

Home Gardening Series
Summer Squash

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Vegetables

Environment

Light – sunny
Soil – well-drained
Fertility – medium-rich
pH – 6.0 to 7.2
Temperature – warm
Moisture – average

Culture

Planting – transplant or direct seed
after danger of frost
Spacing – 2-4 feet x 48 inches
Hardiness – very tender annual
Fertilizer Needs – medium to heavy
feeder

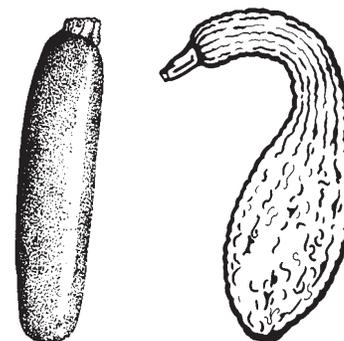
**Summer Squash –
*Cucurbita pepo***

Squash is gourd fruit belonging to the genus *Cucurbita*. Other edible members of this family include cucumbers, melons, pumpkins and gourds. Evidence suggests that they are definitely of American origin. Squash has never been found in a wild state and has been important in primitive agriculture for centuries.

The earliest cucurbits – probably originating in Central America – were considerably smaller. Squash and pumpkin cultivation dates back 9,000 years, judging by scattered remains of seeds and stems found in prehistoric caves in the Tamaulipas mountains of Mexico.

Native American gardens offered a number of varieties of squash. The northeastern tribes grew pumpkins,

yellow crooknecks, pattypan, Boston marrows (the oldest squash in America still in commercial production) and turban squash; southern tribes raised winter crooknecks, cushaws and green- and white-striped sweet potato squash.



The Zuni of the Southwest traditionally ate squash blossoms in soups. Flowers, especially those of zucchini and crookneck squashes, are both edible and flavorful.

Most popular among squashes today is the zucchini which became popular in American gardens in the 1950s. It has been re-introduced to this continent from Italy. Italians acquired the zucchini over 300 years ago and formed a liking for it. The name is a derivation of an Italian word meaning “sweetest.”

Summer squash (also known as vegetable or Italian marrow) is a tender, warm-season vegetable. It is grown throughout Arkansas during the frost-free season. Summer squash differs from winter squash because it

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Cultivars

Crop	Variety	Days to Maturity	Seed/ 100 Ft of Row	Sources (see "Sources" paragraph below)	Remarks
Summer Squash	Goldbar	50	2 oz	2, 6, 22, 32, 35, 36	Long, cylindrical fruit, bright yellow skin, excellent quality.
	Dixie	42	2 oz	6, 36	Early, yellow crookneck.
	Butterstick	50	2 oz	17, 33	Early, yellow, straight, uniform fruit, high yield.
	Ambassador Zucchini	51	2 oz	2, 5, 6, 22	Long, cylindrical fruit, bright green fruit, excellent quality, high yield.
	Seneca Zucchini	50	2 oz	1, 5, 6, 25, 32, 35, 36	Long cylindrical fruit, bright green fruit, excellent quality, high yield.
	Spineless Beauty	43		2, 6, 9, 17	Spineless, early, uniform harvest, long-bearing.
	Sunburst	52	2 oz	8, 10, 25, 28, 32, 33, 36	A very productive, excellent, scallop-type squash. All-American selection.
	Eight Ball	40	2 oz	2, 6, 17, 22, 25, 28, 36	Dark-green, round fruit, high yield, bush type. All-American selection 1999.
	Papaya Pear	45	2 oz	9, 12	2003 All-American selection. Abundant papaya-shaped fruit on bushy plants. Great flavor. Harvest at 3 1/2 inches.
	Sundance Hybrid	52	2 oz	2, 8, 9, 32, 35, 36	Bright yellow fruit with a full crookneck.

is harvested before the rind hardens and the fruit matures. It grows on bush-type plants that do not spread like the plants of winter squash and pumpkin. A few plants will produce abundant yields.

Summer squash grows on nonvining bushes. Many varieties have different fruit shapes and colors. The three main types include the yellow (straight neck or crooked neck), the white (saucer-shaped, scallop or pattypan) and the oblong (green, grey or gold zucchini). The main difference between summer and winter squash is summer squash is eaten when it is immature and the rind is tender.

Cultural Practices

Planting Time

Warm soil is necessary for germination of seed and proper growth of plants. Plant seed directly in the garden after the danger of frost has passed and the soil has warmed above 62 degrees F in the spring. This is generally after April 1 in southern Arkansas, April 10-15 in central Arkansas and April 21-30 in northern Arkansas and at higher elevations. With

ample soil moisture, summer squash thrives in warm summer weather. A second planting for fall harvest may be made in mid-July to mid-August.

