



# Vegetables: Growing Sweet Corn in Home Gardens

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS104E

## Crop at a Glance

**Growing season:** Spring and summer

**Time of planting:** When soil temperatures reach 60°F

**Spacing:** Space plants 8–10 inches apart; rows should be 24–36 inches apart

**Days to harvest:** Varies by cultivar, usually from 60–90 days

**Average yield:** Three dozen ears per 10-foot row

**Common starting method:** Seed

grown for use as a grain and harvested when the kernels are dry and mature, sweet corn is grown for use as a vegetable and is harvested when the kernels are immature. The difference between the two occurs because all varieties of sweet corn contain a naturally occurring gene that slows down the conversion rate of sugar to starch within the corn kernels. This results in a substantially higher level of sugar in the kernel. Plant breeders have created different varieties of sweet corn based on several sub-types (su, se and sh) of this gene.

Normal sugary types (su) are advertised as having “old-fashioned” corn flavor. The sugars convert to starch rapidly after harvest. The sugary enhanced types (se) have a slower sugar-to-starch conversion after harvest. Super sweet types (sh) are not only sweeter, but have the slowest conversion of sugar to starch after harvest.

It’s important to understand the differences between sweet corn types because it helps in determining which varieties can be planted near one another. Planting mistakes can result in starchy kernels, no matter when the corn is harvested.

Additional decisions in the selection process might include: planting for a single harvest or multiple harvest; ear color (i.e., white, yellow or bicolor); use of the corn (fresh eating versus preserving), and pest resistance characteristics.

## Choosing a Planting Site

It is important to map out your garden in advance and know what crop you want planted in specific locations at specific times. Space is an important consideration when selecting the site for your garden, as is the location of the sweet corn planting within that garden. To extend the sweet corn season, gardeners do one of two things: 1) they may plant several different varieties at the same time, where each variety has a different maturity date, or 2) gardeners may choose to plant the same variety in stages, separated by a period of several weeks, in order to extend the sweet corn harvest.

## Introduction

Sweet corn (*Zea mays*) is the most commonly planted type of corn in home gardens, although some home gardeners also like to plant varieties of popcorn or ornamental corn (sometimes called Indian corn) for something fun and different.

Corn requires significant garden space, full sun (at least 6 hours/day) and soils that are warm (60° to 85°F) and well drained. Corn also demands careful attention to planting, watering and fertilizing schedules. Successful sweet corn gardeners put considerable effort into planning and monitoring their crop, and are usually rewarded with a bountiful yield.

## Selecting Types to Plant

Commercial seed companies offer a wide variety of sweet corn types, which may change from year to year. The information in this publication is designed to help home gardeners better understand how to choose varieties that are best suited to their unique garden conditions, and not to comprehensively list all potential varieties.

The first decision a gardener must make is to choose the type of sweet corn to plant. Unlike field corn, which is

*This fact sheet is part of the WSU Extension Home Garden Series.*

If you are planting sweet corn varieties that must be isolated by distance (to avoid cross-pollination), make sure you don't fall within the range of a neighbor's sweet corn garden, unless the corn varieties are compatible.

## Planting Guidelines

Corn should be planted when the soil temperature reaches 60°F; and seeds can be sown by hand or with a mechanical planter. If the soil is cool and moist, plant the seeds to a depth of 0.50 inches. If the soil is warm and dry, plant to a depth of 1 inch. In eastern Washington, planting usually takes place around mid-April; in western Washington, planting usually takes place near the end of April. Make sure there is no danger of frost when planting.

Sweet corn is wind pollinated so it produces best when the plants are grown in a block of at least 4 rows. To provide isolation by time, or to extend harvest season of a single variety, plant seeds for a second block when most plants from the previous planting have three leaves. Sweet corn pollinates poorly when temperatures near 100°F—the ears will display gaps (missing kernels)—so it's important to factor pollination timing into your planting decision.

At the time of planting, side-dress the seeds with band of balanced garden fertilizer (e.g. 10-10-10), applying it two inches to the side and two inches below each seed.

## Plant Maintenance

Corn requires regular monitoring of water and fertilizer, and gardeners should watch for any appearance of pests (weed, insect, vertebrates, etc.) or disease symptoms. When four or five leaves are fully expanded, fertilize the crop again with nitrogen by applying a side dressing of 0.5 – 0.75 pounds per 100 ft of row. Unless soil tests indicate a deficiency, don't add phosphorous, as it may contribute to run-off issues in nearby waterways.

Supplement natural rainfall so the corn receives 1 to 1.5 inches of water per week. In the seedling stage, watering should be spread out over several days; in later growth stages, one deep watering per week is sufficient. Keep rows free of weeds as they compete with the crop and may harbor pests. Using organic mulches and frequent, light cultivation with a hoe are the best approaches to proactive weed management.

## Pest Management

The key to effective pest management is monitoring your garden on a daily basis. Take samples of insects and symptomatic plant material to your county Master Gardener Clinic (<http://mastergardener.wsu.edu/mgpcounty.html>) for identification. Once the pest problem is identified, consult Master Gardeners or the WSU Hortsense database for management options (<http://pep.wsu.edu/hortsense/>).

