**Sweet Corn, Baby Corn (Pickling Corn), and Popcorn**

About Sweet Corn Types

Older, *su* (normal endosperm) corn types are best for cold soils, but they have the least sugar of all sweet corn types. Generally, *se/se*, some *se*, and new complex combinations like the *se/se/bt2* types have the best flavor, texture, aroma, and high sugar content.

Any cultivars with even one *sh2* dose (shrunken endosperm type) are not recommended for gardening because isolation (to avoid cross-pollination) can be a problem if other cultivars of sweet corn are grown in the neighborhood. Also, many people consider the kernels of *sh2* types too sweet and too crisp whether eaten fresh, canned, or frozen. These types were developed for long-distance shipping to supermarkets. For short-term camping, hiking, or mini-vacation trips, *sh2* types would hold acceptable quality the longest. The very best of all worlds are in the new *se/se/bt2* types like ‘Serendipity’.

Usually, *se* and *se/se* types that are about 75 days or later in maturity and have deep kernels and long, fat ears (more recovery) make the best canning and freezing cultivars. Sometimes, a *se/se* type may have kernels that are considered too tender for canning. Because of their appearance, yellows are usually thought best for processing (especially canning) and whites considered poorest.

**Soil Fertility and pH**

Soil testing is strongly recommended to determine soil pH and nutrient status (purchase kits from your local county extension office or garden supply center). Sweet corn grows best at a soil pH between 6.0 and 6.8. Fertilize and lime as directed by soil test results.

In the absence of a soil test, fertilize in one of these ways: (1) apply 4½ pounds of 5-10-5 fertilizer per 100 square feet mixed with a 1-inch-thick layer of compost and incorporate as a broadcast treatment, or (2) mix compost with 3 pounds of 5-10-5 per 100 square feet prior to planting and then band 1 pound of 5-10-5 per 100 square feet at planting time (2 inches to the side and 2 inches below the seed).

**Latitude**

Some seed catalogs list optimal latitudes for growing sweet corn cultivars. Most of Pennsylvania lies between 40 and 42 degrees latitude, so consider a different cultivar if its latitude is above 42 degrees.

**Planting Dates**

Plant seed May 1–July 1 in central Pennsylvania. For successive harvests, sow a series of cultivars of varying maturities; also make several sowings of proven main-season types. Remember that corn responds to total heat units, so a later planting of the same cultivar will generally develop at a faster rate than an earlier planting.
**Depth of Seeding**

- Heavy or moist soils: 1 inch
- Dry or sandy soils: 1½ inches

**Spacing**

- Between rows: 2½–3 feet
- Between plants in row: 4 inches
- Thinning: early cultivars, 8–10 inches; late cultivars, 10–12 inches (thin when corn plants are 4 inches high)

**Suggestions**

To conserve space in a garden, plant corn next to vining cucurbits such as cucumbers. As the vines grow, they will tend to grow between the corn rows and up the stalks.

If possible, plant corn cultivars in small blocks to obtain maximum pollination. Four or more short rows of a cultivar side by side will give much better results than one long row. You can also plant corn in blocks thinned to a spacing of 17 by 17 inches to 20 by 20 inches.

Pick sweet corn at the milk stage—that is, as soon as kernels become well filled and plump, but before the starchy or dough stage develops (test a kernel near the tip by pinching). For maximum sweetness and tenderness, eat corn as soon as possible after picking. If quantities must be kept for a day or two, harvest during the cool, early morning hours and then keep the harvested ears out of the sun and just above freezing (about 34°F) until ready to use.

**Insect Identification and Management**

A statewide monitoring network gives flight catches determined from pheromone traps of European corn borer, corn earworm, and fall armyworm. Contact your county extension office for more information. The flight information is presented as maps at www.pestwatch.psu.edu.

