

## Home Gardening Series

# Winter 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** – direct seed into warm soil  
**Spacing** – 2-4 feet x 48 inches  
(2-3 plants per hill)  
**Hardiness** – warm, frost sensitive  
**Fertilizer** – medium

### Winter Squash – *Cucurbita species*

The squash family is native to the New World. It is possible that squash was cultivated prior to the development of corn. For more than 6,000 years, squash and its relatives have been grown in the New World. Squash was taken to Europe by Spanish explorers and was being grown there in the 16th century.

The word “squash” comes from a Massachusetts Indian word. Winter squash belongs to four different species of *Cucurbita*. *Cucurbita pepo* includes acorn and spaghetti squash. *Cucurbita maxima* includes hubbard, banana, buttercup, golden nugget and marblehead. *C. moschata* has the types butternut, ponca and waltham. All three of these species have members that we call pumpkins from Connecticut Field to Big Max and Golden Cushaw. Spaghetti squash (also known as vegetable spaghetti) is related to pumpkin and resembles a small (8 to 10 inches long), yellowish

squash. It may be planted and cared for in much the same manner as winter squash.



### 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. Squash is a warm-season plant and does not do well until soil and air temperatures are above 62 degrees F.

#### Soil Preparation

Squash grows best in a loamy, well-drained soil. Adjust soil pH as indicated in a soil test. Soil should have pH 6.0 to 7.5. If the soil test recommends raising the soil pH, apply agricultural limestone two to four months prior to planting the garden.

#### 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.

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## Cultivars

Crop	Cultivar	Days to Maturity	Seed Per 100 Feet of Row	Remarks
Winter Squash	Early Butternut	90	2 ounces	All-America Selections® winner. Buff cylindrical fruit with bulbous base and orange flesh.
	Honey Bear	60	2 ounces	All-America Selections® winner. Compact, very early acorn type, colors up early.
	Tay Belle PM	68	2 ounces	Tay Belle with moderate powdery mildew resistance.
	Table King	75	2 ounces	Compact, very early acorn type with orange flesh, excellent quality, stores well.
	Cream of the Crop	75	2 ounces	All-America Selections® winner. White acorn type on bush plant, stores well.
	Golden Delicious	100	2 ounces	Top shaped, deep orange fruit, bright orange flesh, excellent quality, stores well.
	Tivoli	100	2 ounces	All-America Selections® winner. Spaghetti type, for small area, bush-vine type.
	Sweet Mama	78	2 ounces	Delica type.
	Early Butternut Hybrid	85	2 ounces	Sweet, nutty, tan fruits are earlier to mature on compact plants. Stores well.
	Bush Pink Banana	90	2 ounces	12-16 pound banana squash with smooth, sweet, orange flesh on compact bushes. Great storage.
	Delicata	97	2 ounces	Very sweet-fleshed pepo, cream-colored skin with dark green stripes. Semi-bush.

## Care

Any well-drained garden soil produces excellent yields of 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 by broadcasting 2 pounds of 10-10-10 fertilizer per 100 square feet of garden and incorporate into the soil. If transplants are used, apply a transplant fertilizer starter at the time of planting. Mix one tablespoon of a soluble fertilizer high in phosphorus (i.e., 10-20-10) into a gallon of water, and apply one cup of solution per plant.

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 always necessary for winter squash. Pollen will be transferred from male flowers to female flowers by bees. Use insecticides late in the afternoon or in the evening to prevent killing bees.

## Harvesting

Although winter squash has both male and female flowers, only the female flowers produce fruit. Some gardeners also pick the open blossoms before the fruit develops. These blossoms are a delicacy when dipped in batter and fried.

Spaghetti squash is ready to harvest when the outside of the rind has turned a light tan to golden yellow. The surface will then be difficult to pierce with a thumbnail, and the fruit will weigh from 2 to 5 pounds. Cut the stem 1 to 2 inches from the fruit. Harvest all mature fruits before a hard frost and store in a dry location at temperatures between 55 and 60 degrees F. Fruits stored under these conditions will keep for several months.

