

Popcorn in the Garden

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Summary

Whether you are looking for a healthy snack or a vividly colorful autumn decoration, you can find both in one garden product. Popcorn is a fun and practical crop to add to the garden because it will store for several months after harvest. This vegetable takes relatively little preparation and maintenance and, if uniformly planted, can be harvested at one time. Popcorn can be classified by: un-popped kernel shape (pearl or rice), popped kernel shape (butterfly or mushroom), and color. Butterfly popcorn is the kernel shape recommended for eating while mushroom popcorn is best for confectionary uses. Kernel color in popcorn is generally white, small-yellow, or large-yellow although there are now many different specialty varieties available including blue, red, black, brown, and calico colored kernels.

Recommended Varieties

It is possible to select varieties based on personal color, flavor, and size preferences. Varieties include: Yellow, White, Midnight Blue, Ruby Red, Mixed Baby, Turquoise, Mushroom Flake, and Strawberry. Each offers a certain flavor, hull color, and differs in kernel size and shape when popped. Most garden centers may carry varieties that perform well under local conditions. You can also order from reputable seed companies.

How to Grow

Soil: Popcorn will grow in all Utah soil types provided they are moist, nutrient rich, well-drained, and have neutral pH. Poorly drained soils increase the probability of lodging and thereby decrease yields.

Soil Preparation: Before planting, incorporate 2-4 inches of well composted organic matter and 1-1.5 lbs of all-purpose fertilizer (16-16-8) per 100 square feet of planting area. Work the compost and fertilizer into the top 4-6 inches of soil.

Plants: Corn is a warm weather vegetable that requires soil and air temperatures above 60°F for best germination and plant growth. Popcorn does not transplant well, therefore it is best to sow seed directly into the soil. When choosing a planting date, consider both spring soil temperature and the particular variety's date of maturity. To

get an earlier yield, some growers sow seeds 3-4 weeks before frost-free date by planting through or under clear plastic mulches.



Planting and Spacing: For a 100 foot row, you will need approximately 3-4 ounces of seed. Planting corn in a series of short rows increases pollination and yield compared to planting in two or three long rows. Plant seeds 1-2 inches deep spaced 8-10 inches apart in the row with 24-30 inches between rows. Plant density for popcorn is greater than that of sweet corn because plant size and yield per plant are smaller. Popcorn generally matures in 85 to 120 days and may not be suitable for all areas of Utah. Do not grow sweet corn and popcorn in the same garden because cross-pollination will occur resulting in unfavorable flavors and poor popping in popcorn.

Water: Uniform soil moisture levels are very important for a high yield. Water requirements are most critical during tasseling, silking, and ear formation. Drought stress at these times will decrease yield and kernel quality as well as cause an uneven harvest. Water amounts depend on soil type. Apply 1½-2 inches per week especially during ear growth.

Fertilization: Popcorn has a high fertilizer requirement and responds to nitrogen fertilizer. Nitrogen promotes stalk and ear growth and kernel quality. Sidedress popcorn with ½ lb of nitrogen fertilizer (34-0-0) per 100 square feet when plants have 8-10 leaves and with an additional ¼ lb when the silks appear. Place the fertilizer to the side of the row and irrigate it into the soil.

Problems

Weeds: Weeds can compete with corn seedlings for space, nutrients, light and water. To control weeds, cultivate

the corn patch regularly being careful not to damage the roots of the growing crop.

Insects and Diseases: Insect and disease problems in popcorn are similar to those of sweet corn.

Insect	Identification	Control
Aphids	Green or black soft-bodied insects that feed on leaves, tassels and ears. Plants become crinkled, curled, and growth is stunted when plants are small. Honeydew makes plants and ears sticky.	Use insecticidal soaps, appropriate insecticides, or strong water stream to dislodge the insects. Aphids cause cosmetic damage to the ears.
Corn Earworms	Larvae feed on silks and ears of corn. Damage symptoms include holes in ear tips, loss of silks, and damp excrement near silk.	Spray with BT or appropriate insecticides. Regular applications are necessary to protect the plants. Apply mineral oil to silks. Remove damaged part of ear at harvest.
Cutworms or Army Worms	Larvae feed near the soil surface and sever the plants close to the ground. Most damage done at night.	Use barriers or collars around plants. Keep organic mulches way from young plants.
Disease	Symptom	Control
Root Rots and Damping Off	Seedlings darken, wilt and die. Associated with cool, wet conditions in the spring.	Use treated seed. Allow soils to dry before re-watering.
Smut	White fungal galls that form on the tassel, stem, or ear. Early plant infection will stunt growth and deform ears.	Remove and destroy galls and severely infected plants. Plant resistant varieties.
Wilt Diseases	Wilting leaves, streaking and drying of leaves, stalk rotting, and plant lodging may occur. Plants often die.	Remove infected plants. Maintain clean garden practices.

Harvest and Storage

Unlike sweet corn, popcorn is harvested after the kernels are completely dry and the husks are tan and brittle. When mature ears are ready for harvest, pick all the ears and remove the husks off the ear. Place the shucked ears in a mesh bag and dry them in a warm, well-ventilated room. Kernels and cobs have high moisture content at harvest so additional drying is necessary. By drying the ears, moisture will decrease to a safe storing range of 12-15%. After about two weeks, shell a cob and pop the kernels in the microwave (place in a paper bag), air popper, or on the stovetop. Sample ears each week until favorable popping is achieved. If the popped kernels are chewy or have many jagged edges, the seed moisture content is still too high. If there are many un-popped kernels, the popcorn is too dry. Add 1 tablespoon of water to 1 quart of kernels and let sit 1-4 days, and then try popping some again. When the ears are properly dried, shell the kernels off the ears and store them in an air-tight container. Popcorn can be stored for several years if refrigerated.

Productivity

Expect one or two ears of popcorn per plant. Two plants will provide one serving per person. Plant approximately a 20 foot row per person.

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Nutrition

Popcorn can be a healthy snack depending on how much butter and salt you to add. One cup of air popped popcorn is low in calories and fat and provides some protein and carbohydrates.

Frequently Asked Questions

Q. I would like to grow Indian corn as well as popcorn, what are the differences? The environmental and cultural requirements for Indian corn are exactly like popcorn, the differences lie in the harvest and storage requirements. Indian corn is left on the stalk until it is fully dry. When ears are ready, cut or tear them from the stalk along with the stem. Shuck the ears without detaching the husk. Display the ears for as long as they look presentable then discard. Kernels can also be ground into corn flour.

Q. Why does colored kernel always pop out white? The popcorn kernel is covered with a thin, hard colored (yellow, white, red) shell called the hull. When heated, water inside the kernel heats and becomes steam. The pressure rises quickly to the point that the hull breaks and seed's contents burst out. The soft, fluffy part of popcorn that we eat is actually the exploded endosperm. The endosperm does not contain pigmentation and so is white.