University of Kentucky
College of Agriculture,
Food and Environment
Cooperative Extension Service

Center for Crop Diversification Crop Profile
CCD-CP-91

Cauliflower

Cheryl Kaiser[1] and Matt Ernst[2]

Introduction

Cauliflower (*Brassica oleracea*) is a cool-season crop in the crucifer family. While it is closely related to broccoli and cabbage, cauliflower is more exacting in its environmental requirements than other cole crops. Cauliflower is very sensitive to unusually hot weather, temperatures that are too low, and drought. It is also subject to black rot and other diseases.

Marketing and Market Outlook

Only fall cauliflower crops appear to have potential for commercial fresh market sales. The U.S. per capita use of fresh cauliflower was between 1½ and 2 pounds in 2016, representing a modest increase after remaining at 1.2 to 1.3 pounds from 2010-14. Cauliflower use benefits somewhat from trends using vegetables to replace carbohydrates, such as mashed cauliflower for mashed potatoes. Direct marketers may find niche markets for specialty cauliflower varieties, including green, orange and purple by emphasizing the increased nutritional content of these colored varieties. Romanesco is not cauliflower or broccoli, though it has the texture of cauliflower and the flavor of broccoli.

Production considerations

Site Selection and Planting

While poorly drained soils should be avoided, slightly rolling land is suitable. Cauliflower requires high magnesium levels and a pH of 6.5 or higher. This crop will do well on ground that has been in tobacco; however, avoid fields that have previously been in other cole crops for the past three to five years.

Crop spacing can greatly affect head size; a closer spacing results in smaller heads. It is important to remember that although large heads of cauliflower are attractive and may be preferred by retail customers, wholesalers may prefer small, compact heads.

Cauliflower does not do well as a spring crop in Kentucky because of the unpredictability of the weather; however, it may do well as a fall crop. Transplants can be placed in the field in early August. Irrigation, preferably trickle, is often crucial for establishing a fall crop.

Cultivar Selection

Choose disease-resistant cultivars that have demonstrated good yield characteristics for Kentucky. Recommended varieties are listed in ID-36. Planting varieties of varying maturities can help provide a steady quantity of cauliflower into the fall months; cauliflower is cold-tolerant down to 22 to 24 degrees Fahrenheit.

CENTER FOR CROP DIVERSIFICATION
www.uky.edu/CCD

[1]Cheryl Kaiser is a former Extension Associate with the Center for Crop Diversification.
[2]Matt Ernst is an independent contractor with the Center for Crop Diversification.

Early-maturing varieties produce marketable heads in 55 to 67 days. Currently recommended early varieties for Kentucky include 'Majestic,' 'Snow Crown,' 'Steady,' and heat-tolerant 'Freedom.' Varieties producing white heads in 70 to 75 days include 'Aquarius,, 'Argos,' 'Flamenco,' 'White Sails' and 'Synergy.' 'Graffiti' is a recommended variety for Kentucky producing purple heads that turn deep green when cooked.

Pest Management

Insects can be a major problem in fall cauliflower production. Using insect traps or scouting to monitor populations can help the grower determine when and how often pesticides should be applied. Plant disease problems, such as blackrot, black leg and downy mildew, can also result in yield losses. Phytophthora root rot can also affect cole crops grown in Kentucky. A good crop rotation program and the use of disease resistant varieties will help in the prevention of a number of diseases.

Harvest and Storage

"Blanching" is necessary for some varieties to maintain the desirable white head or curd. Heads of these varieties that are exposed to sunlight can turn green. Blanching is done by pulling the leaves up over the developing head when curds are the size of a quarter. There are now some varieties available such as 'Freedom' that have tightly wrapped leaves, thus reducing the need for blanching; a few varieties have a mutation that prevents the heads from turning green even when exposed to sunlight. Once ready for harvest, heads are cut by hand. Pack cauliflower in cartons (nine to 12 film-wrapped heads) for wholesale fresh market sales.

Labor requirements

Cauliflower requires about 25 hours of labor per acre for production and about 125 hours per acre for harvesting and marketing.

Economic considerations

Initial investments include land preparation, purchase of seed or transplants, and installation of an irrigation system. Wholesale cauliflower production is a capital-intensive venture requiring product cooling, wrapping in cellophane, and packaging that meets industry standards. The cooling, irrigation, and handling equipment for proper cauliflower production are similar to those needed for broccoli; fees for these processes can easily translate to $2 to $3.50 per box of product.

Since returns can vary depending on actual yields and market prices, the following per acre returns to land and management are based on three different economic scenarios for trickle-irrigated cauliflower (2018).

Pessimistic	Conservative	Optimistic
$(501)*	$118	$783

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

Cauliflower production in Kentucky is probably best suited for direct, niche and well-developed local markets. Returns above variable costs (including hired labor costs) could fall in the $50 to $100 range for a 100-foot row of trickle-irrigated cauliflower, assuming a marketable yield of 90 pounds sold at $2 per pound (2018).

Selected Resources

- Bt Basics for Vegetable Integrated Pest Management, ID-156 (University of Kentucky, 2005) http://www.ca.uky.edu/agc/pubs/id/id156/id156.pdf
- Growers' Guide to Bt, ID-156A (University of Kentucky, 2005) http://www.ca.uky.edu/agc/pubs/id/id156a/id156a.pdf
- Vegetable Production Guide for Commercial Growers, ID-36 (University of Kentucky) http://www2.ca.uky.edu/agcomm/pubs/ID/ID36/ID36.pdf
- Cauliflower (Agricultural Marketing Resource Center, 2017) https://www.agmrc.org/commodities-products/vegetables/cauliflower/

Suggested Citation:

Kaiser, C. and M. Ernst. (2018). *Cauliflower*. CCD-CP-91. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. Available: http://www.uky.edu/ccd/sites/www.uky.edu.ccd/files/cauliflower.pdf

Reviewed by Shawn Wright, UK Horticulture Specialist, and Brent Rowell, UK Extension Specialist, International and Sustainable Horticulture
Photos courtesy of Pixabay.com
March 2018