Grow transplants in a greenhouse for early harvest. Plant seed in deep containers two to three weeks before the desired planting date. Transplant about three weeks later after danger of frost. Older plants that have hardened and stopped growing will not transplant well and should be discarded. Squash is a warm-season plant and does not do well until soil and air temperatures are above 62 degrees F.

Spacing and Depth of Planting

For single plant production, sow two to three seeds, 24 inches apart or three to four seeds in hills 48 inches apart. Cover 1 inch deep. When the plants are 2 to 3 inches high, thin to one vigorous plant or no more than two plants per hill.

Sources

For a list of sources referred to by number, request FSA6106, *Seed Sources: Vegetable and Herb*, for current address, telephone and web site.

Care

Any well-drained garden soil produces excellent yields of summer squash. Squash plants are shallow-rooted and require ample soil moisture at all stages of growth. For best yields, incorporate compost or well-rotted manure before planting. Fertilize the garden at the rate of 4 pounds per 100 linear feet of row with a complete fertilizer such as 10-20-10 or 13-13-13 before planting squash.

After harvesting for three or four weeks, side-dress with additional fertilizer; 2 pounds of a complete fertilizer per 100 feet of row is adequate. This is about 1 or 2 tablespoons of fertilizer per plant. Squash responds to mulching with soil-warming plastics in early spring or organic materials in summer.

Squash bears male and female flowers on the same plant. Male flowers are formed first, then the female flowers. Female flowers are characterized by an undeveloped fruit at the base. Pollination is not always necessary for most summer squash since it is harvested at bloom or shortly afterward. Pollen will be transferred from male flowers to female by bees. Use insecticides late in the afternoon or in the evening to prevent killing bees.

Harvesting

To get the best quality summer squash, harvest when small and tender. Pick most elongated varieties when less than 2 inches in diameter or 6 to 8 inches long. Harvest pattypan types when 3 to 4 inches in diameter. Do not allow summer squash to become large, hard and seedy. Remove oversized squash and discard to maintain the yield potential of the plants. Squash grows rapidly and is usually ready to pick within two to four days after flowering.

Although summer squash has both male and female flowers, only the female flowers produce fruit. Since the fruit is immature when harvested, it bruises easily. Handle with care and use immediately after picking. Some gardeners also pick the open blossoms before the fruit develops. These blossoms are a delicacy when dipped in batter and fried.

Common Problems

Insects

Spotted and striped cucumber beetles attack seedlings soon after emergence from the soil. In certain years, they may attack squash in large numbers and stunt or kill small plants. Overwintering beetles carry bacterial wilt disease and spread it to plants when they feed. Control cucumber beetles by applying a suggested insecticide.

Squash bugs can be a problem on older plants. They can cause considerable damage to foliage and may even strip the plant of leaves. These insects are easy to control when in the nymph stage. As they reach the adult stage, squash bugs are nearly impossible to control.

Squash vine borers are clear-winged moths that lay eggs near the base of squash vines. When the larvae enter a stem, little can be done. Chemical control is possible only if an insecticide is present when young larvae hatch from the egg and prior to entering the plant.

Watch for buildup of colonies of aphids on the underside of the leaves. Use a suggested insecticide if colonies appear.

Diseases

Do not handle, harvest or work in the leaves and vines when they are wet to avoid spreading diseases.

Powdery mildew is a fungus that attacks the foliage during cool, damp periods. It is commonly seen in the fall. The surface of the leaf takes on a dusty grey color. Use a suggested fungicide to control this disease.

Leaf spots such as anthracnose and septoria will quickly defoliate a plant. These diseases are caused by a fungus and are controlled by making foliar applications of a suggested fungicide.

Belly rot is a soilborne fungus disease that attacks the developing fruit. Use mulches to prevent fruit contact with the soil.

Blossom blight is a fungal disease that attacks flowers and young fruit. It appears during periods of rainy, humid weather and disappears when the weather dries.

Bacterial wilt spread by cucumber beetles is devastating. Plants are infected with bacterial wilt disease by the natural attack of cucumber beetles. The disease organism overwinters in the beetles from one year to the next. The beetles hibernate among the plant debris and weeds around the garden. Plants are usually infected with the disease-causing bacteria long before they show any symptoms. When the vines wilt and collapse, it is too late to prevent the disease.

