



SUMMER SQUASH (*Cucurbita pepo*)

Summer squash receives its name due to the fruit being harvested and consumed in the summer — in contrast to winter squash, which is harvested and consumed later in the season. There is diversity in the types, colors, and shapes of summer squash: zucchini (also known as “courgettes”), yellow crooknecks and straight necks, patty pans, round squashes, and more. Fruits are ideal for grilling, sautéing, and raw eating. Other uses include as an ingredient in baked goods and the blossoms are also edible.

SITE SELECTION:

Fertile, well-drained soil with a pH of 5.8–6.8 produces the best quality fruit. Conducting a soil test prior to planting can indicate any necessary soil amendments. Plants like consistently warm temperatures, so a southern exposure is ideal. The use of plastic mulch and row covers can aid in achieving optimal growing temperatures, especially for early-season plantings.

Soil moisture is important in the initial stages of growth and during pollination when fruits are setting. Drip irrigation is recommended to prevent excess water on the foliage, which can lead to disease. Ensure plants receive the equivalent of one inch of water per week.

DIRECT SEEDING:

Sow beginning in late spring, after danger of frost has passed, when soil temperatures are at least 70°F/21°C — warmer temperatures result in better germination.

Sow 3 seeds every 12–24 inches, ½–1 inches deep, in rows 5–6 feet apart; or sow one seed every 4 inches, ½–1 inches deep, in rows 5–6 feet apart. Wider spacing may allow for easier harvesting. Thin to one plant every 12–24 inches for either initial sowing spacing.

TERMINOLOGY

Parthenocarpic varieties do not require pollination to produce fruit. These are highly recommended if you are growing in a hoophouse or greenhouse, where there are few bees or other pollinators.

Precocious yellow gene: A naturally-occurring gene that ensures fruits will remain yellow if infected by the cucumber mosaic virus or watermelon mosaic virus, which can cause green streaks on the fruit. Varieties expressing the precocious yellow gene have yellow stems.

TRANSPLANTING:

Transplanting avoids germination problems often associated with direct seeding and allows for an early crop in short-season areas. Summer squash can be prone to transplant shock, so ensure seedlings do not become root bound.

Start seeds indoors in pots or cell-type containers, such as 50-cell plug trays, 2–3 weeks before transplanting. Sow 1–2 seeds per cell, ½–1 inches deep, maintaining the temperature at a minimum of 70°F/21°C until germination. Thin to 1 plant per cell as soon as possible after germination. It is best to thin by trimming unwanted seedlings rather than uprooting them, which could disturb the remaining plants.

After the last frost, harden off the seedlings. Once hardened, transplant with 12–24 inches between plants and 5–6 feet between rows. Wider spacing may allow for easier harvesting.

ROW COVERS:

Plastic mulch and row covers can aid in achieving earlier crops and better yields, especially in the North. Not only do they add warmth to ensure consistently warm conditions, row covers also exclude insect pests. Most growers cover newly transplanted crops with floating row cover immediately after planting.

Remove row covers once the plants have female flowers to allow for pollination by honey bees and other pollinators. A female flower can be identified by the tiny fruit developing at the base of the blossom.

SUCCESSION PLANTING:

To have a consistent harvest over the entire season, plant summer squash at 30-day intervals until 8 weeks before the first fall frost.

DISEASES:

Diseases can be prevented with adequate soil drainage, good airflow, insect pest control, and crop rotation. Selecting varieties with resistances to the disease pressures in your area can also prove beneficial. For positive identification and control options of suspected disease, please contact your local Cooperative Extension Service agent.

Powdery mildew

Most prevalent midsummer to the end of the season, powdery mildew can be identified by the white powdery spots found on older leaves and stems. The fungus that causes the infection requires live plant tissue to survive. Infection by powdery mildew can also leave plants more exposed to contracting gummy stem blight.

Downy mildew

The pathogen that causes downy mildew in summer squash is host-specific to members of the Cucurbit family. The symptoms are pale spots that follow the leaf veins on the upper leaf surface and purplish-gray spores on the lower surface, producing black “fuzz” on the underside of the leaf. Due to the damage to the leaves, infection can reduce yields.

