

Sweet Corn - Horticulture

Major update by Ben Phillips, Liz Maynard, Bill Tracy – Oct 2020

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Crop Description

Sweet corn (*Zea mays* subsp. *mays*) originates from a wild relative in Central America. Sweet corn is usually described by color (yellow, bicolor, or white) and by the major gene names that make it sweet. Despite the many marketing terms and trademarked names, sweet corn can be categorized into five major types.

The original sweet corn (called standard, sugary, or *su*) contains the *su1* genetic variant that makes it sweet instead of starchy like field corn. Sugary sweet corn is grown today primarily for processing and specialized markets.

A second type of sweet corn (called sugar-enhanced, sugary enhancer, EH, or *se*) contains the *se1* genetic variant in addition to *su1*. The combination increases sugar content and makes the kernels more tender. Heterozygous *se* corn has one copy of the *se1* mutation and homozygous *se* corn has two copies of the *se1* mutation, increasing its effect. Sugar-enhanced sweet corn is grown primarily for direct retail sales and local wholesale markets.

A third type of sweet corn (called supersweet, ultrasweet, extra sweet, or shrunken-2) contains the *sh2* genetic variation. This type typically has a higher sugar content than *su* corn, and the sugar content does not decline rapidly after picking, so it remains sweet for several days after harvest. Kernels typically are not as tender as *se* corn. Shrunken-2 (*sh2*) types are grown for retail sales, local fresh markets, and wholesale shipping markets.

Many of the newest sweet corn varieties combine the *sh2* (or similar genes) with *se* and/or *su* genetics. Sugar-enhanced sweet corn that also includes *sh2* (or similar) genes is called synergistic, and may be abbreviated as *se**sh2*, *syn*, or *sy* corn. Current synergistic varieties are typically very sweet and very tender. Shrunken-2 sweet corn varieties with genetics increasing tenderness and flavor are categorized as augmented or improved supersweet or *sh2*, sometimes abbreviated *shA* or *sh aug*. These varieties are typically extremely sweet and tender. Many of these varieties have performed well in midwestern trials and receive top ratings for eating quality. A variant of the *sh2* gene called *sh2-i* is becoming available in the market. This variant leads to plumper seeds, which may improve germination in unfavorable conditions. It also increases the compounds that give sweet corn kernels a creamy texture, which is associated with improved eating quality. The new types are often identified by trademarked brand names.

Sweet corn varieties commonly have some resistance to major diseases. Varieties with resistance to certain insects, and/or glyphosate or glufosinate herbicides are also available.

Planting and Spacing

Common spacing is 30 to 40 inches apart between rows. Plant early varieties 8 to 10 inches apart in the row, late varieties 9 to 12 inches apart in the row. Seed 10 to 15 pounds per acre.

Sweet corn flavor is affected by pollen source. Isolate all sweet corns from all other non-sweet corns, including dent (field), flint (Indian), flour, and popcorn by 250 feet or by a 14-day difference in tasseling dates. Likewise, supersweet (*sh2*) and augmented (*shA*) sweet corn varieties must be isolated from sugary (*su*), sugar-enhanced (*se*) and synergistic (*syn*) types. If not isolated, kernels of both varieties will be starchy instead of sweet. Refer to the table below for isolation requirements or check with your seed supplier.

To maintain color purity, isolate white corn from yellow or bi-color corn. Pollen from yellow or bi-color corn will cause some yellow kernels in white varieties. Pollen from yellow corn will lead to extra yellow kernels in bi-color varieties. Pollen from white corn will not affect the color of yellow or bi-color varieties.

Table of Sweet Corn Isolation Requirements

Type	Isolate from
Sugary (<i>su</i>)	<i>sh2</i> , <i>shA</i>
Sugar-enhanced (<i>se</i>)	<i>sh2</i> , <i>shA</i>
Synergistic (<i>se</i> x <i>sh2</i> = <i>syn</i>)	<i>sh2</i> , <i>shA</i>
Shrunken-2 (<i>sh2</i>)	<i>su</i> , <i>se</i> , <i>syn</i>
Augmented (<i>su</i> x <i>sh2</i> = <i>shA</i> or <i>sh aug</i>)	<i>su</i> , <i>se</i> , <i>syn</i>

Plastic mulch and/or transplants are used by some growers on the first plantings to achieve a 7-to-14-day earlier harvest of sweet corn. Two corn rows can be placed on one mulch strip. Whenever clear plastic is used, it is important to plan for weed management under the plastic; herbicides like atrazine, and s-metolachlor can be used. With IRT mulch weeds are less of a problem under the plastic. Increasing in-row spacing with plastic mulch increases the chances of ripening tiller ears.

One method is to direct-seed corn in a shallow trench over which clear plastic is applied just after seeding. The clear plastic warms soil and air, speeding emergence and seedling growth. Monitoring temperature and sunshine is important because on warm sunny days it can get too hot under the plastic. When temperatures are going to routinely exceed 86 F under the plastic, the plastic should be opened or removed. It can be cut down the row along the center and allowed to open up so corn is exposed.

Another method is to apply clear or infrared transmitting (IRT) mulch to the soil on 5 or 6-ft. centers, and direct-seed or

transplant 2- to 3-week-old plants from 72 to 98 cell trays through the mulch.

Conventional seed treatments permit successful direct-seeding of sweet corn in the first fieldwork window of the season. Corn spikes may not emerge for 3 weeks, but the seed treatment prevents rotting and typically ensures a first harvest near July 4th in Iowa. This timeline has been observed with varieties demonstrating high vigor across all sweetness levels, including sh2. For these early plantings it is important to choose varieties known to have good emergence in cool soil.

Fertilizing

pH: Maintain the soil pH between 6.0 and 6.5.

Before planting, apply 40 to 60 pounds N per acre, 0 to 100 pounds P₂O₅ per acre, and 0 to 150 pounds K₂O per acre based on soil test results and recommendations from your state. For early plantings, apply a starter fertilizer at planting 2 inches below and 2 inches to the side of the seed, but do not exceed 80 to 100 pounds of N plus K₂O per acre. On irrigated sandy soils reduce N to 10 to 20 pounds per acre and apply in a band of starter fertilizer. On sandy soils, broadcast 30 pounds or band 15 pounds of sulfur per acre.

Sidedress with 30 to 60 pounds N per acre when plants are 5 to 10 inches tall. On irrigated sandy soils, apply two sidedressings of approximately 40 pounds N per acre each:

one when 4 to 5 inches tall (4th to 5th leaf), and the other at 10 inches tall (10th to 12th leaf).

Reduce the amount of fertilizer N applied by the value of N credits from green manures, legume crops grown in the previous year, compost and animal manures, and soils with more than 3% organic matter. The total amount of N from fertilizer (including starter) and other credits should be 100 to 120 pounds per acre.

Harvesting

Sweet corn is harvested when the kernels plump up and flavor is good. Normally sweet corn will be ready to harvest 18-21 days after 50% of the plants have. Sugary and sugar-enhanced varieties should be harvested promptly when they are ready to reduce starchy buildup in the kernels. Synergistic, supersweet and augmented supersweet varieties can be harvested over a slightly longer period. Hand picking is common, but there are single-row and multi-row mechanical harvester options. With mechanical harvest hand labor is delayed, not fully eliminated, since sorting is required to cull out unmarketable crop that the mechanical harvester has picked.

Sweet Corn - Diseases

Anthracnose of Corn - Colletotrichum Fungus

Non-Pesticide

Rotate to non-host crops for 1-3 years. Varieties with resistance are available. Prompt destruction of the finished crop with tillage to rapidly breakdown tissue is an important method to prevent disease build-up.

Pesticide

Approach (picoxystrobin) | 3-12 fl. oz. per acre. Use 3-6 fl. oz rate for single application for early disease control between V4 and V7. Use the 6-12 fl. oz. rate for repeated applications for continued season long control between VT and R3. REI: 12-hour. PHI: 7-day. FRAC 11.

azoxystrobin products (azoxystrobin) | Several formulations are labeled at various rates (Acadia LFC, AZteroid FC 3.3, Quadris). Use 3.3 lb. a.i. per gallon formulations at 3.9-9.7 fl. oz. per acre. Use 2 lb. a.i. per gallon formulations at 6.0-15.5 fl. oz. per acre. Use 1.65 lb. a.i. per gallon formulations at 7.6-19.5 fl. oz. per acre. REI: 4-hour. PHI: 7-day. FRAC 11.

Elatus (azoxystrobin, benzovindiflupyr) | 5-7.3 oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11, FRAC 07.

Headline (pyraclostrobin) | 6-12 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11.

Headline AMP (pyraclostrobin, metconazole) | 10-14.4 fl. oz. per acre. REI: 12-hour. PHI: 20-day. FRAC 11, FRAC 03.

Priaxor (flupyroxad, pyraclostrobin) | 4-8 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 07, FRAC 11.

