HS36

UF UNIVERSITY of FLORIDA
IFAS Extension

Production of Miniature Vegetables in Florida[1]

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Miniature or baby vegetables are similar to normal size vegetables except they are considerably smaller. They are produced by harvesting the product before it has attained market size or by use of genetically dwarf varieties.

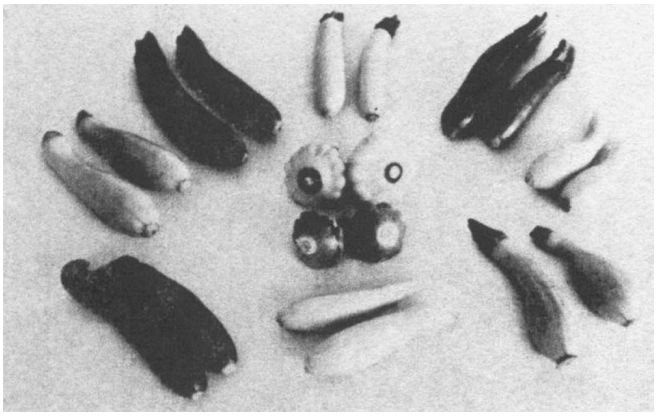

Figure 1. Miniature squash varieties: upper center and clockwise, 'Gold Rush', 'Zucchini Elite,' 'Supersette', 'Goldie', 'Multipik', 'Ambassador', 'Seneca Prolific', 'Classic'; upper center, 'Sunburst'; lower center, 'Starflower'. The squash in the center are about 1 inch in diameter. Surrounding squash range from 2-3 inches in length.

Miniature or baby vegetables are a relatively new class of specialty vegetables. Other specialty vegetables include those grown on small acreages, ethnic vegetables, gourmet vegetables and organically grown vegetables. Specialty vegetable production offers large growers the opportunity to diversify and small growers a chance to be competitive in the market place.

The market for miniature vegetables is relatively small compared to the market for most Florida vegetables. At the present time they are used in some of the better restaurants and are sold directly to consumers in gourmet and specialty shops. Thus far, chain store have not generally handled miniatures.

Quality miniature vegetables command a high price which is justified because of the high level of management and labor required in production and the relatively low yields obtained because of the small size of the harvested product. As with any new venture, growers should thoroughly understand the market demand and potential before planting.

Miniature Vegetables

Almost any vegetables can be grown and marketed as miniatures. However, certain crops have proven to be more acceptable than others. Vegetables readily adapted to miniature production are listed in Table 1.

1. This document is HS36, one of a series of the Horticultural Sciences Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Original publication date January 1989. Revised September 2006. Visit the EDIS Web Site at http://edis.ifas.ufl.edu.
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Other vegetables such as cabbage, cauliflower, cucumber, lettuce, muskmelon, onion, pepper, and watermelon may be grown as miniatures, however, established trade has been restricted mainly to those vegetables listed in Table 1.

Table 1. Vegetables adapted to production of miniatures classified according to usable plant part.

Fruit	Vegetative Storage Organ
French bean	Beet
Indian corn	Carrot
Sweet corn	Kohlrabi
Eggplant	Turnip
Pumpkin	
Squash	
Tomato	

Varieties

Not all varieties are suitable for production of miniatures, however, there are usually several choices that can be made. The listing of some potential varieties for production of miniature vegetables in Table 2 is representative of those that may be selected.

Culture of Miniature Vegetables

In general, the culture used for miniature vegetable production is similar to that used for general vegetable production. After suitable varieties have been selected, plans for size of plantings and succession plantings to ensure a continuous product supply should be made. Some points to consider when making planting plans are: (1) time from planting to harvest for some miniature vegetables, e.g. squash, beet, carrot, turnip, is shorter than that for production of full-size vegetables; (2) the root crops and kohlrabi are at optimum harvest size for only a short period, so plantings should not be larger than can be marketed while the crop is at optimum size; (3) frequent, successive plantings of these crops will be necessary; (4) because the size of the harvested product is smaller, some crops may be spaced closer together than ordinarily. In some cases, close spacing is useful for obtaining and maintaining miniature size.

