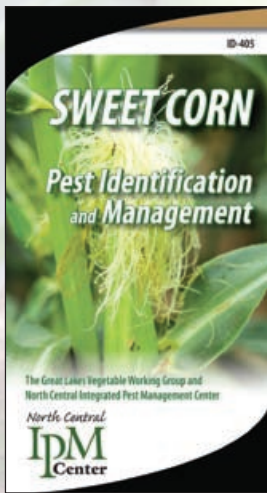


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SWEET CORN

Pest Identification and Management

The Great Lakes Vegetable Working Group and
North Central Integrated Pest Management Center

North Central

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Preface

This *Sweet Corn Pest Identification and Management* pocket guide is a quick, colorful, and handy reference for sweet corn growers, extension educators, crop consultants, and industry field representatives who work in the North Central Region and Ontario, Canada.

The information presented here is brief and cannot include every possible pest or management option in fresh market or processing sweet corn production in these areas. So, this guide focuses on the most critical pests and management options.

This guide contains pictures, basic descriptions, and management tips of economically important weeds, diseases, pest insects, and vertebrates. It also includes sections that describe beneficial insects, common types of herbicide injury, and general horticultural practices.

Reference to products in this publication is not intended to be an endorsement to the exclusion of others that may be similar. Persons using such products assume responsibility for their use in accordance with current directions of the manufacturer. Due to rapid changes in pesticide labels, always seek product recommendations from publications specific to your state or province.

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Production and Culture

Sweet Corn Genotypes

Sweet corn varieties are categorized by their genotypes.

The most common varieties are:

Normal or sugary (su) — Standard hybrid sweet corn is a mutant type of corn that differs from field or dent corn by mutation at the sugary (se) locus. The standard hybrid sweet corn accumulates about two times more sugar than field corn. Refrigeration after harvest is essential to maintain quality

Sugar enhanced (se) — There are two distinct groups of cultivars containing the se gene. There are the homozygous se (or se+) cultivars that have higher sugar levels in 100 percent of their kernels. There also are heterozygous se cultivars that have higher sugar levels in only 25 percent of their kernels; the other 75 percent contain the normal su gene with lower sugar levels. Refrigeration after harvest is essential to maintain quality.

Supersweet or shrunken (sh₂) — The sugar content of kernels is twice as high as standard su sweet corn. It is essential to isolate these varieties from all other corn types. These varieties have a slow sugar conversion to starch, so ear quality at harvest will hold for seven to 10 days. Refrigeration after harvest will help extend quality.

Planting

Plastic Mulches

Using clear, plastic mulch will speed the maturity of early plantings. When using plastic mulches, seed two weeks earlier than usual in double rows spaced 14 to 16 inches apart on 5- to 6-foot centers. In-row-spacing should be 8 to 12 inches between plants. Apply herbicide and cover with 1 to 1.25 mil-thick clear plastic mulch that is 4 feet wide. Keep the plastic over plants for approximately 30 days or until daytime temperatures consistently exceed 75°F. At that time, cut the plastic and remove it from the field, usually when plants are 6 to 12 inches tall. Plant cold-tolerant varieties to avoid uneven stands and uneven vigor.



Clear, plastic mulch speeds the maturity of early plantings.

Row Covers

Another approach to accelerating maturity is to apply a polyester or polypropylene row cover (floating) after planting. Although this method does not increase soil temperatures as quickly as plastic mulch, using row covers does have advantages. Floating row covers allow the use of standard row spacing, pose less danger of plant injury from high temperatures, are easier to use, and allow for the reuse of row covers for several seasons.

Sh₂ varieties are also more difficult to establish than se and su types. Sh₂ varieties germinate poorly below 60°F and rough handling easily damages their seeds.

Plant Spacing

Row spacing for most sweet corn varieties is commonly 30 to 36 inches between rows, with plants spaced 8 to 12 inches within the row. Closer in-row spacing may be used in early plantings, while wider in-row spacing is used for late plantings.

Plant Populations

The recommended plant population of sweet corn is between 15,000 to 21,000 plants per acre. Higher populations require more water and fertilizer during the growing season to maintain ear size and increase the number of marketable ears per acre.

Recommended Nutrients Based on Soil Tests

N Pounds/ Acre	P ₂ O ₅ Pounds/Acre Soil P Level			K ₂ O Pounds/Acre Soil K Level			Comments
	Low	Med.	High	Low	Med.	High	
120-140	120	80	40	120	80	40	Total Recommended
40	80	40	0	80	40	0	Broadcast and disk-in.
40	40	40	40	40	40	40	Band place with planter.
40-60	0	0	0	0	0	0	Sidedress when corn is 6-12 inches high. ¹

¹ A second sidedressing could replace the preplant, broadcast N application if it is made before corn is 12 inches tall. This is preferable on leachable soils.

Typical Mineral Deficiency Symptoms



Phosphorus Deficiency

Symptoms: Purpling of older leaves, usually on young plants.

Causes: Acid and cold soils.



Potassium Deficiency

Symptoms: Leaf margins are tan, scorched, or have necrotic spots.

Causes: Acid soils.

Harvesting

Under normal temperatures, most sweet corn varieties reach maturity 18 to 21 days after silking. Supersweets (sh_2) have a wider "harvest window" than normal or sugary (su) and sugar enhanced (se) varieties.

Sweet corn is considered mature for fresh market consumption when:

- The pollination silks are dried.
- The kernels are still immature but are plump and appear “milky,” not doughy, when squeezed.

At this point the water content of su kernels is 70 percent to 75 percent; the water content of sh₂ is 77 percent to 78 percent.

Fresh market sweet corn quality is based on the following criteria:

- Freshness.
- Uniform appearance.
- Uniform and well-filled rows.
- Plumpness of kernels.
- Milky kernel contents.
- Freedom from damage and defects, including discoloration, harvest injury, worm damage, live insects, and decaying silks or kernels.

Post Harvest

Store harvested corn between 32°F and 40°F at 98 percent relative humidity. Sweet corn is generally hydrocooled and packed with ice or top-iced. After thorough cooling and icing, be sure storage and transit temperatures hold slightly above 32°F (0°C).

Weed Biology and Seedling Identification

Broadleaf Weeds



Apple of Peru

Family: Nightshade (Solanaceae).

Life Cycle: Annual that reproduces by seed.