**Corn Earworms**

Earworms are large (up to 1¾ inches long) and vary greatly in color from a light green or pink to brown with alternating light and dark stripes running lengthwise on the body. They are the larval life stage of moths that do not overwinter well in Pennsylvania but migrate into our area from the south annually. Pennsylvanians are typically dealing with the immigrants and their offspring. Therefore, the worms are a minor problem on early corn, but starting in early August, the planting can be heavily infested. Adult moths lay eggs directly on silks, and young larvae then tunnel directly into the tip of the ear. Use the Pest Watch Web site to determine when moths are moving into the area, and apply controls when moths are flying in your area. Controls can include either spraying the ear zone when plants are 30 percent, 50 percent, and 100 percent in silk, or brushing silks with horticultural oils if done several times as the silks grow. Cutting tips off ears removes worms. Several transgenic cultivars express a protein that provides tolerance to corn earworm.

**European Corn Borers**

Borers are up to 1 inch long, cream or flesh colored, and marked with numerous small, round, brown spots. They are the larva of moths that overwinter and have multiple (typically two) generations in Pennsylvania. They feed in all parts of the stem and ear. A line of pinholes across the leaves is characteristic of borer feeding since they bore through the leaf while it is still curled. Moths
are strongly attracted to tasseling and silking corn. The typical time to control the first brood with sprays is during the last two weeks of June. The typical time to control the second brood is during August. Check the Pest Watch Web site for current conditions. Several transgenic cultivars express a protein that provides resistance to European corn borer.

**Fall Armyworms**
Fully grown larvae are about 1½ inches long. Worm colors vary from light tan or green to black with a black stripe along each side. The head has a prominent “Y” with a series of dark spots running along the back, and the last or next-to-last abdominal segment has four distinct black dots. These moth larvae require warmer areas to overwinter and, thus, must migrate in from a great distance.

**Sap Beetles**
These beetles can be found feeding on silks from June through August. Dusky sap beetles are small, about 3/16 inch long. They are gray to black in color and oblong in shape. They invade plants when tassels begin to show, feed on green silks, and feed on kernels when the silks begin to brown. Damage from corn borer larvae and Japanese beetles attract sap beetles.

**Flea Beetles**
Flea beetles are small (1/16 inch), black, and can be recognized by their jumping habit when disturbed. They eat the surface from the leaf, causing a white streak parallel with the veins. Flea beetles are most abundant in warmer areas of the state and especially after mild winters. The beetles are most important in their transmission of a disease known as Stewart’s wilt or bacterial wilt. Grow resistant cultivars where wilt has been a problem.

**General Management Strategies**
Use the Pest Watch Web site to help determine when moths are flying in your area, and then use an insecticide labeled for managing vegetable insects in sweet corn, or horticultural oil if only corn earworm is the concern. *Bacillus thuringiensis* (Bt) sprays may be effective for corn borers. Cultivars that express bacterial proteins from Bt are effective.

**Disease Identification and Management**

**Stewart’s Bacterial Wilt**
Yellow to brown streaks up to 1 inch wide develop on leaves and may extend the length of the leaf. Brown discoloration and sometimes rotted cavities form in the center of the stem near the soil line. Plants affected early may die; plants affected late may be stunted or merely have streaked leaves. The disease is caused by a bacterium that survives inside and is transmitted by flea beetles. The disease is most prevalent following mild winters, especially in the mildest parts of Pennsylvania because a greater number of flea beetles will survive during a mild winter.

**Smut**
Smut is characterized by the presence of large, fleshy, irregular galls on leaves, stems, ears, and tassels (male flowers). Immature galls are white and spongy; mature galls turn brown and contain powdery, dark spores. Smut is promoted by plant injury caused by cultivation, insects, and hail.

**Rust and Leaf Spots**
Rust is characterized by reddish to brown, rusty, powdery areas (pustules) on the top surfaces of leaves. Leaf spots can be small or large and range in color from white to tan to brown with a red border; the spots are usually elongated and appear first on oldest leaves. These diseases can be significant, but usually only late in the season.

**General Management Strategies**
Grow cultivars with resistance to Stewart’s wilt when needed. Remove and dispose of smut balls before they turn black and break open. Dispose of stalks and leaves as soon as harvest is over.
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