Quilt (azoxystrobin, propiconazole) | 10.5-14.0 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 11, FRAC 03.

Stratego (propiconazole, trifloxystrobin) | 10 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 03, FRAC 11.

Goss' Wilt of Corn - Clavibacter Bacteria

This pathogen primarily infects leaves that have been wounded by wind, sandblasting, hail, and insect feeding. It overwinters on plant residue on the soil surface.

Non-Pesticide

Rotate to non-host crops for at least 1 year. Use disease-free seed and resistant varieties. Control grassy weeds that are also hosts to the pathogen. Prompt destruction of the finished crop with tillage to rapidly breakdown tissue is an important method to prevent disease build-up.

Northern Corn Leaf Blight of Corn - Exserohilum or Helminthosporium Fungus

Non-Pesticide

Rotate to non-host crops for at least 1 year. Varieties with resistance are available. Prompt destruction of the finished crop with tillage to rapidly breakdown tissue is an important method to prevent disease build-up.

Pesticide

Approach (picoxystrobin) | 3-12 fl. oz. per acre. Use 3-6 fl. oz rate for single application for early disease control between V4 and V7. Use the 6-12 fl. oz. rate for repeated applications for continued season long control between VT and R3. REI: 12-hour. PHI: 7-day. FRAC 11.

azoxystrobin products (azoxystrobin) | Several formulations are labeled at various rates (Acadia LFC, AZteroid FC 3.3, Quadris). Use 3.3 lb. a.i. per gallon formulations at 3.9-9.7 fl. oz. per acre. Use 2 lb. a.i. per gallon formulations at 6.0-15.5 fl. oz. per acre. Use 1.65 lb. a.i. per gallon formulations at 7.6-19.5 fl. oz. per acre. REI: 4-hour. PHI: 7-day. FRAC 11.

chlorothalonil products (chlorothalonil) | Several formulations are labeled at various rates (Bravo, Echo, Equus, Initiate). Use 38.5% (Zn) formulations at 1.1-2.75 pt. per acre. Use 54% (720) formulations at 0.75-2.0 pt. per acre. Use 82.5% (WDG) formulations at 0.7-1.8 lb. per acre. Use 90% (DF) formulations at 1.25-1.6 lb. per acre. REI: 12-hour. PHI: 14-day. FRAC M05.

Elatus (azoxystrobin, benzovindiflupyr) | 5-7.3 oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11, FRAC 07.

Headline (pyraclostrobin) | 6-12 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11.

Headline AMP (pyraclostrobin, metconazole) | 10-14.4 fl. oz. per acre. REI: 12-hour. PHI: 20-day. FRAC 11, FRAC 03.

mancozeb products (mancozeb) | Several formulations are labeled at various rates (Dithane, Koverall, Manzate, Penncozeb). Always check the label. Use 37% formulations at 0.8-1.2 qt. per acre. Use 75% and 80% at 1.0-1.5 lb. per acre. REI: 24-hour. PHI: 7-day. FRAC M03.

Priaxor (fluxapyroxad, pyraclostrobin) | 4-8 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 07, FRAC 11.

propiconazole products (propiconazole) | 2-4 fl. oz. per acre. PropiMax EC and Tilt are labeled. REI: 12-hour. PHI: 14-day. FRAC 03.

Quilt (azoxystrobin, propiconazole) | 7-14 fl. oz. per acre. Use lower rate for early season applications and increase rate with disease pressure. REI: 12-hour. PHI: 14-day. FRAC 11, FRAC 03.

Stratego (propiconazole, trifloxystrobin) | 10 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 03, FRAC 11.

tebuconazole products (tebuconazole) | 4-6 fl. oz. per acre. There are many brand names (Monsoon, Onset, Vibe) with 3.6 lbs. a.i. per gallon that use the same rate. In sweet corn, REI is longer than the PHI, and pickers may require PPE if timing is not planned. REI: 12-hour to 18-day. PHI: 7-day. FRAC 03.

Northern Corn Leaf Spot of Corn - Bipolaris Fungus

Non-Pesticide

Rotate to non-host crops for at least 1 year. Varieties with resistance are available. Prompt destruction of the finished crop with tillage to rapidly breakdown tissue is an important method to prevent disease build-up.

Pesticide

Approach (picoxystrobin) | 3-12 fl. oz. per acre. Use 3-6 fl. oz rate for single application for early disease control between V4 and V7. Use the 6-12 fl. oz. rate for repeated applications for continued season long control between VT and R3. REI: 12-hour. PHI: 7-day. FRAC 11.

azoxystrobin products (azoxystrobin) | Several formulations are labeled at various rates (Acadia LFC, AZteroid FC 3.3, Quadris). Use 3.3 lb. a.i. per gallon formulations at 3.9-9.7 fl. oz. per acre. Use 2 lb. a.i. per gallon formulations at 6.0-15.5 fl. oz. per acre. Use 1.65 lb. a.i. per gallon formulations at 7.6-19.5 fl. oz. per acre. REI: 4-hour. PHI: 7-day. FRAC 11.

chlorothalonil products (chlorothalonil) | Several formulations are labeled at various rates (Bravo, Echo, Equus, Initiate). Use 38.5% (Zn) formulations at 1.1-2.75 pt. per acre. Use 54% (720) formulations at 0.75-2.0 pt. per acre. Use 82.5% (WDG) formulations at 0.7-1.8 lb. per acre. Use 90% (DF) formulations at 1.25-1.6 lb. per acre. REI: 12-hour. PHI: 14-day. FRAC M05.

Elatus (azoxystrobin, benzovindiflupyr) | 5-7.3 oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11, FRAC 07.

Headline (pyraclostrobin) | 6-12 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11.

Headline AMP (pyraclostrobin, metconazole) | 10-14.4 fl. oz. per acre. REI: 12-hour. PHI: 20-day. FRAC 11, FRAC 03.

mancozeb products (mancozeb) | Several formulations are labeled at various rates (Dithane, Koverall, Manzate, Penncozeb). Always check the label. Use 37% formulations at 0.8-1.2 qt. per acre. Use 75% and 80% at 1.0-1.5 lb. per acre. REI: 24-hour. PHI: 7-day. FRAC M03.

Priaxor (fluxapyroxad, pyraclostrobin) | 4-8 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 07, FRAC 11.

propiconazole products (propiconazole) | 2-4 fl. oz. per acre. PropiMax EC and Tilt are labeled. REI: 12-hour. PHI: 14-day. FRAC 03.

Quilt (azoxystrobin, propiconazole) | 7-14 fl. oz. per acre. Use lower rate for early season applications and increase rate with disease pressure. REI: 12-hour. PHI: 14-day. FRAC 11, FRAC 03.

Stratego (propiconazole, trifloxystrobin) | 10 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 03, FRAC 11.

tebuconazole products (tebuconazole) | 4-6 fl. oz. per acre. There are many brand names (Monsoon, Onset, Vibe) with 3.6 lbs. a.i. per gallon that use the same rate. In sweet corn, REI is longer than the PHI, and pickers may require PPE if timing is not planned. REI: 12-hour to 18-day. PHI: 7-day. FRAC 03.

Rust of Multiple Crops - Puccinia Fungus

This pathogen can severely reduce yields of grain corn late in the season through defoliation of the plant, but because sweet corn is harvested long before maturity they are less impacted. If rust shows up before tassel then it is worth spraying for in sweet corn to keep healthy leaves until harvest.

Non-Pesticide

Plant resistant hybrids. Sweet corn hybrid resistance to rust will depend on the hybrid's particular Rp-resistant gene, its general (background) resistance, and the race(s) of the rust prevalent in the planting.

Pesticide

Approach (picoxystrobin) | 3-12 fl. oz. per acre. Use 3-6 fl. oz rate for single application for early disease control between V4 and V7. Use the 6-12 fl. oz. rate for repeated applications for continued season long control between VT and R3. REI: 12-hour. PHI: 7-day. FRAC 11.

azoxystrobin products (azoxystrobin) | Several formulations are labeled at various rates (Acadia LFC, AZteroid FC 3.3, Quadris). Use 3.3 lb. a.i. per gallon formulations at 3.9-9.7 fl. oz. per acre. Use 2 lb. a.i. per gallon formulations at 6.0-15.5 fl. oz. per acre. Use 1.65 lb. a.i. per gallon formulations at 7.6-19.5 fl. oz. per acre. REI: 4-hour. PHI: 7-day. FRAC 11.

chlorothalonil products (chlorothalonil) | Several formulations are labeled at various rates (Bravo, Echo, Equus, Initiate). Use 38.5% (Zn) formulations at 1.1-2.75 pt. per acre. Use 54% (720) formulations at 0.75-2.0 pt. per acre. Use 82.5% (WDG) formulations at 0.7-1.8 lb. per acre. Use 90% (DF) formulations at 1.25-1.6 lb. per acre. REI: 12-hour. PHI: 14-day. FRAC M05.

