

Canola

Introduction

Canola (*Brassica napus*) is a genetically altered and improved version of rapeseed that was developed for its superior edible oil and high value meal. The term “canola” can only be applied to those varieties that produce less than 2 percent erucic acid. Canola oil is lower in saturated fats than any other vegetable oil, making it a popular choice among health-conscious consumers. The portion of the seed left after the oil is extracted (canola meal) is of value as feed for livestock and poultry. Canola may also be used as an annual forage. In addition, canola is being considered as a source of biodiesel fuel.

Marketing

The nearest canola markets for producers in the Kentucky region are currently (2011) in Windsor, Ontario (ADM) and Courtland, Alabama (Farmers Cooperative). Regional producers incur a significant freight cost (as much as one-third of the price per pound) to ship canola there. However, with good weather and proper management, these freight costs might be covered. Canola can produce returns similar to wheat.

Canola production has extended south from the Upper Plains since 2005. Producers in Oklahoma and Kansas, where canola can be substituted for wheat in crop rotations, grew about 60,000 acres of canola in 2006. According to the National Agricultural Statistics Service, canola acreage increased to about



100,000 acres in Oklahoma in 2011. A limited amount of production has extended into Arkansas and Georgia.

There is a very small niche for canola production for birdseed. While this market is more profitable for producers, it is already being captured by Missouri growers. However, Kentucky producers with the ability to store canola after harvest may be able to take advantage of other windows in this niche market.

Market Outlook

The world-wide demand for canola oil continues to increase. Canola markets trend with other oilseed markets, and prices for oilseeds increased globally in the early 2010s. U.S. consumption of canola oil has steadily risen in recent years as its benefits have become more widely known. The food industry is also utilizing the oil in a growing number of food products. Domestic production of canola, however, is not keeping up with this increased demand. Because canola is well adapted to our climate and fits into our cropping systems, Kentucky

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seems well positioned to take advantage of these expanding production opportunities.

Production Considerations

Cultivar selection

Only winter-type canola varieties should be grown in Kentucky. Cultivars differ in days to maturity, seed yield, seed size, oil content, disease resistance/tolerance, lodging resistance, and several other agronomic characteristics. Choose varieties for high yield potential and winter hardiness. Growers should select only adapted varieties that have the qualities in demand for the intended market.

Site selection and planting

Canola is an annual that is grown as a fall-seeded winter crop in Kentucky. Production practices, including machinery and equipment, are similar to those used for winter wheat. A medium textured, well-drained soil is best for canola, although it will grow over a wide range of soil textures. Since canola does not tolerate waterlogged conditions, it should not be planted on fields prone to standing water, flooding, or poor drainage. Avoid fields where winter legumes, canola, and other Brassica crops have been grown for the past 2 to 3 years.

Canola should be planted in September in Kentucky, with planting dates of September 1 through September 25 providing the best yields. Seed can either be broadcast or drilled; however, drilling is the most reliable and preferred method. Although more difficult, the no-till method of seeding can be used with canola. Recommended seeding rates are 4 to 6 pounds per acre for drilling and 6½ to 8 pounds per acre for broadcast seeding. Plant seeds at a relatively shallow depth since they are very small. The ideal seeding depth is 1/2 inch in a firm, moist seedbed. Row spacing between 7 and 14 inches are acceptable for winter canola production.

Seedlings go dormant during the winter and although much of the leaf tissue freezes, the plant remains alive as long as the crown does not die.

Growth resumes in late winter and early spring when temperatures increase. Plants produce bright yellow flowers, which later develop into pods containing 15 to 30 small round seeds. Bees are believed to aid in pollination and increase yields.

Pest management

Canola, as a member of the crucifer family, can support a very large and diverse group of insects. However, the insects of most concern are the striped flea beetle, aphids, and the cabbage seed pod weevil. Diseases that have greatest potential for causing serious losses include *Sclerotinia* stem rot, blackleg, and *Alternaria* black spot. Currently, few pesticides have a national label for use on canola.