Bacterial wilt

Control pressure from cucumber beetles, as they can carry and transmit bacterial wilt — see the Insect Pests section for information on cucumber beetles. Infected leaves will wilt and droop, in addition to signs of insect damage, especially when there is heat and water stress. Severe infections cause plant death. Pull up infected plants as soon as they are identified with bacterial wilt and destroy.

Cucumber mosaic virus

One of the most common viruses that affect summer squash, cucumber mosaic virus is spread by aphids. Leaves of infected plants fail to form fully and often droop at the edges, resulting in an umbrella-like appearance. Fruit often show atypical color streaking. Varieties with the precocious yellow gene that are infected with cucumber mosaic virus may not show signs of color streaking.

Papaya ringspot virus and watermelon mosaic virus

Watermelon mosaic virus consists of 2 common strains, WMV1 and WMV2. The former, WMV1, is also known as papaya ringspot virus. Both strains are carried and transmitted by aphids. Leaves may develop abnormally, in addition to the discoloration typical of mosaic viruses. Fruit may also be affected by the virus, showing signs of blister-like growths and atypical color streaking. Varieties with the precocious yellow gene that are infected with watermelon mosaic virus may not show signs of color streaking.

Zucchini yellow mosaic virus

Symptoms of zucchini yellow mosaic virus may be similar to those of papaya ringspot virus or watermelon mosaic virus. Plants and leaves may be malformed; plants may show signs of reduced growth and, in addition to the yellow mosaic discoloration, leaves take on a shriveled, serrated appearance. Fruit can also be infected and may develop blister-like growths. The virus is carried by aphids.

INSECT PESTS:

Insect pests can be excluded from plantings by use of floating row cover. Keep field borders mowed and remove plant debris in the fall. Plow fields in the spring to bury pupae. Pyrethrin sprays may offer some control.

Cucumber beetles

Control of cucumber beetles is important, as they can carry and transfer bacterial wilt, in addition to causing feeding damage. Beetles are small with yellow bodies and either black spots or stripes. Protect against cucumber beetles with floating row covers applied at transplanting, or control with pyrethrin or azadirachtin.

Squash bugs

Large for insects, adults are gray with elongated, pentagon-shaped bodies and can cause significant feeding damage. Squash bug eggs can be found on the underside of leaves and then crushed by hand.

Vine borers

The larva, light in color with soft bodies and a dark head, cause the most damage by burrowing into the vines, resulting in wilting and progressive damage. Should you find vine borers in your crop, cut the borers out of the vine and then hill soil over the wound.

HARVEST FRUIT:

For certain varieties, it is common for the first fruits to be malformed, wither, or blacken. This is an indication of poor pollination and is usually remedied as more male flowers appear.

Harvest regularly, 2–3 times per week, once the plants begin to produce. Cut or gently twist fruits off the plant once they have reached the desired size.

- Zucchini: 6–8 inches long
- Yellow summer squash: 4–6 inches long
- Patty pan and round: 2–3 inches in diameter

Should you delay in harvesting, fruits quickly become over-sized.

Handle with care to avoid scratching the fruits.

STORAGE:

Keep fruit at 40–50°F/5–10°C at 95% relative humidity for up to 2 weeks. Use as soon as possible post-harvest for best quality.

HARVEST BLOSSOMS:

While all squash blossoms are edible, the varieties marked with the edible flower symbol have the best culinary characteristics. Blossoms bear a mild, squash-like flavor and are great stuffed and fried or sliced for use in soups, omelets, salads, and pasta dishes.

Harvest male or female blossoms in mid- to late morning when the flowers are fully open. Clip flowers 1–2 inches below the flower base. If a squash fruit crop is also desired from the same planting, harvest only male flowers, leaving a few to pollinate female flowers.

Male flowers have thin stems. Female flowers have thicker stems with an immature fruit at base of the flower.

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