Elatus (azoxystrobin, benzovindiflupyr) | 5-7.3 oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11, FRAC 07.

Headline (pyraclostrobin) | 6-12 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11.

Headline AMP (pyraclostrobin, metconazole) | 10-14.4 fl. oz. per acre. REI: 12-hour. PHI: 20-day. FRAC 11, FRAC 03.

mancozeb products (mancozeb) | Several formulations are labeled at various rates (Dithane, Koverall, Manzate, Penncozeb). Always check the label. Use 37% formulations at 0.8-1.2 qt. per acre. Use 75% and 80% at 1.0-1.5 lb. per acre. REI: 24-hour. PHI: 7-day. FRAC M03.

Priaxor (fluxapyroxad, pyraclostrobin) | 4-8 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 07, FRAC 11.

propiconazole products (propiconazole) | 2-4 fl. oz. per acre. PropiMax EC and Tilt are labeled. REI: 12-hour. PHI: 14-day. FRAC 03.

Quilt (azoxystrobin, propiconazole) | 10.5-14.0 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 11, FRAC 03.

Stratego (propiconazole, trifloxystrobin) | 10 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 03, FRAC 11.

tebuconazole products (tebuconazole) | 4-6 fl. oz. per acre. There are many brand names (Monsoon, Onset, Vibe) with 3.6 lbs. a.i. per gallon that use the same rate. In sweet corn, REI is longer than the PHI, and pickers may require PPE if timing is not planned. REI: 12-hour to 18-day. PHI: 7-day. FRAC 03.

Smut of Corn - Ustilago Fungus

This pathogen is common at low levels, but it can be worse when roots and stalks are damaged from close cultivation that nips the roots, wind lodging and wind sandblasting, or in times of drought stress. When under drought stress, tasseling and silking do not line up. Tassels come first and silks last longer than usual because they are not getting pollinated. This provides an entry for the fungus into the ears. Flowering patterns and response to environmental stress are unique to each variety. Planting field position in relation to prevailing winds, timing and variety are likely factors for disease occurrence.

Non-Pesticide

Some hybrids tend to have fewer infections. Use past experience to choose successful hybrids. Avoid mechanical damage to corn plant. Avoid plant stresses that affect pollen production and silk emergence.

Southern Corn Leaf Blight of Corn - Bipolaris Fungus

Non-Pesticide

Rotate to non-host crops for at least 1 year. Varieties with resistance are available. Prompt destruction of the finished crop with tillage to rapidly breakdown tissue is an important method to prevent disease build-up.

Pesticide

Approach (picoxystrobin) | 3-12 fl. oz. per acre. Use 3-6 fl. oz rate for single application for early disease control between V4 and V7. Use the 6-12 fl. oz. rate for repeated applications for continued season long control between VT and R3. REI: 12-hour. PHI: 7-day. FRAC 11.

azoxystrobin products (azoxystrobin) | Several formulations are labeled at various rates (Acadia LFC, AZteroid FC 3.3, Quadris). Use 3.3 lb. a.i. per gallon formulations at 3.9-9.7 fl. oz. per acre. Use 2 lb. a.i. per gallon formulations at 6.0-15.5 fl. oz. per acre. Use 1.65 lb. a.i. per gallon formulations at 7.6-19.5 fl. oz. per acre. REI: 4-hour. PHI: 7-day. FRAC 11.

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Elatus (azoxystrobin, benzovindiflupyr) | 5-7.3 oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11, FRAC 07.

Headline (pyraclostrobin) | 6-12 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 11.

Headline AMP (pyraclostrobin, metconazole) | 10-14.4 fl. oz. per acre. REI: 12-hour. PHI: 20-day. FRAC 11, FRAC 03.

mancozeb products (mancozeb) | Several formulations are labeled at various rates (Dithane, Koverall, Manzate, Penncozeb). Always check the label. Use 37% formulations at 0.8-1.2 qt. per acre. Use 75% and 80% at 1.0-1.5 lb. per acre. REI: 24-hour. PHI: 7-day. FRAC M03.

Priaxor (fluxapyroxad, pyraclostrobin) | 4-8 fl. oz. per acre. REI: 12-hour. PHI: 7-day. FRAC 07, FRAC 11.

propiconazole products (propiconazole) | 2-4 fl. oz. per acre. PropiMax EC and Tilt are labeled. REI: 12-hour. PHI: 14-day. FRAC 03.

Quilt (azoxystrobin, propiconazole) | 7-14 fl. oz. per acre. Use lower rate for early season applications and increase rate with disease pressure. REI: 12-hour. PHI: 14-day. FRAC 11, FRAC 03.

Stratego (propiconazole, trifloxystrobin) | 10 fl. oz. per acre. REI: 12-hour. PHI: 14-day. FRAC 03, FRAC 11.

tebuconazole products (tebuconazole) | 4-6 fl. oz. per acre. There are many brand names (Monsoon, Onset, Vibe) with 3.6 lbs. a.i. per gallon that use the same rate. In sweet corn, REI is longer than the PHI, and pickers may require PPE if timing is not planned. REI: 12-hour to 18-day. PHI: 7-day. FRAC 03.

Stewart's Wilt of Corn - Pantoea Bacteria

This bacterial disease is spread by overwintered flea beetles in the spring time. If the plants become infected at the seedling stage, they become severely stunted and have white striping on the leaves and internal browning of stem tissue. Infections after the seedling stage will cause leaf blight and are generally not as economically severe as seedling infections. Early infection of seedling plants can lead to total yield loss in some plantings. Severity of the disease is directly related to overwintering survival of the flea beetle, and beetle survival depends directly on temperature. See insect section.

Non-Pesticide

Plant wilt-resistant, or partially resistant hybrids. Monitor overwintering flea beetle population.

Pesticide

Insecticides | Use an insecticide or seed treatment to control the flea beetles that transmit Stewart's wilt. Insecticide treatments are more likely to be necessary in season following a mild winter and when using susceptible varieties.

Viruses of Multiple Crops - Multiple Pathogens

Non-Pesticide

Virus diseases include maize dwarf mosaic, chlorotic dwarf, wheat streak mosaic. Plant resistant or partially resistant varieties. Control Johnson grass and volunteer wheat.

Sweet Corn - Insects

Aphids

Non-Pesticide

Heavy corn leaf aphid infestations are often limited to early-season plantings that develop on late whorl to early tassel sweet corn. During this time, several beneficial organisms (including lady beetles, minute pirate bugs, and parasitoids) will keep those infestations in check.

Pesticide

Asana XL (esfenvalerate) | 2.9-9.6 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Assail 30SG (acetamiprid) | Use 30SG formulations at 2.1-2.9 oz. per acre. Use 70WP formulations at 0.9-1.2 oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 04A.

Capture LFR (bifenthrin) | 2.8-8.5 fl. oz. per acre. Apply as a foliar spray. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Lannate LV (methomyl) | 0.75 - 1.5 pts. per acre. Some varieties are susceptible to methomyl injury; determine crop safety before full scale spraying. REI: 48-hour. PHI: 0-day for ears, 3-day for forage. IRAC 01A. *RUP*.

Mustang Maxx (zeta-cypermethrin) | 2.8-4.0 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 12-hour. PHI: 3-day. IRAC 03A. *RUP*.

Caterpillars

All moths can be monitored with pheromone traps. When moths are being caught in traps, it means they are mating and laying eggs in the crop.

European corn borer (ECB) eggs are laid on leaves, usually on the undersides, in the region of the ear. Larvae feed on the leaves and later may migrate to the ears (if present). Corn borers can be controlled by spraying during the late whorl, tasseling, and silking stages. The migrating larvae should contact a lethal dose of insecticide while moving to the ear zone.

Western bean cutworm (WBC) eggs are laid on the top surface of leaves on corn that is in pre-tassel. They have one generation per year from mid-July to early August. Sweet corn that has well-developed ears during flight is less likely to be infested; however, tillers (suckers) that have not tasseled may be attractive for egg-laying.

Corn earworm (CEW) eggs are laid directly on green silks. The larvae that hatch from those eggs will follow the silks down into the tips of the ears. Corn earworms must be controlled by directing sprays at the silks, such as using drop nozzles, so larvae will immediately contact the insecticide after hatching, prior to being protected once they enter the ear.

Fall armyworm (FAW) eggs are laid on corn leaves, and newly emerged larvae consume large quantities of foliage as they rapidly grow. FAW will feed on all stages and parts of the plant, but the pre-tassel whorl is preferred. Caterpillars can directly penetrate husks and damage ears.

These caterpillars are likely to co-occur in a sweet corn field during some parts of the year. Do not treat separately for European corn borer and corn earworm.

ECB: treatment is justified when more than 10 moths per night are caught in traps while corn is in late whorl stage or when 20% or more of the plants show larval feeding. One application during the late whorl stage, followed by additional treatments every five days up until seven days of harvest, usually provides adequate control.