Weed control strategies (whether mechanical, chemical, or a combination) should primarily be directed toward reducing weed competition during the first 4 to 8 weeks after seeding. Otherwise, canola seedlings, which tend to grow slowly, can be overcome by certain weed species. Wild radish can cause significant problems and will require aggressive control measures prior to planting canola.

Harvest and storage

Canola ripens quickly, making timely harvest extremely critical for maximum yield. To determine when the crop is ready to harvest, the number of undesirable green seeds in the field, the moisture content of the canola seed, and the presence of dew or surface moisture on the plant must be monitored. In general, seed is harvested when most pods have turned tan in color and contain seeds that are black, with few to no green seeds. Harvesting too early will result in too many green seeds and a lower test weight, while late harvest can result in excessive shattering.

This crop can be harvested by swathing, if the proper equipment is available, or by direct combining. Canola stores well if it is kept dry, cool, and clean in weather-tight, rodent-proof structures. Because of the small seed size,

precautions should be taken with equipment (harvesting, transporting, handling, and drying) and storage facilities to prevent seed loss.

Labor requirements

The labor needs of canola are virtually identical to those of wheat, with 3 hours per acre for production and 1/2 hour per acre for harvest.

Economic Considerations

Initial investments include land preparation and purchase of seed. Canola production requires no new investment of equipment for a farm already producing small grains. Production costs (conventional tillage, drilled) are similar to wheat and may be estimated at \$210 to \$240 per acre, with harvest and marketing costs at \$45 to \$75 per acre. Total expenses per acre, including both variable and fixed, would come to approximately \$285. Presuming a yield of 2,000 pounds per acre and a market price of \$0.21 per pound, returns to land, capital, and management would be approximately \$175 per acre.

Oilseed and other commodity prices have experienced high degrees of variability in recent years. Expected yields and production costs for Kentucky indicate that growers will need to obtain a price of at least \$14 per hundredweight (cwt) to economically justify canola production. Canola offers returns competitive with wheat and double cropping canola with soybeans is competitive with wheat/soybeans, corn, and full season soybeans. The price of canola is strongly affected by the price of soybeans, by prices of other competing vegetable oils, and by U.S. farm programs.

Selected Resources

- Kentucky Integrated Crop Management Manual for Canola (University of Kentucky, 1992) *1.9 MB file*
<http://www.uky.edu/Ag/IPM/manuals/ipm8nola.pdf>
- Canola (Thomas Jefferson Agricultural Institute, Missouri, 2007)
<http://www.jeffersoninstitute.org/canola.php>
- Canola (University of Georgia)
<http://www.caes.uga.edu/commodities/fieldcrops/canola/>
- Canola Cost-Return Budget in South Central Kansas, MF-2421 (Kansas State University, 2011)
<http://www.ksre.ksu.edu/library/agec2/mf2421.pdf>
- Canola Council of Canada
<http://www.canolacouncil.org/default.aspx>
- Canola production (North Dakota State University, 2007)
<http://www.ag.ndsu.edu/pubs/plantsci/crops/a686w.htm>
- Canola Production in Georgia (University of Georgia, 2010)
http://www.caes.uga.edu/publications/pubDetail.cfm?pk_id=7711
- Great Plains Canola Production Handbook, MF-2734 (Oklahoma State University, Kansas State University, and University of Nebraska, 2007) *1.21 MB file*
<http://www.nm.nrcs.usda.gov/technical/tech-notes/energy/energy3a.pdf>
- North Carolina Canola Production (North Carolina State University, 2006) *2.3 MB file*
<http://ncsc.ncsu.edu/wp-content/uploads/2011/09/Canol-Guide-Final.pdf>
- U.S. Canola Association
<http://uscanola.com>

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Photos by Matt Barton, UK Agricultural Communications (canola field) and Tilo Hauke, Wikimedia Commons (flower close-up)

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For additional information, contact your local [County Extension](#) agent