## Common Problems

### Cutworms

Photo: Clemson University-USDA Extension slide series, Bugwood.org



**Symptoms:** Small plants cut off at ground line and topple over.

**Corrective Action:** Scratch soil surface with finger to turn up caterpillars. Protect plants at soil line with collars. See <http://pep.wsu.edu/hortsense/> for chemical management information.

### Climate too cool

**Symptoms:** Plants not growing.

**Corrective Action:** Patience—wait for warmer weather.

### Nitrogen deficiency

Photo: R.L. Croissant, Bugwood.org



**Symptoms:** Leaves become yellow or light green, growth slows (top three leaves in image).

**Corrective Action:** Side dress with nitrogen fertilizer.

### Phosphorus deficiency

Photo: Mary Ann Hansen, Virginia Polytechnic Institute and State University, Bugwood.org



**Symptoms:** Leaves with reddish or purplish streaks.

**Corrective Action:** Side dress with complete fertilizer. Note: This deficiency is extremely rare in Western Washington.

### Mites

Photo: Darren Mueller, Iowa State University, Bugwood.org



**Symptoms:** Leaves stippled, bronzed, or yellowed; webbing on both leaf surfaces with "moving dust."

**Corrective Action:** Allow tiny 1/16" black and white ladybugs to work. Hosing will reduce numbers but not eliminate mites. Switch to slow-release nitrogen fertilizer.

### Corn aphids—Various species

Photo: Clemson University-USDA Extension slide series, Bugwood.org



**Symptoms:** Leaves become yellow, masses of plant lice (and ants, ladybugs) on leaves.

**Corrective Action:** Hose to knock off aphids. Allow existing ladybugs, syrphid fly larvae, and other predators (not ants) to work. See <http://pep.wsu.edu/hortsense/> for chemical management information.

### Corn earworm

Medium 1½" caterpillars of variable color.

Photo: R.L. Croissant, Bugwood.org



**Symptoms:** Ears, tassels, and silks with worms and/or frass, ears with holes inside; kernels gouged.

**Corrective Action:** Handpick and destroy. See <http://pep.wsu.edu/hortsense/> for chemical management information.

### Smut

Photo: Clemson University- USDA Extension slide series, Bugwood.org



**Symptoms:** Ears, tassels, leaves with black gnarled growth.

**Corrective Action:** Remove and destroy growths as soon as noticed; keep black powder in galls out of garden area. In the Columbia basin, smuts can largely be avoided by planting before mid-May.

### Earwigs

Feed on silks and prevent pollination, thus killing kernels.

Photo: David Cappaert, Michigan State University, Bugwood.org



**Symptoms:** Ears only partly filled, shortened silks, presence of earwigs on silks.

**Corrective Action:** Traps: place rolled newspaper or cardboard or burlap near corn, check daily for earwigs and destroy.

### Poor pollination

Photo: R.L. Croissant, Bugwood.org



**Symptoms:** Ears poorly filled, no insect damage to silks.

**Corrective Action:** Next year, plant corn in hills or blocks (e.g., several rows side by side) rather than one long row. Time planting so pollination does not take place during 100°F weather.

### Raccoons

Photo: Terry Spivey, USDA Forest Service, Bugwood.org



**Symptoms:** Plants damaged and ears have disappeared.

**Corrective Action:** Primarily an urban pest. Consider fencing and/or consulting pest control companies specializing in nuisance wildlife removal.

## Harvest and Storage

Under normal conditions each stalk will yield one ear; under good conditions it will yield two, with the second ear being the smaller and later to appear. Ears are ready when the silks are completely dry and brown. Pick ears early in the morning when the temperature is at its coolest. Put ears in an ice water bath for 30 minutes, drain on toweling, then place in the refrigerator.

Sugars in the kernel are at their highest peak when the kernels are at the “milk stage”—the point where, when punctured, the kernel juice appears milky. Sugars will be rapidly converted to starch if the ear matures on the plant past the milk stage, and when the ear is harvested. Although varieties may differ in how fast the sugar to starch conversion takes place, in general, sweet corn needs to be eaten or processed shortly after harvest.

## End Uses

For fresh eating, sweet corn ears can be roasted whole, shucked and steamed, or shucked and boiled. Sweet corn can also be processed by cutting kernels off the cob and canning or freezing them alone, or in combination with other vegetables.

The University of Georgia hosts the National Center for Home Food Preservation website (<http://www.uga.edu/nchfp/>), which offers research-based recommendations for most methods of home food preservation.

## Additional Reading

Cogger, C. 2012. Raised Beds—Deciding if they benefit your vegetable garden. *Washington State University Publication FS075E*. <http://cru.cahe.wsu.edu/CEPublications/FS075E/FS075E.pdf>.

Craig, B. 2011. Food Preservation Resources. *Washington State University Publication C1117E*. <http://cru.cahe.wsu.edu/CEPublications/C1117E/C1117E.pdf>.

Miles, C. 2013. Growing Vegetables in the Home Garden. *Washington State University Publication EM057E*. <http://cru.cahe.wsu.edu/CEPublications/EM057E/EM057E.pdf>.



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Header photo by Doug Wilson, USDA-ARS image gallery.

Use pesticides with care. Apply them only to plants, animals, or sites as listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

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