WBC: treatment is justified when moths are being caught in pheromone traps or larval damage is present when corn is in late whorl stage.

CEW: treatment is justified when moths are being caught in traps while green silks are present. In general, the higher the moth catches, the shorter the interval between sprays. If fewer than 5 moths are being caught per night, a five-day spray interval should be adequate. As moth catches approach 50 to 100 per night, a two- to three-day spray interval would be more appropriate. If no field corn in the area is silking, moths will lay eggs primarily on silking sweet corn. In this situation, use a threshold of 1-3 moths per trap per night. Stop treating for corn earworms when 90% of the silks are brown.

FAW: treatment is justified when moths are being caught in pheromone traps or larval damage is present when corn is in late whorl stage.

Pesticide

Asana XL (esfenvalerate) | 2.9-9.6 fl. oz. per acre. Caterpillars include cutworms, corn borers, and earworms. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

Baythroid XL (beta-cyfluthrin) | 0.8-2.8 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 12-hour. PHI: 0-day. IRAC 03A. *RUP.*

Besiege (chlorantraniliprole, lambda-cyhalothrin) | 6-10 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 24-hour. PHI: 1-day. IRAC 28, IRAC 03A. *RUP.*

Brigade 2EC (bifenthrin) | For armyworms, and cutworms use 2EC formulations at 0.3 fl. oz. per 1,000 linear ft. of row in a minimum of 3 gals. of finished spray as a 5- to 7-inch band over an open seed furrow (T-band). For armyworms, corn borers, cutworms, and earworms, use 2EC formulations as a foliar application at 2.1-6.4 fl. oz. per acre. Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 30-day for soil applications, 1-day for foliar applications. IRAC 03A. *RUP.*

Bt (*Bacillus thuringiensis*) products for caterpillars (*Bacillus thuringiensis* aizawai strain ABTS-1857, *Bacillus thuringiensis* aizawai strain GC-91, *Bacillus thuringiensis* kurstaki strain ABTS-351, *Bacillus thuringiensis* kurstaki strain EVB-113-19, *Bacillus thuringiensis* kurstaki strain SA-11) | For earworms. Various Bt products (Agree, Biobit, Dipel, Javelin, etc.) are available for control of young caterpillars however, different Bt products can vary in the effectiveness against caterpillars. Apply early and often directly to silks and mix with horticultural oil. REI: 4-hour. PHI: 0-day. IRAC 11A.

Bt (*Bacillus thuringiensis*) varieties (Cry1Ab, Cry2Ab, Cry1A.105, Vip3A) | There are four Bt proteins bred into sweet corn for control of armyworms, corn borers, earworms, and cutworms. Cry1Ab is effective on European corn borer but has never been effective on western bean cutworm. It is moderately effective on fall armyworm and corn earworm. Field corn with this single trait is not marketed for control of corn earworm or fall armyworm, but sweet corn still is. To slow down counter-resistance in pest populations the field corn market is moving away from single-trait varieties. Syngenta Attribute I Series sweet corn has this trait. Cry2Ab2 is always paired with Cry1A.105 and is effective on European corn borer and fall armyworm. It is moderately effective on western bean cutworm, and in some places is no longer effective on corn earworm. There are reports of corn earworm resistance in North Carolina field corn, and sweet corn in Maryland. Seminis Performance Series has these traits. Vip3A is the only effective protein on corn earworm, western bean cutworm, and fall armyworm. Syngenta Attribute II and Attribute Plus series corn has both Vip3A and Cry1Ab traits. IRAC 11A.

Capture LFR (bifenthrin) | For armyworms, corn borers, cutworms, and earworms. Apply to soil as pre-plant or pre-emergent application at 0.2-0.78 fl. oz. per acre per 1,000 linear ft. row at planting, or as a foliar spray at 2.8-8.5 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

Coragen (chlorantraniliprole) | 3.5-7.5 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 4-hour. PHI: 1-day. IRAC 28.

Entrust SC (spinosad) | For armyworms, corn borers, cutworms, and earworms. Use 2SC formulations at 1.5-6.0 fl. oz. per acre. Use 80WP formulations at 0.5-2.0 oz. per acre. Observe resistance management restrictions. REI: 4-hour. PHI: 1-day. IRAC 05. *OMRI-listed.*

Ethos XB (bifenthrin, *Bacillus amyloliquefaciens* strain D-747) | 0.2 to 0.98 fl. oz per 1,000 linear feet of row . Armyworm and cutworm caterpillars. Apply as a 5 to 7 inch band over an open furrow, or in-furrow with the seed. REI: 12-hour. IRAC 03A, FRAC 44. *RUP.*

Force CS (tefluthrin) | For cutworms. Apply Force Evo (2.1CS) at 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force 6.5G at 1.8-2.3 oz. per 1,000 linear ft. of row. Apply Force 3G at 3-4 oz. per 1,000 linear ft. of row. Apply Force 10G HL at 1.25-1.5 oz. per 1,000 linear ft. or row. Apply at planting. Do not exceed 1 application per crop. REI: 48-hour. IRAC 03A. *RUP.*

Helicovex (*Helicoverpa armigera* nucleopolyhedrovirus strain BV-0003) | 0.5-2.5 fl. oz. per acre. For corn earworm only. Apply 0.5-1.5 fl. oz. per acre every 3 days during silking. REI: 4-hour. PHI: 0-day. IRAC 31. *OMRI-listed.*

Lannate LV (methomyl) | 0.75 - 1.5 pts. per acre. For armyworms, corn borers, cutworms, and earworms. Has ovidical properties. Some varieties are susceptible to methomyl injury, determine crop safety before full scale spraying. REI: 48-hour. PHI: 0-day for ears, 3-day for forage. IRAC 01A. *RUP.*

Mustang Maxx (zeta-cypermethrin) | 2.8-4.0 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 12-hour. PHI: 3-day. IRAC 03A. *RUP.*

Perm-Up 25DF (permethrin) | For armyworms, corn borers, cutworms, and earworms. Use 25W, 25WP, and 25DF formulations at 6.4-12.8 oz. per acre. Use 3.2EC formulations at 4-8 fl. oz. per acre. Control is poor when temperatures are above 90 F. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

Radiant 1SC (spinetoram) | 3-6 fl. oz. per acre. For armyworms, corn borers, Western bean cutworms, and earworms. REI: 4-hour. PHI: 1-day for ears. 3-day for forage. IRAC 05.

Sevin XLR Plus (carbaryl) | 2 qts. per acre. For armyworms, corn borers, earworms and Western bean cutworm only. Machine harvest only. REI: 12-hour. PHI: 2-day for ears. 14-day for forage. IRAC 01A.

Warrior II (lambda-cyhalothrin) | For armyworms, corn borers, cutworms, and earworms apply foliar applications at 1.28-1.92 fl. oz. per acre. For cutworm caterpillars and corn rootworm larvae apply a soil application at 0.33 fl. oz. per 1,000 ft. of row. Apply in furrow or as a 5- to 7-inch band. REI: 24-hour. PHI: 1-day. IRAC 03A. *RUP.*

Corn Rootworm Beetles

If few or no rootworm beetles were present in the field in the previous year, or you grew sweet corn in a field the previous year and followed a regular spray schedule during silking, there is little chance of a damaging infestation.

Corn rootworm adults may prevent pollination by feeding on green silks. Treat when silks are being clipped.

Pesticide

Assail 30SG (acetamiprid) | Use 30SG formulations at 4.0-5.3 oz. per acre. Use 70WP formulations at 1.7-2.3 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

Baythroid XL (beta-cyfluthrin) | 0.8-2.8 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 12-hour. PHI: 0-day. IRAC 03A. *RUP.*

Besiege (chlorantraniliprole, lambda-cyhalothrin) | 6-10 fl. oz. per acre. REI: 24-hour. PHI: 1-day. IRAC 28, IRAC 03A. *RUP.*

Brigade 2EC (bifenthrin) | 2.1-6.4 fl. oz. per acre. Use 2EC formulations as a foliar application at 2.1-6.4 fl. oz. per acre. Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP.*

Mustang Maxx (zeta-cypermethrin) | 2.24-4.0 fl. oz. per acre. REI: 12-hour. PHI: 3-day. IRAC 03A. *RUP.*

Perm-Up 25DF (permethrin) | Use 25W, 25WP, and 25DF formulations at 6.4-12.8 oz. per acre. Use 3.2EC formulations at 4-8 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Corn Rootworm Larvae

If few or no rootworm beetles were present in the field in the previous year, or you grew sweet corn in a field the previous year and followed a regular spray schedule during silking, there is little chance of a damaging infestation.

Corn rootworm adults may prevent pollination by feeding on green silks. Treat when silks are being clipped.

