Squash in Your Garden

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Squash belong to the family Cucurbitaceae, which includes gourds, melons, cucumbers and pumpkins.

SQUASH TYPES

Squash are broken into two groups: summer and winter. These categories are explained more fully below.

Summer

Summer squash is picked and eaten as immature fruit during the summer as its name suggests. Types of summer squash include yellow, straight or crookneck squash, zucchini squash and white, saucer-shaped scallop or patty pan squash.

Winter

The name "winter" squash can be a bit misleading. This squash can be eaten in the summer, fall, or winter depending on how you wish to use it.

In summer, winter squash can be harvested small and eaten like summer squash. More commonly, winter squash is harvested and eaten in the fall, or "cured" and stored for use in the winter. Storage times vary depending on the variety, See the table at the end of this guide for more information.

Familiar winter squash varieties found in the supermarket include butternut, acorn, banana, spaghetti and Hubbard squash.

SQUASH PLANTS & SEEDS

Summer and winter squash are normally planted from seed, and many varieties are available at local nurseries and garden centers. Catalogs can also be a good source for finding seeds.

Some varieties of summer squash are available as small plants at local nurseries and gardening centers. Commonly found types include crookneck and zucchini squash.

Seeds and plants for squash should be planted after the possibility of frost has passed. In Stanislaus County, this is usually after March 21st (10% chance of frost after this date).

POLLINATION MYTH

Often gardeners worry that planting squash, melons, cucumbers and pumpkins in their garden will result in undesirable fruit due to cross-pollination. Cross-pollination is not something most gardeners need to worry about, as it affects only the seeds and not the crop. Gardeners who save seeds to plant the following year should use caution when planting certain species in the cucurbit family. The link at the bottom of the page from the University of Georgia has more detailed information and an excellent illustration on which crops will cross-pollinate.

BUSH VS VINE

When purchasing seeds, the packet will note whether the variety is "bush" or "vine." Bush types are ideal for gardeners with limited space, as they only need 2-4 feet between them. If the packet does not use the word "bush", assume the plant is a vine and needs at least 8 feet of space. Vines can also be grown on a strong trellis, with the squash hanging down.

PLANTING SQUASH

Squash are generally grown on mounds surrounded by an irrigation furrow. Mounds should be flat on top so water flowing through irrigation furrows can be absorbed. See illustration at the bottom of the next page. Plant 2-3 seeds per mound 1 inch deep. While seeds are sprouting and growing, keep soil moist. Once seedlings emerge and become healthy plants, thin to one plant per mound.

Deep water squash plants,

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soaking the root zone to at least 4 feet. Between watering, allow soil to dry slightly, as squash roots need oxygen as well as water to thrive.

When Central Valley temperatures reach 100°F , plants may wilt-even if watered adequately. This is a temporary condition and plants should revive that night or by the next morning. If plants do not revive, this means not enough water is soaking into the root zone.

Sprinkler irrigation is not recommended when growing squash, as it won't provide deep water for the plants and may even encourage some diseases.

Squash prefer to grow in soil rich in organic matter, so add plenty of compost, composted manure or humus before planting. If fertilizer is needed, purchase a vegetable fertilizer with a nutrient analysis of 10-10-5 or 12-12-12, or similar numbers.

FRUIT SET

Squash and other cucurbits are monoecious, meaning they have both male and female flowers on the same plant. Pollen is transferred between male and female flowers by honeybees, although other flying insects do play a small part.

Male flowers can be recognized by their long, slender stem, while female flowers have a short stem and a small miniature fruit, or ovary, at the base of the flower.

The first few flowers on your squash plant may drop off, which is normal. This is because male flowers begin to bloom before female flowers. Fruit set will occur later when both male and female flowers are open at the same time.

After fruit set, some small fruits may also drop off. This is a part of the natural thinning process done by the plant to ensure surviving fruits reach full size.

If fruits continually drop and never set fruit, the plant may be over-watered or over-fertilized. If you are watering correctly and not over-applying fertilizer, the problem might be due to an insufficient number of bees in your area.

BEES & POLLINATION

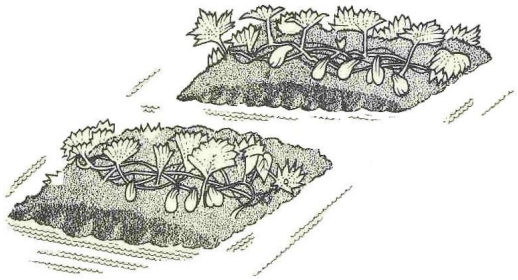
If you have planted squash without success in the past, it may be due to an insufficient number of honeybees in your neighborhood.

Hand pollination can be done using a small paintbrush to transfer pollen from the male flower to the female flower. Or, the male flower may be picked, it's leaves removed and the pollen bearing structure (anthers) can be rolled onto the structure (stigma) in the middle of the female flower. This is a labor-intensive and time consuming process.

PESTS

Common insect pests of squash include the cucumber beetle as well as the squash bug.

Cucumber beetles resemble lady beetles but are shiny and greenish-yellow. Their larvae feed exclusively on roots and usually don't cause substantial damage to the plant. Cucumber beetle adults, however, are difficult to control. Place a protective covering over young seedlings and plants until they are old enough to withstand damage. Squash bugs are 5/8" long with brownish black bodies. Abdomens may be orange or orange-striped. When crushed, this insect has a disagreeable odor. Adults are very difficult to kill. Pick bugs off or hold a bucket of soapy hot water and knock bugs into it while walking



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Cucumber beetle *Squash bug*

through your garden.

