated salts from the fertilizer, since soluble salt buildup can cause root injury.

Alternatives to the methods of fertilizing used might be mixing a slow-release (osmocote) fertilizer into the sawdust before planting; or twice weekly light applications of dry common fertilizer such as 6-8-8 to the sawdust surface followed by watering in.

Staking and Supporting:All varieties should be supported so that they are made to grow in an upright position. Regular methods of supporting such as staking and string-trellising may be used.

Further care:The usual care and attention was provided as the plants grew. Some pruning was done to remove unwanted suckers. Pesticides, as needed, were sprayed onto the plants. Weeds were not a problem, since the black plastic kept the weeds away from the area around the cans, and the sawdust contained no weed seeds.

ADDITIONAL INFORMATION

General cultural information on varieties to plant, spacing, when to plant, etc. is available in the Florida Vegetable Gardening Guide . Also, see "Grow Your Own Vegetables Without Soil(Hydroponics)", and "Organic Vegetable Gardening" and "Growing Strawberries in Barrels."

Table 1.

Table 1. Examples of some commonly available containers

Containers	Diameter	Height	Volume	Vegetables suggested
Pot (plastic)	4 inches	3à inches	1 pint	Individual small-size plants (ex. parsley); clumps of plants (ex. chives); or transplants.
Pot (plastic)	6 inches	5à inches	3 pints	Herbs, compact varieties, clumps, or groups of leaf lettuce, green onions, summer radishes, and transplants.
Pot (plastic)	6 inches	6à inches	1 gallon	Same as 6-inch pot. Suitable also for hot peppers and strawberry.
Planter (plastic)	8 inches	8 inches	1à gallons	Same as 6-inch pot. Also suitable for cherry tomato, romaine, and like vegetables.
Planter (plastic)	10 inches	10 inches	3 gallons	Same as 8-inch planter. Also suitable for carrots, spinach, broccoli, bibb lettuce, and bell pepper.
Basket (à bu)	13 inches	9à inches	4 gallons	Ideal for tomato, eggplant, cucumber, pepper, squash, beans, peas, and vegetables already mentioned.
Bucket (plastic)	11 inches	12à inches	5 gallons	Same as basket.
Basket (1 bu)	17à inches	11à inches	8 gallons	All vegetables.
Barrels/drums	24-30 inches	36 inches	30-55 gallons	Excellent for strawberries and lettuce.
Boxes, pyramids		all sizes		All vegetables.

Table 2.

Table 2. Suggested synthetic soil mixtures.

Container Mix A	Container Mix B
1 bushel of vermiculite	1 bushel of peat moss
1 bushel of peat moss	1 bushel of peat, cow manure or aged compost
1â cups of dolomite	1â cups of dolomite

Table 2.

Table 2. Suggested synthetic soil mixtures.	
Container Mix A	Container Mix B
1 cup of 6-8-8 fertilizer with trace elements	1 cup of 6-8-8 fertilizer with trace elements
Bradenton formula for small tomatoes	
5:3:3:1 volume mix	
5 parts Florida Peat	10 bushels
3 parts Builder's sand	6 bushels
3 parts Hort. Grade Vermiculite	6 bushels
1 part Perlite Fertilizer	2 bushels
	1 bushel (approx.)
Total	25 bu (approx. 1 cu yd)
Fertilizer ingredients used in Bradenton formula:	
Dolomite	10 lbs.
Osmocote (18-6-12)	12 lbs.
Superphosphate	5 lbs.
Lime (Hydrated)	5 lbs.
Micronutrients (Perk)	5 lbs.

Table 3.

Table 3. Some Commercial Mixes - Synthetic Soils	
Pro-Mix BX	Peat moss, perlite, vermic, dolomite, NPK, P, Ca, FTE, wetting agent. Each 5.5 cu. ft. bale = 10 cu. ft. loosened
Pro-Mix A	Same, except no perlite
Pro-Mix C	Same, exept no perlite and NPK (has P)
Fertile Bag	Same, ready for bag culture (2 cu. ft.)

Table 3.

Table 3. Some Commercial Mixes - Synthetic Soils	
Jiffy-Mix	Peat, vermic, and NPK
Jiffy-Mix Plus	Same, except has Mag-amp (7-40-6)
Metro-Mix 200	Peat moss, perlite, vermic, granite sand, NPK, wetting agent, pH 5.6 - 6.5
Metro-Mix 300	Same, plus bark
Medium	Synthetic Soils
Redi-Earth	Peat moss, vermic, wetting afetn, macros and micros
Farard Growing	Peat moss, nutrient, vermic, perlite, Peat Mix and wetting agent, several formulations
Peat-Lite Mix	Same, no perlite, although some formulatins have it.
Super Soil	Called "First Step," developed by U Cal
Cornell Mix	No trade names (mix your own), although Redi-earth is based on it
Wetting Agents	Hydro-Wet, Aqua-Gro, Terra-Sorb, Surf-Side, Triton B 1956
Useful Measurements	
1 cu yd = 27 cu ft	1 pt = 2 cups
1 cu yd = 25 bu	1 cup = 8 oz
1 bu = 8 gal	1 oz = 2 tblsp
1 gal = 4 qt	1 tblsp = 3 tsp
1 qt = 2 pt	