Pesticide

Aztec 4.67G (tebupirimphos, cyfluthrin) | Use 4.67G formulations at 3.0 oz. per 1,000 linear ft. of row, or HC formulations at 1.5 oz. per 1,000 ft. of row. Apply in furrow in a 7-inch band over the row and behind the planter shoe in front of the press wheel. Incorporate with tines and drag chains. REI: 48-hour. IRAC 01B, IRAC 03A. *RUP*.

Brigade 2EC (bifenthrin) | Use 2EC formulations at 0.3 fl. oz. per 1,000 linear ft. of row in a minimum of 3 gals. of finished spray as a 5- to 7-inch band over an open seed furrow (T-band). Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 30-day. IRAC 03A. *RUP*.

Capture LFR (bifenthrin) | 0.39-0.98 fl. oz. per 1,000 linear ft. of row. Apply at planting in furrow or a T-band. REI: 12-hour. IRAC 03A. *RUP*.

Counter 20G (terbufos) | 4.5-6.0 oz. per 1,000 linear ft. or row. Available as Lock 'N Load, SmartBox, and SmartCartridge. REI: 48-hour. IRAC 01B. *RUP*.

Ethos XB (bifenthrin, *Bacillus amyloliquefaciens* strain D-747) | 0.49 to 0.98 fl. oz. per 1,000 square feet Apply as a 5 to 7 inch band over an open furrow, or in-furrow with the seed. REI: 12-hour. IRAC 03A, FRAC 44. *RUP*.

Force CS (tefluthrin) | 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force Evo (2.1CS) at 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force 6.5G at 1.8-2.3 oz. per 1,000 linear ft. of row. Apply Force 3G at 4-5 oz. per 1,000 liner ft. of row. Apply Force 10G at 1.25-1.5 oz. per 1,000 linear ft. or row. Apply at planting. Do not exceed 1 application per crop. REI: 48-hour. IRAC 03A. *RUP*.

Mocap 15G (ethoprop) | 8 oz. per 1,000 linear ft. of row. Apply in band over closed seed furrow and incorporate with tines or drag chains. Do not place in the furrow or in direct contact with the seed. Do not exceed 1 application per crop per year. REI: 48-hour. IRAC 01B. *RUP*.

Thimet 20G (phorate) | 4.5-6 oz. per 1,000 linear ft. of row. Place in a 7-inch band over the row behind the planter shoe and in front of or behind the press wheel and lightly incorporate. REI: 48-hour. IRAC 01B. *RUP*.

Warrior II (lambda-cyhalothrin) | For armyworms, corn borers, cutworms, and earworms apply foliar applications at 1.28-1.92 fl. oz. per acre. For cutworm caterpillars and corn rootworm larvae apply a soil application at 0.33 fl. oz. per 1,000 ft. of row. Apply in furrow or as a 5- to 7-inch band. REI: 24-hour. PHI: 1-day. IRAC 03A. *RUP*.

Flea Beetles

Non-Pesticide

Plant varieties that are resistant to Stewart's wilt, which is vectored by flea beetles.

Pesticide

Asana XL (esfenvalerate) | 2.9-9.6 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Assail 30SG (acetamiprid) | Use 30SG formulations at 4.0-5.3 oz. per acre. Use 70WP formulations at 1.7-2.3 oz. per acre. REI: 12-hour. PHI: 7-day. IRAC 04A.

Baythroid XL (beta-cyfluthrin) | 0.8-2.8 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 12-hour. PHI: 0-day. IRAC 03A. *RUP*.

Besiege (chlorantraniliprole, lambda-cyhalothrin) | 6-10 fl. oz. per acre. REI: 24-hour. PHI: 1-day. IRAC 28, IRAC 03A. *RUP*.

Brigade 2EC (bifenthrin) | 2.1-6.4 fl. oz. per acre. Use 2EC formulations as a foliar application at 2.1-6.4 fl. oz. per acre. Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Capture LFR (bifenthrin) | 2.8-8.5 fl. oz. per acre. Apply as a foliar spray. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Lannate LV (methomyl) | 0.75 - 1.5 pts. per acre. Some varieties are susceptible to methomyl injury; determine crop safety before full scale spraying. REI: 48-hour. PHI: 0-day for ears, 3-day for forage. IRAC 01A. *RUP*.

Mustang Maxx (zeta-cypermethrin) | 2.24-4.0 fl. oz. per acre. REI: 12-hour. PHI: 3-day. IRAC 03A. *RUP*.

Perm-Up 25DF (permethrin) | Use 25W, 25WP, and 25DF formulations at 6.4-12.8 oz. per acre. Use 3.2EC formulations at 4-8 fl. oz. per acre. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Seed treatments for insects (various ingredients) | Rates vary by product, and are often multiple premixed ingredients. Select seed treatments with ingredients such as clothianidin (Poncho), thiamethoxam (Cruiser 5FS), or imidacloprid (Gaucho).

Sevin XLR Plus (carbaryl) | 1-2 qts. per acre. Machine harvest only. REI: 12-hour. PHI: 2-day. IRAC 01A.

Thimet 20G (phorate) | 4.5-6 oz. per 1,000 linear ft. of row. Place in a 7-inch band over the row behind the planter shoe and in front of or behind the press wheel and lightly incorporate. REI: 48-hour. IRAC 01B. *RUP*.

Warrior II (lambda-cyhalothrin) | 1.28-1.92 fl. oz. per acre. REI: 24-hour. PHI: 1-day. IRAC 03A. *RUP*.

Seed and Root Maggots

Non-Pesticide

Plant after the peak flight and egg-laying window of the first generation of flies looking to lay eggs around 360 GDD base 40. Handle seeds carefully to prevent cracking. Plow winter vegetation under early in the spring and thoroughly cover to limit attractiveness of rotting vegetation to the first generation of flies to lay eggs on.

Pesticide

Aztec 4.67G (tebupirimphos, cyfluthrin) | Use 4.67G formulations at 3.0 oz. per 1,000 linear ft. of row, or HC formulations at 1.5 oz. per 1,000 ft. of row. Apply in furrow in a 7-inch band over the row and behind the planter shoe in front of the press wheel. Incorporate with tines and drag chains. REI: 48-hour. IRAC 01B, IRAC 03A. *RUP*.

Brigade 2EC (bifenthrin) | Use 2EC formulations at 0.3 fl. oz. per 1,000 linear ft. of row in a minimum of 3 gals. of finished spray as a 5- to 7-inch band over an open seed furrow (T-band). Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 30-day. IRAC 03A. *RUP*.

Capture LFR (bifenthrin) | 0.2-0.78 fl. oz. per 1,000 linear bed ft. of row. Apply at planting in furrow or a T-band. REI: 12-hour. IRAC 03A. *RUP*.

Counter 20G (terbufos) | 4.5-6.0 oz. per 1,000 linear ft. or row. Available as Lock 'N Load, SmartBox, and SmartCartridge. REI: 48-hour. IRAC 01B. *RUP*.

Ethos XB (bifenthrin, *Bacillus amyloliquefaciens* strain D-747) | 0.2 to 0.98 fl. oz per 1,000 linear feet of row . Armyworm and cutworm caterpillars. Apply as a 5 to 7 inch band over an open furrow, or in-furrow with the seed. REI: 12-hour. IRAC 03A, FRAC 44. *RUP*.

Force CS (tefluthrin) | 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force Evo (2.1CS) at 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force 6.5G at 1.8-2.3 oz. per 1,000 linear ft. of row. Apply Force 3G at 4-5 oz. per 1,000 liner ft. of row. Apply Force 10G at 1.25-1.5 oz. per 1,000 linear ft. or row. Apply at planting. Do not exceed 1 application per crop. REI: 48-hour. IRAC 03A. *RUP*.

Seed treatments for insects (various ingredients) | Rates vary by product, and are often multiple premixed ingredients. Select seed treatments with ingredients such as clothianidin (Poncho), thiamethoxam (Cruiser 5FS), or imidacloprid (Gaucho).

Thimet 20G (phorate) | 4.5-6 oz. per 1,000 linear ft. of row. Place in a 7-inch band over the row behind the planter shoe and in front of or behind the press wheel and lightly incorporate. REI: 48-hour. IRAC 01B. *RUP*.

Seedcorn Beetles

Pesticide

Aztec 4.67G (tebupirimphos, cyfluthrin) | Use 4.67G formulations at 3.0 oz. per 1,000 linear ft. of row, or HC formulations at 1.5 oz. per 1,000 ft. of row. Apply in furrow in a 7-inch band over the row and behind the planter shoe in front of the press wheel. Incorporate with tines and drag chains. REI: 48-hour. IRAC 01B, IRAC 03A. *RUP*.

Brigade 2EC (bifenthrin) | Use 2EC formulations at 0.3 fl. oz. per 1,000 linear ft. of row in a minimum of 3 gals. of finished spray as a 5- to 7-inch band over an open seed furrow (T-band). Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 30-day. IRAC 03A. *RUP*.