Another point of difference between general vegetables and miniature vegetables is that pesticides must be chosen with care to insure that applications are made within the stated days before harvest. With a shorter period to harvest, some chemicals used for general production may not be suitable for miniature vegetable production.

Harvesting and Postharvest Handling

There are no U.S. grade standards for miniature vegetables, therefore, size and quality are dictated by market demand. The product should always be as uniform as possible, clean, free from damage, and free from decay. Likewise, there are no standard containers for miniature vegetables, however, because of their size and value, they are usually packed in relatively small baskets or cartons. Market demand may vary somewhat, but the general guidelines in Table 3 can be used as a starting point for new growers of miniature vegetables.

Specific storage conditions for miniature vegetables have not been researched. However, it is thought that generally these vegetables are more subject to postharvest deterioration than their normal-size counterparts. Accordingly, it is extremely important to cool and hold miniature vegetables under recommended temperature and relative humidity conditions as outlined in Table 3.

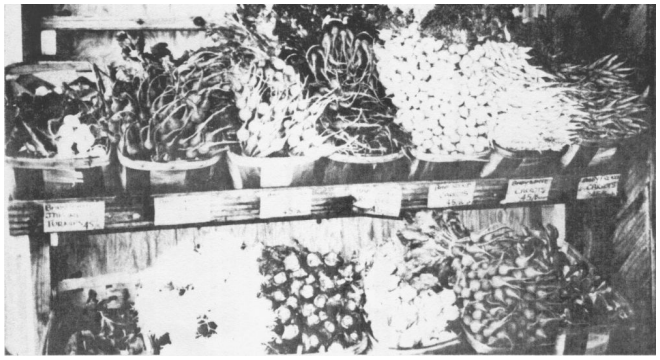

Figure 2. This display of miniature root and stem vegetables includes turnips, beets, golden beets, white carrots, round carrots, purple and green kohlrabi.

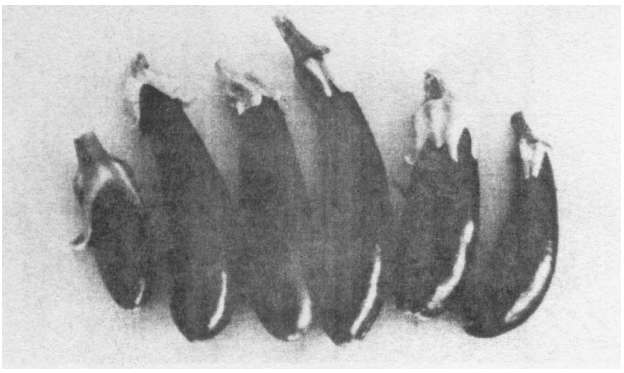

Figure 3. These miniature eggplants are called 'Little Fingers'. They range from 1 to 1/4-3 inches in length.

Table 2. Representative varieties for production of miniature vegetables and seed sources.

Vegetable	Variety	Description	Seed Source[z]
French bean	Aiguillon haricot vert	Dark green pods	5
	Frenchie	Dark green, round pods	7
	Major haricot	Yellow, round pods	5
	Triumph de Farcey	Dark green with purple streaks	4
Beet	Avenger	Medium red, globe shaped	3
	Burpee's Golden	Gold colored roots	2,5,7
	Chioggia	Concentric red and white rings	5
	Dwergina	Genetically dwarf type	4,5
	Little Ball	Round, dwarf type	2
	Little Mini Ball	Round, dwarf type	7
Carrot	Amca	French type	1,8
	Amstel	French type	6
	Baby Sweet Hybrid	F_1 hybrid, bright orange	7
	Little Finger	Cylindrical, small core	2
	Minicor	Amsterdam forcing type	4,5,7
	Wita Sweet #500	F_1 hybrid	1,8
Indian corn	Cutie Pops	Multicolored ears	7
	Indian Fingers	Multicolored ears	3,5
	Papoose	Multicolored ears	8
	Strawberry	Mahogany red, round ears	2,3
	Symphonie	Multicolored ears	7
Sweet corn	Baby Asian	Harvest at silking	5
	Golden Midget	Normal sweet corn maturity	6
Eggplant	Easter Egg	White, oval fruit purple, elongated fruit	8
	Little Fingers		3
Kohlrabi	Early Purple Vienna	Purple colored	2,7
	Grand Duke	F_1 hybrid, light green colored	1,2,3,6,7,8
Pumpkin	Jack-Be-Little	True pumpkin, 3-4 oz	3
	Munchkin	True pumpkin, 3-4 oz	7
	Sweetie Pie	True pumpkin, 3-4 oz	

Table 2. Representative varieties for production of miniature vegetables and seed sources.