A number of mosaic virus diseases of squash are spread by leafhoppers. These diseases include CMV (Cucumber Mosaic Virus), ZYMV (Zucchini Yellows Mosaic Virus), WMV2 (Watermelon Mosaic Virus race 2), and WMV1 (Papaya Ringspot Virus). Leaves will be mottled in appearance, and distorted or twisted growth is common. The symptoms on yellow fruit are the formation of green spots and warts on the fruit; on zucchini, yellow spots are formed with warts. Plants are stunted and fruit yield is severely reduced.

diseases – powdery mildew, blossom blight, bacterial wilt, complex virus

insects – cucumber beetle, squash vine borer, pickleworm, squash bug

cultural – blossom end rot (irregular moisture or calcium deficiency), flower dropping (may occur normally when female flowers form before male flowers or during periods of heavy fruit set)

Harvesting and Storage

days to maturity – 50 to 65

harvest – Harvest when immature, only about 6 to 8 inches long and 1 1/2 to 2 inches in diameter for elongated types, 3 to 4 inches in diameter for pattypan types and 4 to 7 inches long for yellow crooknecks. If the rind is too hard to be marked by the thumbnail, it is too old. Remove old fruit to allow new fruit to develop. Check plants daily once they begin to bear.

approximate yields (per 10 feet of row) – 20 to 80 pounds

amount to raise per person – 10 to 20 pounds

storage – cool (40 to 50 degrees F), moist (95 percent relative humidity) conditions; 5 to 14 days

preservation – usually in cool, moist storage, may be canned as pickles or relishes or frozen (quality may be poor on frozen squash)

Frequently Asked Questions

Q. Will summer squash varieties cross-pollinate with each other or with pumpkins in the garden?

A. Yes. Any squash or pumpkin within the same species will cross-pollinate, but cross-pollination will not affect this year's crop.

Q. Can I transplant squash?

A. Yes. Squash can be transplanted when the plants are young (15 to 20 days old) and have been started in containers. Large vine crops do not transplant well. Many gardeners place two seeds in a 3- to 4-inch deep pot in late March and early April to start a few acorn or butternut squash plants for summer use.

Q. I have vine borers in my squash. Can I control them with insecticide?

A. No. Vine borers cannot be controlled effectively with insecticides once they have infested the plants. Dispose of the infested plants to reduce potential damage in following seasons.

Q. Each year my squash plants bloom profusely but seldom produce any squash. What is wrong?

A. Squash plants produce male and female flowers. For fruit to set, pollen must be transferred from the male to the female flower by pollinating insects, mostly bees. When treating the garden for insects and diseases, spray or dust during the late afternoon to avoid killing bees. Nematode infestations can also cause this problem, so check roots for galls.

Q. Most of the time my yellow summer squash is tough or has seed in the middle. What is wrong?

A. Squash matures rapidly, requiring only five to seven days from flowering to maturity in hot weather. Harvest every other day in hot weather. Good yellow summer squash should be 1 1/2 to 2 inches in diameter at the base and pale yellow in color. If overripe fruit is not removed, the plant will stop yielding.

Q. Can seeds be saved from this year's squash crop for planting in next year's garden?

A. Yes, but this is not a recommended practice. Squash has male and female blooms and needs bees for pollination. Seeds saved from this year's crop probably will not breed true when planted next year. This is especially true if more than one type of squash variety or a hybrid squash, such as Dixie, is grown.

Q. Each year my squash plants wilt and die about the time they start producing. Some have a yellowish or greenish sawdust-like material all over the vines. What could possibly be wrong?

A. Your problem is probably squash vine borer, and if it is, the white, grub-like larvae can be found within the stem of the plant by cutting it open. The larvae hatch from eggs laid by bright colored, wasp-like moth on the foliage or stems. The eggs hatch and the larvae travel down the plant to the stem and literally "core it out." To prevent this problem, begin control measures about the time the plants start to bloom by applying an insecticide to the base of the plant. Once grubs are inside the stem, it is almost impossible to control. During the fall growing season, begin treatment shortly after plant emergence.

Q. My squash blooms and sets young fruit, yet it quickly becomes covered with a black, whiskery fungal growth.

A. This is *Chaonophora* fruit rot or Blossom blight, a soilborne disease. It rots young fruits and is damaging to them during extended wet periods. It can be controlled with a combination of treatments which reduce the humidity around the plant, such as using raised beds and open foliage. This allows air movement to dry the soil and the foliage. Avoid planting squash on heavy, poorly drained soils, and apply fungicides during wet periods.

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