



# Sweet Corn

Cheryl Kaiser<sup>1</sup> and Matt Ernst<sup>2</sup>

## Introduction

Sweet corn (*Zea mays* subsp. *mays*) is one of the most popular fresh market vegetables produced in Kentucky. While field corn has thousands of years of history, sweet corn has only been available since the 1700s. Present day cultivars vary by kernel color (yellow, white and bicolor) and sugar content.

## Marketing

Kentucky producers commonly sell fresh sweet corn through wholesale markets, including local supermarkets and restaurants; farmers markets; and roadside or on-farm stands. Sweet corn can be included as part of a community supported agriculture (CSA) subscription mix. Corn may be an ingredient in value-added products, such as salsa.

## Market Outlook

Fresh sweet corn consumption per person in the U.S. has declined slightly since 2010 and ranged from 7 to 9 pounds annually between 2013 and 2017. Sweet corn consumption overall has declined as less frozen and canned corn is being consumed per person. Because sweet corn is in high demand and in-season sweet corn is easy to sell per ear, it is often used to draw consumers to a retail outlet. Sweet corn is labor-intensive but can be a profitable venture, especially when a reputation for quality is established in a local market. Growers with limited acreage must consider if it is worth the space requirements, however, as it requires more area per unit than many other vegetable crops.

## Production Considerations

### Variety selection

Sweet corn cultivars are grouped ac-



ording to the gene(s) controlling sugar content level: standard type, super sweet and sugar-enhanced, along with several other types. Any of these may have white, yellow or bicolor kernels. Differences in maturation times (early, mid-season and late) also occur. Roundup Ready varieties, which have tolerance to the herbicide glyphosate, are also available but may not be readily accepted by some clientele. Varieties can be strikingly different in terms of sweetness, eating quality and suitability for mechanical harvest and shipping. Consider carefully which types are best suited for your market situation, as well as your growing conditions. Cultivars with tolerance or resistance to leaf blights and viruses should be selected when planting in June, especially in river bottoms and humid areas of the state.



Different types also have different isolation requirements. It is important to iso-

<sup>1</sup>Cheryl Kaiser is a former Extension Associate with the Center for Crop Diversification.

<sup>2</sup>Matt Ernst is an independent contractor with the Center for Crop Diversification.

late plantings of dissimilar cultivars from each other to avoid cross-pollination, which can result in reductions in sugar content and the production of all bicolor corn. All sweet corn varieties will need to be isolated from field corn and popcorn. Isolation can generally be accomplished by physical separation or by making sure there is a minimum of 14 days difference in the maturities of different types.

#### *Site selection and planting*

Sweet corn will do well in all areas of Kentucky, but well-drained soils are essential for good results. A field that has been in fescue sod is ideal for sweet corn production, but plowing should be done several weeks in advance of planting. In most parts of Kentucky the earliest plantings are made between April 20 and May 1. In areas of the state where consumers will pay a higher price for sweet corn, transplants set into black plastic mulch provide earlier harvests, which have been profitable.

Irrigation may be required to ensure high quality ears. While solid set sprinkler systems and traveling guns are still in use, drip irrigation lines run down the rows on bare ground can make irrigation and fertigation relatively easy.

#### *Pest management*

Corn earworm is one of the most destructive insects attacking sweet corn. Other insect pests that can cause crop damage include corn borer, armyworm, Japanese beetles and flea beetles. Using insect traps or scouting to monitor populations can help the grower determine when and how often insecticides should be applied. Potential disease problems include Stewart's wilt, leaf blights, rust and viruses. Crop rotation and the use of resistant varieties can help manage these diseases. Weed control is achieved by a good crop rotation program and the use of herbicides. Roundup Ready varieties are more expensive, but may be useful in situations where a grower has particular difficulty controlling weeds. As with any crop, it is important to determine if your market will accept genetically modified crops. Deer, groundhogs, raccoons, coyotes and birds will also cause crop losses. An electric fence can be used to exclude some pests, particularly deer and coyotes, and may be worth the investment.

#### *Harvest and storage*

Sweet corn is harvested once the silks have turned



brown and the kernels are well-developed and milky. For the highest quality ears, it is critical that sweet corn be harvested in a timely manner at optimum maturity. To maintain top quality, ears must be quickly and properly cooled to prevent the sucrose from changing into starch.

#### *Labor requirements*

Labor needs for sweet corn production are approximately 20 hours per acre. Hand harvesting and packing requires 55 to 65 hours per acre, while machine harvesting and packing requires 20 to 30 hours per acre.

### **Economic Considerations**

Initial investments include land preparation, purchase of seed and installation of an irrigation system. The estimated total cost for overhead irrigated, fresh market sweet corn in 2018 was approximately \$2,610 per acre. Since returns vary depending on actual yields and market prices, the following per acre returns to land, owner labor and management estimates are based on three different scenarios. Conservative estimates represent statewide average cost and return estimates for wholesale production in Kentucky for 2018.

Pessimistic \$(210)*	Conservative \$222	Optimistic \$533
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Sweet corn profits are extremely sensitive to price. Wholesale sweet corn profits tend to be especially risky due to lower prices and potential regional surpluses of fresh sweet corn during Kentucky's season. Direct marketing may help reduce this risk. Small-scale budget estimates for Kentucky sweet corn production were developed using 2017-18 production assumptions. Those estimates showed 0.1 acre of sweet corn, producing 160 dozen sold at \$5 per dozen, returned about \$80 to land, owner labor and management, or about \$0.50 per dozen.

*\*Parentheses indicate a negative number, i.e. a net loss*

## Selected Resources

- An IPM Scouting Guide for Common Problems of Sweet Corn in Kentucky, ID-184 (University of Kentucky, 2010) <http://www.ca.uky.edu/agcomm/PUBS/id/id184/id184.pdf>
- Sweet Corn Insect Integrated Pest Management Scout Manual (University of Kentucky, 1994) <http://ipm.ca.uky.edu/files/ipm10swt.pdf>
- Vegetable and Melon Budgets (University of Kentucky, 2017) <http://www.uky.edu/ccd/tools/budgets>
- Vegetable Production Guide for Commercial Growers, ID-36 (University of Kentucky) <http://www.ca.uky.edu/agc/pubs/id/id36/id36.pdf>
- Commercial Sweet Corn Handling (Alabama Cooperative Extension, 2001) <http://www.aces.edu/pubs/docs/A/ANR-0584/>
- Enterprise Budget: Sweet Corn (Leopold Center, Iowa State University, 2010) <https://store.extension.iastate.edu/ItemDetail.aspx?ProductID=13312>
- Growing Sweet Corn in Missouri, G6390 (University of Missouri, 2006) <https://extension2.missouri.edu/G6390>

- KingCorn — The Corn Grower’s Guidebook (Purdue University, 2009) <http://www.agry.purdue.edu/ext/corn/index.html>
- Sweet Corn Profile (Agricultural Marketing Resource Center, 2017) <https://www.agmrc.org/commodities-products/grains-oilseeds/corn-grain/sweet-corn-profile/>
- Sweet Corn: Organic Production (ATTRA, 2008) <http://attra.ncat.org/attra-pub/sweetcorn.html>
- Sweet Corn Pest Identification and Management (Great Lakes Working Group & North Central Integrated Pest Management Center, 2008) 3.4 MB file <https://www.extension.purdue.edu/extmedia/id/id-405.pdf>

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Reviewed by Shawn Wright, UK Horticulture Specialist, and Josh Knight, UK Senior Extension Associate  
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