



Muskmelon (Cantaloupe)

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Introduction

Muskmelon (*Cucumis melo*, Reticulatus Group) is a vining plant in the Cucurbit family. This warm-season crop is sensitive to cold temperatures and requires a fairly long growing season from seed to marketable fruit. While often referred to as cantaloupes, melons with the characteristic netted rind are actually muskmelons. Cantaloupes (*Cucumis melo*, Cantalupensis Group) with their hard, very rough, warty rinds are not grown commercially in the U.S.

Marketing

Kentucky fresh market muskmelons are sold at farmers markets throughout the Commonwealth. Other retail outlets include community supported agriculture (CSA) subscriptions, roadside stands, and farm markets. Local groceries and restaurants are also potential melon markets. Larger-scale wholesale markets are also accessible for muskmelons, and some Kentucky growers have made wholesale alliances with national melon shippers. Kentucky's produce auctions, especially the Fairview Produce Auction in Western Kentucky, have handled more and more melons each year since 2002. There was a significant increase in sales through auctions in 2009.

In addition, there is a small demand for specialty melons through southern Ohio marketing channels, and Kentucky producers may be able to tap into this market. For



more information, refer to the Center for Crop Diversification profile on [specialty melons](#).

Market Outlook

Muskmelon consumption and utilization, calculated by the USDA as per capita disappearance of the total U.S. crop, declined in the decade from 2000 to 2009. Per capita consumption was 11.1 pounds in 2000; by 2009, consumption declined to about 9 pounds per capita. According to USDA, price increases offset some of that lower consumption as season average cantaloupe prices increased by about 12% during that time. Producers should understand that the muskmelon market can be highly variable, with fluctuations dependent on weather in the western U.S., import volume, and changing consumer preferences. Combining different market channels and managing production costs can help reduce



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risk. With a good marketing strategy, muskmelon producers in Kentucky should be able to average returns in the \$800 to \$1,500 per acre range over a given five-year period.

Production Considerations

Cultivar selection

There are two general types of muskmelons. The Eastern type, which is primarily grown in Kentucky, is large, coarsely netted, deeply sutured, and has relatively soft flesh. The western shipping melon is small, finely netted, lightly sutured, and has firm flesh. Muskmelon cultivars differ in such horticultural traits as rind texture (fine or heavy netting), flesh color (orange or salmon), fruit size, fruit shape (round or oblong), flavor, and earliness. Disease resistance/tolerance to Fusarium wilt, downy mildew, and/or powdery mildew is available in some cultivars. Growers should select only adapted varieties that have the qualities in demand for the intended market.

Site selection and planting

Muskmelons do best when grown on sandy or sandy loam soils that are well-drained. Medium-textured soils can also be productive when good management practices are followed. Planting between strips of annual rye can provide windbreak protection, if needed. Melons should not follow melons, other cucurbits, or solanaceous crops (e.g. tomatoes, peppers, eggplant, and tobacco) in the rotation for at least three years because of potential disease problems.

Muskmelons are usually grown as transplants in a greenhouse and then transplanted to the field. They can also be direct-seeded to the field; however, using transplants reduces risks and helps to produce an earlier maturing crop that will often bring much higher prices. Plant only certified disease-free seed.

Black plastic mulch with drip irrigation is used to obtain higher yields and to encourage faster growth and earlier maturity. Transplants can be planted through the plastic by making holes with

a bulb setter or something similar. Mechanical transplanters are also available that will transplant through plastic.

Training plants to grow in the rows during the early stages of development will enable an easier harvest. Growers with large acreages should provide one to two strong hives of bees for each acre of plants to ensure good pollination.

Pest management

Bacterial wilt is the most serious disease threat to muskmelon production in Kentucky. The bacterium is transmitted by striped and spotted cucumber beetles; controlling this vector is essential to disease management. Insecticide applications are used to protect plants from cucumber beetle feeding beginning with the day of seedling emergence or transplanting. Other diseases of muskmelon include Alternaria blight, anthracnose, downy mildew, Fusarium wilt, gummy stem blight/black rot, and powdery mildew. Site selection, crop rotation, and pre-plant weed management are important aspects of controlling weeds in muskmelon plantings. Managing weeds during the growing season will be especially important during the first five weeks of plant growth.

Harvest and storage

Muskmelons are hand-harvested at the 'full-slip' stage if they are to be sold locally; or at '1/4 slip' or 'half-slip' if they are to be held for some time before marketing or shipping. Harvesting every other day will be necessary during periods of high temperatures. Melons benefit greatly when field heat is removed either by hydrocooling or forced-air cooling as soon after harvest as possible. Short-term storage of melons requires temperatures of 36° F to 41° F and a relative humidity of 95 percent.

Labor requirements

Labor needs per acre are approximately 15 hours for production (transplants), 72 hours for harvest, 30 hours for grading, and 10 hours for black plastic removal (post-harvest).

Economic Considerations

Initial investments include land preparation and the purchase of seed or transplants. Additional start-up costs can include the installation of an irrigation system and black plastic mulch.

Total pre-harvest variable costs for trickle irrigated muskmelon are estimated at \$1,840 per acre, with an additional harvesting and marketing cost of \$2,570 per acre, including a 10% marketing commission. Total expenses, including fixed costs, are approximately \$4,850 per acre.

Since returns vary depending on actual yields and market prices, the following per acre returns to land and management are based on three different economic scenarios. Conservative estimates represent the University of Kentucky's average statewide cost and return estimates for 2013.

PESSIMISTIC	CONSERVATIVE	OPTIMISTIC
\$(638)*	\$775	\$1,490

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

Selected Resources

- IPM Scouting Guide for Common Problems of Cucurbit Crops in Kentucky (University of Kentucky, 2009) *1.8 MB file*
<http://www2.ca.uky.edu/agcomm/pubs/id/id91/id91.pdf>
- Specialty Melons (University of Kentucky, 2012) <http://www.uky.edu/ccd/production/crop-resources/vegetables/specialty-melons>
- Vegetable and Melon Budgets (University of Kentucky, 2013) <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.htm>
- Cantaloupe and Specialty Melons (University of Georgia, 2014) <http://extension.uga.edu/publications/detail.cfm?number=B1179>
- Producing Cantaloupes in Tennessee (University of Tennessee, 1999) <https://utextension.tennessee.edu/publications/Documents/PB962.pdf>

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