To prevent insects from living in your garden during winter and reappearing the following year, destroy all vegetation by tilling it into the soil or by composting.

DISEASES
All Cucurbits are susceptible to powdery mildew, a fungus with a fluffy, whitish cast. To control it, avoid the use of overhead sprinklers. In some cases, fungicides may be needed. Consult the UC Cooperative Extension office or a local qualified nursery professional for more information.

ENVIRONMENTAL DISORDERS
If fruit and flowers continually drop and fruit doesn't set, the problem may be related to insufficient pollination. Follow directions given under the "Fruit Set" section of this guide.

If fruit sets on the vine but begins to show small, light brown spots on the blossom end of the fruit that turn leathery, the problem may be "blossom end rot." This disorder is common in sandy soils with low organic matter. Be sure the crop is well watered, but also allow the soil to dry out slightly between watering. In some cases, the crop will benefit from an application of calcium fertilizer.

For more information about pests, diseases and environmental disorders of squash, consult the link below or visit the UC Cooperative Extension Office.

HARVEST
Harvest summer squash when small for best flavor. Use a knife to cut fruit from the vine, leaving a small stem on the squash. Gloves are helpful when harvesting, as plants and fruits are prickly. Several varieties of zucchini guarantee a "painless harvest." Two such varieties are 'Spineless Beauty' and 'Garden Spineless.'

Winter squash are ready to harvest when the rind hardens and the skin takes on a dull cast. Check the rind with a fingernail; if the skin can't be dented, the squash is ready. If possible, allow squash to stay on the vine until the vine begins to die.

When harvesting winter squash, use a knife and leave a 2 inch stem on the squash to help it last longer. Eat squash that week, or "cure" for later use. To do this, place the squash in a dark place for 10 days at 80-85°F. Then, store in a dark, dry place at 50-60°F for several months. Ensure squash chosen to keep are free from damage or they will rot and cause the rest of your squash harvest to rot.

Winter squash have various keeping times; see the table at the end of this guide for more information.

SQUASH BLOSSOMS
In some cultures it is customary to consume squash blossoms. They are said to have a delicate, zucchini-like flavor. Pumpkin and zucchini blossoms are generally used. Winter squash blossoms are too bitter to be eaten. If you are worried about not getting enough squash, pick only male blossoms as they do not set fruit.

Squash blossoms can be grilled, stuffed, sautéed, fried or put into soups. Pick blossoms and use them in the same day.

HEALTH BENEFITS
Summer and winter squash are full of fiber, beta carotene, vitamin 'C', niacin, potassium, manganese, magnesium, calcium and iron.

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Summer Squash	Days to Maturity	Comments
Crook Neck	50-53	Yellow-colored rind. Harvest when fruits are small (4-6" long) for best flavor.
Cucuzzi	55-60	Use when 1" in diameter and 6" long. Seeds can be difficult to start, ensure proper moisture is maintained. Can be kept on the vine and dried for use as a gourd. (not a true summer squash).
Patty Pan/Scallop	45-52	Pick when 3" across. Has a thin skin and mild squash flavor.
Straightneck	48-50	Yellow colored rind. Harvest when small for best flavor.
Zucchini	48-50	Harvest when small for adding to dishes, a little larger for stuffing. Some types are round and ideal for stuffing, such as 'Roly Poly' or 'Eight Ball'.
Winter Squash		
Acorn	75-100	Most have golden-yellow to orange flesh that is sweet flavored. Easy to use as a single serving vegetable when stuffed. Storage time: 5-8 weeks, do not "cure".
Banana	100-120	Ivory to pink, the flesh is finely textured and sweet. Can weigh up to 10 pounds. Storage time: 5-6 months.
Buttercup	95-105	Turban-shaped with yellow flesh. Sweeter than most varieties of squash and is often used as a substitute for sweet potatoes. Gets sweeter after a few weeks of storage. Storage time: 2-3 months.
Butternut	75-120	Days to maturity depends upon variety. Most have deep orange flesh with a nutty flavor. Can be somewhat watery. Some varieties are used to make pie. Storage time: 2-3 months.
Delicata	75-85	This squash can be eaten rind and all. It has a creamy pulp that is similar in taste to sweet potatoes. Storage time: 2-3 months.

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Winter Squash	Days to Maturity	Comments
Hubbard	100-105	Can weigh up to 20 pounds. Extremely hard rind means it can be stored for a long time. Has deep orange flesh that is very sweet. Makes excellent pumpkin pie. Storage time: 5-6 months.
Kabocha	85-100	Also known as the "Japanese Pumpkin". Has a rich, sweet flavor. The flesh is dry and flaky and gets sweeter after a few weeks of storage. Storage time: 2-3 months.
Spaghetti	80-100	Yellow to cream colored flesh comes out in strands when baked. Flesh is mild with a nut-like flavor. Storage time: 2-3 months.
Turban	90-100	Colors vary from bright orange to green or white. Golden yellow flesh tastes somewhat like hazel-nuts. A popular squash for use in decorations. Storage time: 2-3 months.

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ILLUSTRATIONS

Page 2 illustration taken and modified from: Hall, H., Wada, S. & Voss, R.E. (1975). *Vegetable Gardening: Growing Squash and Pumpkins.* University of California: Davis, CA.

Page 3 illustrations retrieved from North Carolina Cooperative Extension Service at http://www.ces.ncsu.edu/depts/ent/notes/Vegetables/veg025e/veg025e.htm. AND Ohio State University Extension Fact Sheet at http://ohioline.osu.edu/hyg-fact/2000/2141.html on May 25, 2007.

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