## 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 prior to entering the plant. Butternut squash is resistant to squash vine borers.

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 gray 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 fungal 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. Allowing enough space around the plants for good air circulation will limit this disease.

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 PRSV (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 green fruit, yellow spots and warts are formed on the fruit. Plants are stunted and fruit yield is severely reduced. Plant virus-resistant cultivars when possible.

**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 mature only.

**approximate yields** (per 10 feet of row) – 20 to 30 pounds

**amount to raise per person** – 10 to 20 pounds

**storage** – cool (50+ degrees F), dry conditions; 2 to 6 months

**preservation** – usually in storage, may be canned or frozen

## Frequently Asked Questions

**Q. Will squash varieties cross-pollinate with one another 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. Does squash make as good a pie as pumpkins?**

A. Yes. The fruit used for canned pumpkin pie actually looks like a large squash.

**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. None of the vine crops transplant well if the plants are very large. 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. Once plants are infested, vine borers cannot be controlled effectively with insecticides. You can reduce potential damage the following season by disposing of infested plants. Protect plants with an insecticide before vine borers enter the vine.

**Q. Each year my squash blooms profusely but seldom produces any squash to eat. 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. Is Turk's Turban an edible squash?**

A. Yes, but it is more often grown for ornamental value than for cooking purposes.

**Q. Can seed 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 you are growing more than one type of squash or a hybrid squash.

**Q. My squash leaves are covered with a white, powdery substance. The plants die rapidly.**

A. This is powdery mildew, a fungal disease that attacks squash and kills the plants. Some varieties tolerate this disease better than others. Powdery mildew is more of a problem in the fall than in the spring. The most effective fungicide control is benomyl or Benlate. Mildew occurs most often on old foliage of declining plants. Succession plantings of squash will provide vigorous, productive plants and allow removal of older, more susceptible plants.

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

A. This is *Chaonephora* fruit rot, a soilborne disease that rots the young fruit and is particularly damaging during extended wet periods. It can be controlled with a combination of treatments that reduce relative humidity – using raised beds and opening 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.

**Q. My fruit, as it begins to develop, is covered with a white fungus.**

A. This is *Pythium*, commonly called a water mold. Control by growing the plant on raised beds, planting in a well-drained area and improving air circulation around the plants. Some varieties produce their fruits in the upper part of the plant, so the fruits do not come in contact with the wet soil.

**Q. Each year my yellow squash plants do a peculiar thing. Toward early to midsummer the plants, which once produced yellow fruit, start producing green or often yellow and green fruit. This is generally**

**accompanied by a twisting or mottling of the leaves. What could possibly be causing this problem?**

A. Your plants have been affected by a virus disease, most often squash mosaic virus or cucumber mosaic virus. This virus is transmitted to your plants by insects which have been feeding on other virus-infected squash plants or perhaps some wild plant. Once the plant gets this disease, nothing can be done. Preventive measures include insect control and planting varieties which will mature early. This disease is more severe on late-planted squash or summer-planted squash. The green squash (which should be yellow) is still good to eat.

**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 a 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 Sevin (carbaryl) to the base of the plant. Once the grubs are inside the stem, it is almost impossible to control. During the fall growing season, begin treatment shortly after plant emergence.

**Q. How do I keep squash bugs from literally destroying my plants?**

A. Squash bugs are very difficult to control especially when the insects have reached a mature stage. For satisfactory control, apply insecticides early in season while the insects are small. Removing and destroying egg masses on the bottom of leaves aids in control.

**Q. Will summer squash cross with winter squash?**

A. Summer squash varieties will cross with one another, with acorn squash and with jack-o-lantern pumpkins and some pumpkins. Cross-pollination will not be evident in the current crop, and the seed should not be sown the following year. Summer squash will not cross with melons and cucumbers.