



Summer Squash

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Introduction

Summer squashes (*Curcubita pepo*) are warm-season cucurbits that are harvested when the fruits are immature. The most common summer squash types include yellow (crookneck and straightneck) and zucchini. Also included in the summer squash group are scallop squashes and cocozelle. Summer squashes grow on plants with a bush growth habit, rather than vining.

Marketing and Market Outlook

Direct marketing options for Kentucky-grown summer squash include farmers markets, community supported agriculture (CSA) subscriptions and roadside stands. Wholesale markets include Kentucky's produce auctions, sales to local food retailers and large-volume wholesale shipments. Wholesale production tends to be more profitable when producers are able to use varieties and season-extension techniques to ship squash early or late in the season, when prices may be higher. Although not usually as profitable as other summer produce, summer squash is essential in a farmers market or roadside stand fresh vegetable mix. Some producers have discovered profitable niche markets selling edible squash blossoms to restaurants. Summer squash can also be utilized in value-added products such as breads and relishes. To see home-based processing and microprocessing information for Kentucky, go to <http://www2.ca.uky.edu/agcomm/micro/>.

Production Considerations

Cultivar selection

Summer squash cultivars differ in fruit characteristics (shape and color), growth habit (open or compact bush), earliness and disease resistance. Crookneck



squash typically have yellow skin with a crook or bend at the stem end, while straightneck are a yellow squash that tapers to the stem end but lacks the crook. Zucchini squash usually is long and cylindrical, though there are some that tend more toward round, with skin that can be various shades of dark green. The cocozelle squash, often referred to as Italian zucchini, are green with lighter stripes. Scallop squash types, such as Patty Pan, are circular and flattened with scalloped edges; the skin may be green, white, or yellow. Because of this diversity among summer squashes, it is important to select those varieties with the qualities in demand by the intended market. In addition, growers should select well-adapted cultivars with disease resistance whenever possible.



Site selection and planting

Summer squash produces best in well-drained soils. This crop is usually grown for an early summer market (harvested in mid- to late June) or for an early fall

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market (harvested when prices begin to rise in September).

Squash is a warm-season crop that should not be seeded until all danger of frost has passed. Black plastic on raised beds with trickle irrigation will speed soil warming and can dramatically increase early and total summer squash yields. Seed or transplants can be planted directly through the plastic either by hand, with a waterwheel setter or with machinery designed for direct seeding through plastic. White or white-on-black plastic mulch can be used for July plantings if squash is grown for fall markets. Growers producing squash for the late summer/early fall market usually encounter serious virus disease problems and should plant either a variety with the precocious yellow trait that masks virus symptoms or one with virus resistance.

If bees are not abundant in the field at flowering time, hives should be placed next to the field, with at least one hive per acre.

Pest management

Potential disease problems include *Choanephora* fruit rot, scab and *Phytophthora* blight. Viruses, downy mildew and powdery mildew mainly cause losses in summer and fall plantings. Diseases are managed with sequential planting, crop rotation, resistant varieties, sanitation and fungicides. Cucumber beetles (striped and spotted), squash vine borer, spider mites and squash bugs can become serious pests if not controlled. Scouting to monitor populations can help the grower determine when and how often insecticides should be applied. Special precautions should be taken with insecticide treatments during bloom to avoid damaging bee populations. Weed management options include herbicides, shallow cultivation and/or the use of plastic mulch. Avoid planting in sites with serious noxious perennial weed problems.

Harvest and storage

Harvest summer squash at the proper size for your market and before the skin becomes tough and hard. The skin should still have a glossy appearance. Fruit will be ready for harvest two to five days after flow-

ers have fully opened. Squash should be cut from the plant leaving a portion of the stem attached to the fruit. Fruit must be handled very gently to avoid scarring. Harvests may be required every other day or even daily.



This crop is normally sold on the fresh, wholesale market in 1/2-bushel waxed cardboard cartons or 1 1/9-bushel cartons or wire bound crates. Squash in each crate or carton should be uniform in size to meet the produce buyer's count and weight requirements. Whenever possible, summer squash should be marketed quickly and not stored.

Labor requirements

Labor needs per acre for summer squash grown on black plastic mulch with drip irrigation are approximately 25 hours for production, 130 hours for harvest, and 100 hours for packing/grading. An additional minimum of 10 hours per acre is needed for plastic removal following harvest. Currently there are no options for recycling black plastic so it will need to be disposed of; a plastic roller that reels up the plastic and drip tape will speed the process and reduce the volume of material that needs disposal.

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 plastic mulch.

Production costs for plasticulture yellow crookneck summer squash are estimated at \$1,575 per acre, with harvest and marketing costs at \$4,420 per acre. Total expenses per acre, including both variable and fixed costs, can exceed \$6,400 per acre.

Since returns vary depending on actual yields and market prices, the following per acre returns to land and management estimates are based on three different scenarios. Conservative estimates represent the University of Kentucky's statewide average cost and return estimates for 2014.

Pessimistic \$(556)*	Conservative \$328	Optimistic \$853
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**Parentheses indicate a negative number, i.e. a net loss*

Selected Resources

- An IPM Scouting Guide for Common Problems of Cucurbit Crops in Kentucky, ID-91 (University of Kentucky, 2009) 1.8 MB file
<http://www.ca.uky.edu/agc/pubs/id/id91/id91.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://www2.ca.uky.edu/agc/pubs/id/id36/id36.pdf>
- Commercial Squash Production, Bulletin 527 (University of Georgia, 2017)
<http://extension.uga.edu/publications/detail.html?number=C527&title=Commercial%20Squash%20Production>

- Guide to Commercial Summer Squash Production, ANR-1014 (Alabama Cooperative Extension, 2005)
<http://www.aces.edu/pubs/docs/A/ANR-1014/>
- Summer Squash Production, HIL-24A (North Carolina State University, 2005) <https://content.ces.ncsu.edu/summer-squash-production>

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