



Growing Winter Squash in West Virginia

Lewis W. Jett, WVU Extension Specialist – Commercial Horticulture

Jodi Richmond, WVU Extension Agent – Roane County

Winter squashes are a great choice for West Virginia gardens, as they are easy to grow and produce many fruits. Members of the Cucurbita genus, winter squashes are summer annuals. They should be allowed to ripen and harden on the vine, so they can be stored for use long into the fall and winter. Fruits vary in shape, size and color, with those having darker flesh generally being more nutritious. Popular types include butternut, acorn buttercup, kabocha, hubbard and spaghetti squash, as well as pie pumpkins.

Nutrition

Winter squashes are an excellent source of vitamins A (beta carotene) and C, as indicated by their rich orange and yellow flesh colors. Squash also contain a moderate amount of potassium. The seeds are edible and can be roasted like pumpkin seeds. According to United States Department of Agriculture nutrition facts, $\frac{1}{2}$ cup of cubed, cooked butternut squash has 50 calories, 1 gram of protein, 40% of your daily vitamin C requirement and 260% of your daily vitamin A requirement.

Cooking

Winter squash can be baked, roasted or microwaved. Many varieties can be peeled and cubed to be mashed or puréed, which can be used to make nutritious homemade baby food. Spaghetti squash is unique in that, when roasted the cooked flesh can be scooped out – yielding vermicelli-like strings that can be tossed with olive oil and herbs or pasta sauce. Mashed or puréed squash will keep up to a year if stored in an airtight freezer-safe container.



Production

Most squash varieties make long vines, so mounds of four to five seeds should be planted approximately 4 to 6 feet apart. There are a few varieties that can be grown in a container or on a trellis, but their fruits are generally smaller and should be supported. There are some bush varieties, such as acorn and delicata types, that are suitable for small spaces. Seeds will sprout quickly, usually in about a week.

If using transplants, ensure they have a well-developed root system and are healthy. Purchasing transplants will allow you to buy a few plants of several varieties, while purchasing seeds allows for more plants at a lower cost. Squash can be planted on plastic mulch, if preferred, but black plastic should be avoided in hotter climates. Most winter squash should be planted from late May through mid-June in West Virginia.

Soils:

Squash varieties require warm soil beds, so plant after the last frost date for your area in an area that gets full sun. Work the soil, adding compost and fertilizer based upon soil test recommendations. If no soil test has been completed, add 2 tablespoons of 10-10-10 fertilizer



per mound at planting. Additional fertilizer can be side-dressed once plants flower and begin to make fruit.

Watering:

Water each plant or seed mound when planting, and water daily for the first few weeks to ensure establishment. Once established, water as needed based on soil moisture. Avoid watering the top of the plant and leaves, as this can increase the chance of disease. Soaker hoses or drip irrigation distribute water evenly and efficiently. Plants must have enough water to develop and set fruits, but take care to not overwater.

Pollination:

Squash produces both male and female flowers on each plant. Pollen must be carried from male flowers to females, usually by insects, for pollination to occur. Female flowers have a shorter stemmed flower with a swelling behind it where the ovary is present. A squash may produce male flowers a week or so before females, and they may start to fall off, which is normal. If female flowers aren't pollinated, however, they also will fall off. Pollination may not occur if the weather has been exceptionally rainy or if something has prevented it – such as pesticides or not enough pollinators in the area. Gardeners can pollinate female flowers by collecting pollen from the male flower with a cotton swab and placing it on the stigma in the female flower.



Squash Type	Varieties Selected for West Virginia
Acorn	Table Ace (semi-bush, stores well); Table Queen (vining, dark rind); Taybelle (semi-bush, powdery mildew resistant); Table Gold (bright yellow inside); White Ace (white exterior); Mardi Gras (striped exterior)
Buttercup	Bon Bon (4 to 5 pounds, sweet, deep orange flesh); Sunshine (3 to 4 pounds, orange flesh)
Butternut	Waltham (4 to 5 pounds); Metro (2½ to 3½ pounds); Honeynut (mini variety ½ to 1 pound); Honeybaby (hybrid mini that can be grown on a trellis); Early Butternut (3-pound fruit with compact growth and red orange flesh)

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Spaghetti	Trivoli (short-vined with larger fruit about 4 pounds); Small Wonder (early-maturing hybrid with 1-pound fruits); Angel Hair F1 (1½ to 2 pounds, high yielding); Pinnacle (3 pounds, semi-bush suitable for closer planting)
Delicata	Bush Delicata (can be grown in small spaces or containers, yellow flesh, cream and green striped rind, 1½- to 2-pound fruits)
Pie Pumpkin	Mystic Plus (classic small pumpkins 6 to 8 inches across, weighing 7 to 8 pounds); Hybrid Pam (flat-round fruit about 7 inches across and 5 inches tall, weighing 4 to 5 pounds)

Harvest and Storage

Many winter squashes have a dull appearance when mature. Leave about 2 inches of stem on the fruit and harvest fruit without any soft spots or discoloration. After harvest, place them in a room where the temperature is between 70 and 75 F for about 20 days. This is called “curing” and increases the sugar content of most squashes. Acorn and butternut squashes do not need to be cured before storage. After curing, the squash can be placed in a dry room with a temperature between 50 and 55 F, such as an attic or shed for storage. Most varieties of squash can be stored for several months. Avoid storing with apples, as this can reduce storage life.



Disease	Symptom	Treatment/Control
Blossom end rot	Fruit develops black rot near the end where the blossom originated.	Lack of calcium, decreased moisture and hot weather increase susceptibility. To prevent, keep plants adequately watered. Calcium sprays generally provide little benefit.
Powdery mildew	A white or gray powdery growth develops on the leaf surface, causing distorted fruit/seeds.	Mildew-resistant varieties are in development. Fungicides are available for treatment and prevention.

Disease	Symptom	Treatment/Control
Downy mildew	A fungal disease that exists on the seed and in the soil. It causes yellow lesions on the upper leaf surface, which eventually turn brown. New growth is stunted and discolored with the fuzz of fungal spores.	Seed treatments are available. Rotate fields with non-legumes. Destroy infected plant tissue to prevent fungal spread.
Aphids	Aphids damage plants by sucking sap. Aphids also transmit viral diseases in peas.	Spray plants with water. Insecticides are approved but may not be necessary. Destroy infected plants so eggs don't overwinter.
Squash bug	Squash bugs are gray or brown insects that suck sap from leaves, causing speckling before the leaves wither.	Hand-pick insects before population increases or use insecticide before plants flower. Spinosad is an organically approved option.
Squash vine borer	Adults lay eggs on lower vines and larvae tunnel through stems causing the plants to wilt and die.	Pupae overwinter, therefore crop rotation to a new area is beneficial. Pesticides must be on the vines before the borers begin attacking the vine.

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