Capture LFR (bifenthrin) | 0.2-0.78 fl. oz. per 1,000 linear bed ft. of row. Apply at planting in furrow or a T-band. REI: 12-hour. IRAC 03A. *RUP*.

Counter 20G (terbufos) | 4.5-6.0 oz. per 1,000 linear ft. or row. Available as Lock 'N Load, SmartBox, and SmartCartridge. REI: 48-hour. IRAC 01B. *RUP*.

Force CS (tefluthrin) | 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force Evo (2.1CS) at 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force 6.5G at 1.8-2.3 oz. per 1,000 linear ft. of row. Apply Force 3G at 4-5 oz. per 1,000 liner ft. of row. Apply Force 10G at 1.25-1.5 oz. per 1,000 linear ft. or row. Apply at planting. Do not exceed 1 application per crop. REI: 48-hour. IRAC 03A. *RUP*.

Seed treatments for insects (various ingredients) | Rates vary by product, and are often multiple premixed ingredients. Select seed treatments with ingredients such as clothianidin (Poncho), thiamethoxam (Cruiser 5FS), or imidacloprid (Gaucho).

Thimet 20G (phorate) | 4.5-6 oz. per 1,000 linear ft. of row. Place in a 7-inch band over the row behind the planter shoe and in front of or behind the press wheel and lightly incorporate. REI: 48-hour. IRAC 01B. *RUP*.

Stink Bugs

Pesticide

Baythroid XL (beta-cyfluthrin) | 0.8-2.8 fl. oz. per acre. For armyworms, corn borers, cutworms, and earworms. REI: 12-hour. PHI: 0-day. IRAC 03A. *RUP*.

Besiege (chlorantraniliprole, lambda-cyhalothrin) | 6-10 fl. oz. per acre. REI: 24-hour. PHI: 1-day. IRAC 28, IRAC 03A. *RUP*.

Brigade 2EC (bifenthrin) | 2.1-6.4 fl. oz. per acre. Use 2EC formulations as a foliar application at 2.1-6.4 fl. oz. per acre. Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Capture LFR (bifenthrin) | 2.8-8.5 fl. oz. per acre. Apply as a foliar spray. REI: 12-hour. PHI: 1-day. IRAC 03A. *RUP*.

Hero (bifenthrin, zeta-cypermethrin) | 4.0-10.3 fl. oz. per acre. Do not exceed 27.39 fl. oz. per acre per season. REI: 12-hour. PHI: 3-day. IRAC 03A. *RUP*.

Lannate LV (methomyl) | 1.5 pts. per acre. Some varieties are susceptible to methomyl injury, determine crop safety before full scale spraying. REI: 48-hour. PHI: 0-day for ears, 3-day for forage. IRAC 01A. *RUP*.

Warrior II (lambda-cyhalothrin) | 1.28-1.92 fl. oz. per acre. REI: 24-hour. PHI: 1-day. IRAC 03A. *RUP*.

Wireworms

Pesticide

Aztec 4.67G (tebupirimphos, cyfluthrin) | Use 4.67G formulations at 3.0 oz. per 1,000 linear ft. of row, or HC formulations at 1.5 oz. per 1,000 ft. of row. Apply in furrow in a 7-inch band over the row and behind the planter shoe in front of the press wheel. Incorporate with tines and drag chains. REI: 48-hour. IRAC 01B, IRAC 03A. *RUP*.

Brigade 2EC (bifenthrin) | Use 2EC formulations at 0.3 fl. oz. per 1,000 linear ft. of row in a minimum of 3 gals. of finished spray as a 5- to 7-inch band over an open seed furrow (T-band). Do not use 10DF, 10WP, or 10WSB formulations as they are not labeled for sweet corn. REI: 12-hour. PHI: 30-day. IRAC 03A. *RUP*.

Capture LFR (bifenthrin) | 0.2-0.78 fl. oz. per 1,000 linear bed ft. of row. Apply at planting in furrow or a T-band. REI: 12-hour. IRAC 03A. *RUP*.

Counter 20G (terbufos) | 4.5-6.0 oz. per 1,000 linear ft. or row. Available as Lock 'N Load, SmartBox, and SmartCartridge. REI: 48-hour. IRAC 01B. *RUP*.

Force CS (tefluthrin) | 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force Evo (2.1CS) at 0.46-0.57 fl. oz. per 1,000 linear ft. of row. Apply Force 6.5G at 1.8-2.3 oz. per 1,000 linear ft. of row. Apply Force 3G at 4-5 oz. per 1,000 linear ft. of row. Apply Force 10G at 1.25-1.5 oz. per

1,000 linear ft. or row. Apply at planting. Do not exceed 1 application per crop. REI: 48-hour. IRAC 03A. *RUP*.

Mocap 15G (ethoprop) | 8 oz. per 1,000 linear ft. of row. Apply in band over closed seed furrow and incorporate with tines or drag chains. Do not place in the furrow or in direct contact with the seed. Do not exceed 1 application per crop per year. REI: 48-hour. IRAC 01B. *RUP*.

Seed treatments for insects (various ingredients) | Rates vary by product, and are often multiple premixed ingredients. Select seed treatments with ingredients such as clothianidin (Poncho), thiamethoxam (Cruiser 5FS), or imidacloprid (Gaucho).

Thimet 20G (phorate) | 4.5-6 oz. per 1,000 linear ft. of row. Place in a 7-inch band over the row behind the planter shoe and in front of or behind the press wheel and lightly incorporate. REI: 48-hour. IRAC 01B. *RUP*.

Sweet Corn - Weeds

All Weeds

Weed control methods in sweet corn vary by production system and variety.

For sweet corn that is no-till, direct-seeded into a killed crop (such as after a rye cover crop, or wheat) growers often use a burndown herbicide with a preemergence herbicide. For sweet corn direct-seeded into tilled soil, growers often combine one or more preemergence herbicides at planting with one or more cultivations. Sometimes, growers also apply a preemergence herbicide after the last cultivation to improve control of late-emerging weeds. Small, emerged weeds in both systems can be controlled with selective postemergence herbicides and/or shielded applications of nonselective herbicides.

For early sweet corn direct-seeded under vented plastic row cover, some herbicides are applied before laying the plastic to prevent germinating weeds along with the early corn. But, without good incorporation or irrigation for activation these rows will usually need extensive clean up after the row-cover comes off.

There are sweet corn varieties that are tolerant of glyphosate (RoundUp-Ready), glufosinate (Liberty-Link), or sethoxydim (Poast-Protected) applications over-the-top of the crop. Confirm the herbicide tolerance traits of your sweet corn before making an over-the-top herbicide application.


For specific weeds controlled by each herbicide, check the Relative Effectiveness of Herbicides for Vegetable Crops table.



Rates provided in the recommendations below are given for overall coverage. For a banded treatment, reduce amounts according to the portion of acre treated.



Non-Pesticide



A stale seedbed can be prepared prior to transplanting with flame weeding or very shallow cultivation to control emerged weeds, instead of herbicides. Later plantings of sweet corn lend themselves to this stale seedbed practice because they are often planted after common weeds have emerged in tilled soil. Uniform and close plant spacing in the row promotes rapid canopy cover, and fresh market growers can keep larger between-row spacing clean with between-row cultivation tools for hand-pickers or mechanical harvesters. Rolling cultivators on wide tool-bars offer effective, high-speed between-row cultivation.



Pesticide

2,4-D amine products (2,4-D) POST  | 4L amine formulations at 0.5-1.5 pts. per acre. Use lower rates on annual weeds and higher rates on perennial weeds in the bud stage. Use drop nozzles if corn is more than 8 inches tall. Do not apply to open whorls or from 2 week before tasseling through harvest. Avoid drift onto other vegetable crops. Can cause severe injury to some varieties. REI: 48-hour. PHI: 45-day. HRAC 04.


Accent Q (nicosulfuron) POST   | 0.45-0.90 oz. per acre. Use 1 qt. of COC or 8 fl. oz. of NIS per 25 gals. of spray solution. Apply broadcast or with drop nozzles on corn up to 12 inches tall or up through 5 leaf collars. For corn 12-18 inches tall use drop nozzles. Do not apply to corn more than 18 inches tall or showing 6 leaf collars or more. Cultivars differ in sensitivity to this herbicide; get information on cultivars prior to use. Not recommended for use on corn previously treated with Counter or Thimet insecticides. REI: 4-hour. HRAC 02.



acetochlor + atrazine products (acetochlor, atrazine) PRE   | Apply 2.2-3.4 qts. per acre Breakfree ATZ, 1.6 to 3 qts. per acre Breakfree ATZ Light or Keystone LA, 2.9-3.7 qts. per acre Degree Xtra, 2.5-5 qts. per acre FulTime, 1.8-3.3 qts. per acre Harness Xtra, 1.4-3 qts. per acre Harness Extra 5.6L, or 2.2-3.4 qts. per acre Keystone. Do not apply postemergence. Use lower rates on coarse soils with low organic matter. Apply before planting and incorporate, or apply after planting before sweet corn emerges. Do not apply to light textured soils specified in the label where ground water is at 30 ft. or less. REI: 12-hour. HRAC 15, HRAC 05. *RUP*.



acetochlor products (acetochlor) PRE   | Apply 1.5-3 pts. per acre for Harness 7E, 1.5-3.75 pts. per acre for Surpass 6.4EC, or 2-3 pts. per acre TopNotch 3.2M. Do not apply postemergence. Use lower rates on coarse soils with low organic matter. Apply before planting and incorporate, or apply after planting but before sweet corn emerges. May be mixed with atrazine or simazine. See label for details. Do not apply to light textured soils specified in the label where ground water is at 30 ft. or less. REI: 12-hour. HRAC 15.