Vegetable	Variety	Description	Seed Source[z]
Squash	Gourmet Globe	Round, green fruit	6,8
	Jersey Golden	Gold acorn type	1,2,4,5,6,8
	Multipik	F_1 hybrid, yellow straightneck type	3
	Sunburst	F_1 hybrid, yellow scallop type	1,2,3,4,5,6,8
	Supersette	F_1 hybrid, yellow crookneck type	3
	Zucchini Elite	F_1 hybrid, dark green	3
Turnip	Purple Top White Globe	Purple crown with white below	2,3,4,6,7,8
	Tokyo Cross	F_1 hybrid, white root	1,2,6,7,8
Tomato	Red Pear	Red, pear-shaped fruit	7
	Yellow Cherry	Yellow, round fruit	7
	Yellow Pear	Yellow, pear-shaped fruit	2,3,5,7

[z] 1. Abbot & Cobb, Inc., P.O. Box 307, Feasterville, PA 19074
2. W. Atlee Burpee Co., 300 Park Ave., Warminster, PA 18991
3. Harris Seed Co., 3670 Buffalo Rd., Rochester, Ny 14624
4. Johnny's Selected Seeds, 955 Benton Ave., Winslow, ME 04901
5. Le Marche Seeds International, P.O. box 190, Dixon, CA 95620
6. Geo. W. Park Co., Inc., Cokesbury Rd., Greeenwood, SC 29646
7. Stokes Seeds Inc., P.O. Box 548, Buffalo, NY 14240
8. Twilley Seed Co., Inc., 121 Gary Road, Hodges, SC 29653

Table 3. Harvesting and packing guidelines and storage conditions for miniature vegetables.

Vegetable	Harvesting and Packing Suggestions	Storage Conditions	
		Temperature (°F)	Relative Humidity (%)
French bean	Harvest when beans have attained full length, but before seed enlargement. Beans are usually place packed in one or two rows depending upon container configuration. Sold by weight.	44-48	95
Beet	Harvest when beets are 0.5 to 1 inch in diameter. Bunches of about six beets are packed with the tops in cartons containing 12 bunches.	32	98-100
Carrot	Harvest when carrots are 3 to 4 inches long. Bunches of about six roots are packed with the tops in cartons containing 12 bunches.	32	98-100
Indian corn	Ears are allowed to mature on the stalk. Additional drying may be necessary after harvest. Husks are pulled back. Packed singly or bunched.	Ambient	50
Sweet corn	Baby Asian is harvested at silking when ears are 2 to 3 inches long. Usually sold by count in the husk. Golden Midget is harvested at normal market maturity.	32	95-98
Eggplant	Harvested when fruit are 1.5 to 3 inches long. Packed in baskets or cartons	50-55	90-95

Table 3. Harvesting and packing guidelines and storage conditions for miniature vegetables.

Vegetable	Harvesting and Packing Suggestions	Storage Conditions	
		Temperature (°F)	Relative Humidity (%)
Kohlrabi	Harvested when stems are 1 to 1.5 inches in diameter. Crown leaves are retained. Packed in baskets or cartons.	32	98-100
Pumpkin	Harvested when fully mature. Packed in cartons or wirebound crates.	50-55	50-70
Squash	Harvested before or when blossom opens. Some markets prefer blossoms attached. Fruit with blossoms are very perishable. Packed in cartons.	44-50	95
Turnip	Harvested when roots are about 1 inch in diameter. One dozen bunches of about six roots are packed to the carton.	32	98-100
Tomato	Harvest when fruit are turning but not fully colored. Packed in pint containers, 12 to the flat.	45-50	90-95