FRUITS & VEGETABLES

Sweet Corn for the Garden no. 7.607

by J.E. Ells[1]

Quick Facts...

Sweet corn remains in prime condition for only a day in hot weather.

To enjoy the best quality corn, harvest it at its prime and eat it immediately.

Missing kernels resulting from poor pollination is the most common cause of dissatisfaction.

For best results, give sweet corn adequate nitrogen.

There is a great deal of satisfaction in harvesting corn fresh from your garden, having it for supper, and knowing it is fresher than any corn you could buy. This desire for fresh sweet corn is perhaps the main reason for including it in the garden.

Requirements

For the best sweet corn, meet the plant's requirements for light, temperature, planting, water, fertilizer and pollination.

Light

Sweet corn requires at least eight hours of direct sunlight each day in order to grow its best. Because it shades other plants, put it in the northern part of the garden.

Temperature

Don't plant corn until the soil temperature is 50 degrees F at a depth of 3 inches. Below this temperature, corn will not germinate and stand losses will result from seed decay.

The rate at which corn grows is influenced by temperature. This has a bearing on planting. Plantings made a week apart in May will ripen two or three days apart in August. For this reason, plantings of the same variety seldom are made closer than a week apart for successive harvests.

Planting

Plant corn as soon as the soil temperature 3 inches deep reaches 50 degrees. The standard spacing for corn planted in rows is 6 inches in the row and 30 inches between rows.

To achieve good pollination, corn may be planted in blocks instead of rows. A block should have at least nine plants (3 x 3). Plant the seed 1 1/2 inches deep and 12 inches apart for small, early varieties and 15 inches apart for large, late varieties.

Plant two seeds in each hole. If they both germinate, thin later to one plant. Leave pathways from which to tend the blocks, because this planting method does not allow working room within the blocks.

Water

Corn has a unique way of showing water stress: the leaves roll in toward the midrib. Do not allow corn to remain in this condition for more than an hour or two. Give corn about 1 inch of water a week to keep soil moisture adequate.

Colorado State University Cooperative Extension

Putting Knowledge to Work

Fertilizer

Corn is a heavy user of nitrogen. While some nitrogen is supplied with manure, salt damage may occur if all the nitrogen comes from manure. Do not apply more than 50 pounds of manure per 100 square feet . This supplies about 0.3 pound of nitrogen.

A corn crop requires .25 pound of nitrogen and .1 pound of phosphate per 100 square feet. Apply all of the phosphate ($P_2 0_5$) and half the nitrogen (N) before working the soil in the spring. Apply the rest of the nitrogen on July 1. The actual pounds of fertilizer used depend upon the percent of nitrogen and phosphate it contains.

In most cases, only nitrogen and phosphate are required. However, there are many soils in Colorado that are deficient in other elements. Manure is almost a sure way to avoid minor element deficiencies. However, if there is some question about soil fertility or manure isn't practical, consult your Colorado State University Cooperative Extension county office about a soil test.

Pollination

Incomplete pollination results in kernel skips on the ear and is the most common cause of dissatisfaction. In order for a kernel to develop, a pollen grain must land on the silk that leads to that kernel. Because corn pollen is airborne, the air currents carrying the pollen must be directed to the silk. This is done by planting corn in blocks instead of rows.

If corn of one variety is pollinated by corn of a different variety, different kernels on the same ear will show different traits. For example, if sweet corn and field corn are planted side by side, the kernels pollinated with field corn pollen will lack sweetness. When yellow corn is planted beside white corn, the white ears will bear a few yellow kernels. When Xtra sweet lines are pollinated with regular pollen, the high sweetness will be lost. For uniform flavor and color, isolate white, field and Xtra sweet corn.

Varieties

Several traits describe sweet corn varieties.

Sweetness

Sweetness is influenced by the genetics of the variety. Three genotypes determine sweetness:

- *Normal sugary (su).* This gene is present in the older sweet corn varieties and represents the traditional sweet corn flavor.
- *Sugary enhanced (se and se+).* These genes modify the (su) gene, making the variety sweeter and slowing the conversion of sugar to starch after harvest. An (se) hybrid is a cross between an (su) line and an (se) line. An (se+) hybrid results when two (se) lines are crossed.
- *Shrunken (sh_2).* This gene gives a very sweet flavor to corn, while slowing down the conversion of sugar to starch. It is found in the super sweet varieties and produces a sweetness that some people find excessive. Varieties of this type must be isolated from the pollen of other corn varieties to achieve their super sweet status.