Acuron (atrazine, mesotrione, s-metolachlor, bicyclopyrone) PRE   | 2.5 qts. per acre on soil with less than 3% organic matter; 3 qts. per acre on soil with more than 3% organic



matter. For control of most broadleaf and grass weeds. Control may be reduced on soils with >10% organic matter. Do not apply after sweet corn has emerged or severe crop injury may occur. 18-month replant restriction for all crops except corn types (no restrictions); small grains (4 months); dry beans, potato, and soybean (10 months). Contains atrazine so state restrictions for atrazine apply. REI: 24-hour. PHI: 45-day for grazing or forage feeding, 60-day for forage harvest. HRAC 05, HRAC 27, HRAC 15. *RUP*.


Aim EC (carfentrazone) POST  | 0.5-2.0 fl. oz. per acre. Apply to actively growing weeds up to 4 in. tall from prior to planting up to V-14 stage. To reduce injury, use drop nozzles to make applications in corn from V8-V14 stages or apply with a hooded-sprayer to minimize application to the whorl. Add 0.5 pt. NIS per 25 gal. of spray solution (0.25% v/v). Do not exceed 2 fl. oz. per acre per season. For burndown applications, consider tank-mixing with an additional broad-spectrum herbicide such as glyphosate. REI: 12-hour. HRAC 14.


Anthem (pyroxasulfone, fluthiacet-methyl) POST PRE   | 2.5-6.5 fl. oz. per acre. Apply 4-13 fl. oz. of Anthem or 2-6.5 fl. oz. Anthem Maxx per acre. Adjust rate based on soil organic matter and texture, and pre or postemergence use, see label. Preplant surface applications are not recommended for sweet corn. Apply post from crop emergence through V4 growth stage. Add an adjuvant such as a NIS, COC, or MSO for best activity. Before applying to corn, confirm that your line has Anthem tolerance with your seed company or supplier to avoid injury to sensitive lines. Avoid postemergence application when crop foliage is wet or prior to or after a rain because a crop injury can occur. However, the crop will recover. Do not apply if crop is under stress and do not irrigate within 4 hours of a postemergence application. REI: 12-hour. PHI: 40-day. HRAC 15, HRAC 14.


Anthem ATZ (atrazine, pyroxasulfone, fluthiacet-methyl) POST PRE   | 1.5-4 pts. per acre. Adjust rate based on soil organic matter and texture, and pre or postemergence use, see label. Preplant surface applications are not recommended for sweet corn. Apply post from crop emergence through V4 growth stage. Add an adjuvant such as a NIS, COC, or MSO. Before applying to corn, confirm that your line has Anthem selectivity with your seed company or supplier to avoid injury to sensitive lines. Avoid postemergence application when crop foliage is wet or prior to or after a rain because a crop response can occur. However, the crop will recover. Do not apply if crop is under stress and do not irrigate within 4 hours of a postemergence application. REI: 12-hour. PHI: 45-day. HRAC 05, HRAC 15, HRAC 14. *RUP*.


Anthem Flex (carfentrazone, pyroxasulfone) POST PRE   | *Preplant or pre-emergence:* Apply 2.75-7.3 fl. oz. per acre from 14 days preplant to spike stage corn. *After corn emergence:* Apply 2.25-6.4 fl. oz. per acre through the V-4 stage. Use higher rates on finer textured soil and soil with greater organic matter. Within each soil texture-organic matter category, use a higher rate on soils with high-residue or higher weed pressure. See label for maximum rates per application and year based on soil texture. Do not apply on coarse textured soil or medium-textured soil with less than 2% organic matter. REI: 12-hour. PHI: 3-day. HRAC 14, HRAC 15.


atrazine products (atrazine) POST PRE   | Apply 4L formulations at 1-2 qts. per acre and 90W formulations at 1.1-2.2 lbs. per acre. To control small, emerged broadleaves, include COC. Apply before planting and incorporate, after planting but before corn emerges, or after emergence but before corn is 12 inches tall. Many atrazine products are available. See labels for details. REI: 12-hour. HRAC 05. *RUP*.



Basagran (bentazon) POST  | Use 4L formulations at 1.5-2 pt. per acre and 5L formulations at 1.2 to 1.6 pts. per acre. Add 1 qt. of COC per 25 gals. spray solution (1% v/v). Apply to small weeds. Also controls nutsedge. Do not apply to corn that is stressed because injury may result. Combine with atrazine to broaden weed control spectrum. Do not exceed 2 lbs. of bentazon per acre, per season. REI: 48-hour. HRAC 06.



Cadet (fluthiacet-methyl) POST  | 0.6-0.9 fl. oz. per acre. *For processing sweet corn only.* Apply from preplant until corn reaches 48 inches tall, but before tasseling. Controls velvetleaf and several other broadleaves. May be tank-mixed with labeled postemergence herbicides. Add COC or NIS. Do not exceed 1.25 fl. oz. per acre per year. REI: 12-hour. PHI: 40-day. HRAC 14.



Callisto (mesotrione) POST PRE  | 6-7.7 fl. oz. per acre preemergence, 3 fl. oz. per acre postemergence. Some varieties may be severely injured. If weeds are present, add COC or NIS. Do not add UAN or AMS when applying to emerged sweet corn. Adding atrazine at 0.25-0.5 lb. of a.i. per acre for post applications, or 0.75 lb. a.i. per acre for pre applications will improve weed control. Note organophosphate insecticide precautions. Do not exceed 0.24 lb. mesotrione per acre per year (7.7 fl. oz. Callisto) from all sources. REI: 12-hour. PHI: 45-day. HRAC 27.



Callisto Xtra (mesotrione, atrazine) POST  | 20-24 fl. oz. per acre. Apply with NIS or COC. Apply after corn emerges and before corn is 12 inches tall. Also controls large crabgrass. Cultivars differ in sensitivity to this herbicide; get information on cultivars prior to use. Do not use on corn previously treated with Counter insecticide, or within 7 days of treatment with any organophosphate or carbamate insecticide. Do not exceed one application per year. REI: 12-hour. PHI: 45-day. HRAC 27, HRAC 05. *RUP*.



clopyralid products (clopyralid) POST  | Use Spur (40.9%) at 0.33-0.66 pts per acre on fresh or processing sweet corn. Use Stinger (40.9%) at 0.33-0.66 pts per acre on processing sweet corn. Use Stinger HL (60.22%) on at 0.2-0.4 pts per acre on processing sweet corn. Spray on actively growing weeds before corn is 18 inches tall. Controls composites and nightshade. Wait 21 days between applications. Do not exceed 0.66 pts. per acre of 3 lbs. per gal. formulations or 0.4 pts. per acre of 5 lbs. per gal. formulations. REI: 12-hour. PHI: 30-day for ears, 60-day for stover. HRAC 04.



dimethenamid-p plus atrazine products (dimethenamid-p, atrazine) PRE   | Apply Commit ATZ at 2.5-4.6 pts. per acre, Commit ATZ Lite at 2.0 to 3.5 pts. per acre, or Guardsman Max at 2.5-4.6 pts. per acre. Use low rates on coarse soils with low organic matter. Apply before planting and incorporate, or after planting before corn emerges, or after emergence before corn is 12 inches tall. Rates may be reduced if corn will be cultivated or full-season control is not needed. If multiple applications are made, do not exceed maximum rate per acre per year. REI: 12-hour. PHI: 50-day. HRAC 15, HRAC 05. *RUP*.

Double Header (acetochlor, mesotrione) PRE   | 1.4-2.4 qt. per acre. Apply to the soil surface up to 28 days prior to planting or after planting but before crop emergence or apply and incorporate 2 inches deep within 14 days prior to planting. Use lower rates for coarse textured soil and soils with low organic matter. Although other acetochlor + mesotrione products are available, not all are registered for use in sweet corn. See labels. REI: 12-hour. PHI: 45-day. HRAC 15, HRAC 27.



Dual Magnum (s-metolachlor) PRE   | 1-2 pts. per acre. Use lower rate on coarse soils. Apply before planting and incorporate, or apply after planting but before corn emerges. May also be applied as a directed spray between rows when corn is 5-40 inches tall. Incorporate to control nutsedge. May be mixed with atrazine, see label for details. Do not exceed 3.9 pts. per acre per year. Dual II Magnum contains a safener and may used instead of Dual Magnum to limit crop injury under cool soil conditions. REI: 24-hour. PHI: 30-day. HRAC 15.



glyphosate products (glyphosate) POST   | 0.75-3.75 lbs. acid equivalent (ae) per acre. Use formulations containing 3 lbs. ae per gal. at 16-48 fl. oz. per acre or formulations containing 4.5 lbs. ae per gal. at 11-32 fl. oz. per acre. Broadcast before or after planting but before crop emerges, or apply up to 0.75 lb. acid equivalent between crop rows with wipers, hooded or shielded sprayers after corn is 12 inches tall. Use low rate for annuals and higher rates for perennials. See label for suggested application volume and adjuvants. For **RoundUp-Ready sweet corn only** - will kill other varieties: postemergence applications may be made over-the-top of corn through the 8 leaf-collar stage (V-8) or until corn is 30 inches tall. Drop nozzles are recommended if corn is more than 24 inches tall, and must be used if corn is more than 30 inches tall to prevent spraying into whorls. Do not apply to corn more than 30 inches tall or if it has reached the reproductive stage. See product label for maximum use rates. REI: 4-hour to 12-hour. PHI: 7-day. HRAC 9.



Impact (topramezone) POST   | 0.5-2 fl. oz. per acre. Add MSO or high surfactant methylated oil concentrate (HSMOC) and urea ammonium nitrate (UAN) or spray grade ammonium sulfate (AMS). See label for additive rates. REI: 12-hour. PHI: 45-day. HRAC 27.



Laudis (tembotrione) POST   | 3 oz. per acre. Apply with 1% v/v MSO plus 8.5 lbs. of AMS per 100 gals. of spray solution. COC is less efficacious than MSO but can be used instead



of MSO when broadleaves are the main target and conditions for control are excellent. Tank-mixing with atrazine will improve efficacy and spectrum of weed species controlled. REI: 12-hour. PHI: 45-day. HRAC 27.


Lexar EZ (s-metolachlor, atrazine, mesotrione) PRE   | Use Lexar EZ at 3 or 3.5 qts. per acre or Lumax EZ at 2.7 or 3.25 qts. per acre. Use the lower rate on soils with organic matter less than 3% and the higher rate on soils with organic matter greater than 3%. Apply up to 14 days before planting or apply after planting but before corn emerges. Can be combined with glyphosate or paraquat products to control emerged weeds. REI: 24-hour. PHI: 60-day. HRAC 15, HRAC 05, HRAC 27. *RUP.*



Liberty 280 SL (glufosinate) POST   | Apply 29-43 fl. oz. per acre as a burndown application prior to planting. For **Liberty-Link sweet corn varieties only** - will kill other varieties: apply 22 fl. oz. per acre postemergence. Do not exceed 2 postemergence applications per season. Applications must be at least 7 days apart. Add AMS at 3 lb. per acre. Also available as Interline herbicide. REI: 12-hour. PHI: 50-day. HRAC 10.



Outlook (dimethenamid-p) PRE   | 12-21 fl. oz. per acre. Use lower rate on coarse soils low in organic matter. Apply before planting and incorporate, or after planting before corn emerges, or after emergence before corn is 12 inches tall. Apply preemergence for best activity. Do not exceed 21 fl. oz. of Commit or 24 fl. oz. of Outlook per acre per year. REI: 12-hour. PHI: 50-day. HRAC 15.


paraquat products (paraquat) POST   | 2-4 pt. per acre of 2 lb. per gal. formulation or 1.3-2.7 pt. per acre of 3 lb. per gal. formulation. Add 1 qt. COC (1% v/v) or 0.5 pt. NIS (0.25% v/v) per 25 gals. of solution. Apply before or after seeding but before crop emerges. Or apply after crop emergence and use a hooded or shielded sprayers to prevent spray from contacting crop. Or wait until corn is more than 10 inches tall and apply between rows using directed spray that reaches no higher than 3 inches up the corn stalk. Corn plants contacted by spray may be injured or killed. Certified applicators must successfully complete an EPA-approved training program before mixing, loading, and/or applying paraquat. REI: 12 to 24-hour. HRAC 22. *RUP.*



pendimethalin products (pendimethalin) PRE   | Apply 3.3 lb. per gallon formulations at 1.8-4.8 pts. per acre and 3.8 lb. a.i. per gallon formulations at 2-4 pts. per acre. Use low rates on coarse soils with low organic matter. Apply after planting but before corn emerges, or after emergence until corn is 20-24 in. tall or shows 8 leaf collars. Plant corn at least 1.5 inches deep and make sure seed is well covered. Use drop nozzles and directed spray for post applications, if necessary, to get spray to soil. Do not exceed one application per season. REI: 24-hour. HRAC 03.



Poast (sethoxydim) POST  | 0.75-1.5 pt. per acre. **Poast Protected sweet corn varieties only** - will kill other varieties. Add COC or MSO. UAN or AMS are optional, see label. Allow at least 10 days between repeated applications. Do not exceed 3 pt. per acre per growing season. Poast Plus may be used instead at 1.5-2.25 pt. per acre, not to exceed 4.5 pt. per acre per growing season. REI: 12-hour. PHI: 30-day. HRAC 01.


Revulin Q (nicosulfuron, mesotrione) POST   | 3.4 to 4.0 oz. per acre. Use with NIS after emergence until 12 inches tall or 5 leaf-collar stage. Use drop nozzles for corn between 12 and 18 inches tall. Do not apply to sweet corn taller than 18 inches or at 6 leaf-collar stage or later. Do not use AMS or UAN adjuvants. Because of the adjuvant restrictions, better results will be obtained when applied to smaller weeds. Can use COC under dry conditions to improve weed control, but may increase crop injury. Possible hybrid sensitivity. REI: 12-hour. PHI: 45-day. HRAC 02, HRAC 27.

s-metolachlor plus atrazine products (atrazine, s-metolachlor) PRE   | Apply Bicep II Magnum, Bicep II Magnum FC, Cinch ATZ, and Charger Max ATZ at 1.3-2.6 qts. per acre OR apply Bicep Lite II Magnum, Cinch ATZ Lite, or Charger Max ATZ Lite at 0.9-2.2 qts. per acre. Use low rates on coarse soils with low organic matter. Apply before planting and incorporate, or after planting before corn emerges, or after emergence before corn is 5 inches tall. REI: 24-hour. PHI: 30-day. HRAC 05, HRAC 15. *RUP*.



Sandea (halosulfuron) POST PRE  | 2/3-1 oz. per acre. Apply over-the-top or with drop nozzles from the spike through layby stages. Has some soil residual activity. A second application of 2/3 oz. per acre may be made only with drop nozzles aimed to avoid application into whorls. Do not exceed 2 applications per 12-month period. Additional halosulfuron products are available. See labels for details. REI: 12-hour. PHI: 30-day. HRAC 02.

Shieldex (tolpyralate) POST   | 1-1.35 fl. oz. per acre. Apply as a broadcast spray over corn when weeds are small. Apply to corn up to 20 inches tall and showing no more than 6 leaf collars. Use higher rate for larger weeds. Add NIS or COC. Do not exceed 2 applications per year or 2.7 fl. oz. per acre per year. REI: 12-hour. PHI: 35-day. HRAC 27.

Sinate (topramezone, glufosinate) POST   | 21 fl. oz. per acre. Apply to LibertyLink sweetcorn only from emergence to V6 stage of growth. Do not apply more than once per year. Add MSO, COC, or high surfactant methylated oil concentrate (HSMOC) and spray grade ammonium sulfate (AMS). See label for additive rates. REI: 12-hour. PHI: 50-day for ears, 55-day for stover. HRAC 27, HRAC 10.

Starane Ultra (fluroxypyr) POST  | 0.4 pt. per acre. Apply broadcast or as a directed spray to corn that has up to 4 fully exposed leaf collars. Use directed spray when corn is beyond the 4-

leaf collar stage. For volunteer potato, can apply preplant to emerged potato followed by a second application postemergence to emerged potato. REI: 24-hour. PHI: 31-day. HRAC 04.

Zidua SC (pyroxasulfone) PRE   | 1.75-6.5 fl. oz. per acre of SC formulations, 1.0-4.0 oz. per acre of WDG formulation. Apply before or after planting and before crop emergence, or at spiking up to V4 (4 leaf collars visible). May be incorporated. Will not control emerged weeds. May be tank-mixed or applied sequentially with many other products. Seed at least 1 inch deep. REI: 12-hour. PHI: 37-day. HRAC 15.