The typical sweet corn variety used to be yellow, but now bi-color, a combination of yellow and white kernels, is becoming popular, as is white sweet corn.

Color and Size

The typical sweet corn variety used to be yellow, but now bi-color, a combination of yellow and white kernels, is becoming popular. So is white sweet corn. Sweet corn has an even number of kernel rows, from eight to 22. Early corn typically has fewer rows and larger kernels than later corn. Length of ear is also tied to earliness, with the early varieties having shorter ears.

Season

The season in which the corn is harvested is important because gardeners look forward to the first corn out of the garden. For this reason, earliness is desirable. However, the earliest corn often lacks quality. Plant an early variety for fresh sweet corn early in the season and later varieties for quality sweet corn. Virtually all sweet corn varieties are hybrids, so seed cannot be saved anyway. You might as well plant a series of different varieties each week, from the last week in April until the last week in June.

- *Early corn.* 60 to 70 days. Stalks 5 to 6 feet tall, ears 6 to 7 inches with eight to 12 rows of kernels. Examples: Royal Crest, Early Sunglow, Early Xtra Sweet.
- *Midseason.* 70 to 80 days. Stalks 6 to 7 feet tall, ears 7 to 8 inches with 12 to 16 rows of kernels. Examples: Golden Beauty, Marcross, Sugar King, Morning Sun.
- *Late.* 80 to 100 days. Stalks 7 to 9 feet tall, ears 7 to 9 inches with 16 to 20 rows of kernels. Examples: Golden Cross Bantam, WK199, Jubilee, Iochief, Illini Xtra Sweet.

Plant an early variety for fresh sweet corn early in the season and later varieties for quality sweet corn.

White corn includes early (Silver Sweet), late (Silver Queen) and rowless kernel or shoe-peg kernel corn (Country Gentleman). Some authorities recognize Silver Queen as the epitome of sweet corn excellence.

Outstanding Varieties

Some of the varieties found to be outstanding in the Fort Collins, Colorado, sweet corn trials are summarized in Table 1.

Table 1: Outstanding varieties in Fort Collins sweet corn trials.

Variety	Days	Color
Precocious	56	yellow
Spartan	56	yellow
Maple Sweet	63	yellow
Sugar Buns	65	yellow
Quickie	67	bi-color
Bodacious	72	yellow
Breeder's Choice	73	yellow
Sweetie 76	76	yellow
Clockwork	77	yellow
Divinity	78	white
Star Struck	80	bi-color
Lancelot	80	white
Phenomenal	85	bi-color
Bunker Hill	87	yellow
How Sweet It Is	88	white

Suckers

During the season, many varieties of corn produce shoots or suckers from the base. Removing these suckers does not increase yields and they are best left alone.

Pests

Rootworm and corn earworm are the two most common pests of sweet corn. Control recommendations are given below. Contact your local Cooperative Extension county office for help with other insect and disease problems.

Rootworm

When corn is grown in the same place year after year, as it frequently is in home gardens, a rootworm population is likely to build up in the soil. Their presence is evidenced when stalks blow over in July. Cutting into the base of a

fallen stalk will reveal small, black-headed worms.

To avoid this problem, control the adult beetles that feed on the silk, or rotate the corn to different ground.

Corn Earworm

Earworm infestation results after the adult moth lays her eggs on the silk. When the larvae hatch, they work their way into the ear and feed on the ear tip. To prevent this, protect the silk with an insecticide. A 2 percent Sevin dust is one method. However, because their activities generally are confined to the tip, the affected portion may be cut off after harvest.

Harvesting

Harvest sweet corn when the kernels are well-filled and tightly packed. A kernel should squirt milk when punctured with the thumbnail and show evidence of developing dough. The yellow varieties should have yellow kernels at the tip. When these conditions are met, the corn is ready to harvest.

At 60 degrees, an ear will remain in prime condition for five days. At 85 degrees, it will remain in prime condition only one day. To check the stage of maturity, peel back the husk of an average ear, observe and apply the thumbnail test.

To harvest, firmly grasp a full ear, bent it downward, and pull it toward the ground with a turning motion. As soon after harvest as possible, husk the corn and boil it to deactivate the enzymes that convert the sugars to starch. It is then ready to eat.

[1] *J.E. Ells, Colorado State University Cooperative Extension vegetable crop specialist and associate professor (retired), horticulture and landscape architecture. Reviewed by D.E. Whiting, Cooperative Extension consumer horticulture specialist.*