

# Canola

## General Information

Canola is a name for edible rapeseed, a member of the mustard family. Rapeseed is high in protein and has been grown and used for centuries for oil production, animal feed, and, less commonly, as forage. The seed has an oil content of 40-60%, and the “meal” leftover after pressing for oil can be used as feed for livestock. The term “canola,” registered by the Western Canadian Oilseed Crushers Association, refers to “double-low” varieties of rape, which were low in both erucic acid and glucosinolates.

Canola can be grown in the northeast, although the U.S. as a whole makes less than 1% of the world’s canola. Canola does well in temperate zones, and will germinate in soil temperatures of as low as 41°F. The two main species of canola are *Brassica napus*, from Argentina; and *Brassica rapa* (syn. *B. campestris*) from Poland. *B. napus* matures a bit more slowly but is more commonly cultivated for food production, as the plants are taller, more disease-resistant, and generally have a greater yield; both are available in either spring- or fall-seeded varieties.



## Preparation & Planting

Because spring canola is planted early, manure application is recommended in the fall before planting. Suggested N rates are 50 lbs per acre after clover or 90 lbs per acre after small grains. Growers suggest applying 1 lb per acre Boron (if needed), as well as 70 lbs P & K per acre. For winter canola, the best practice is to split nitrogen applications, so that a starter application is used in the fall at a rate of about 10-20 lbs per acre, with the rest to follow in the spring before canola’s regrowth. Canola does well in soils with a pH of 6.0 – 6.3, and can tolerate salinity in soils. Crop rotation will also help to build the needed fertility.

Like other early spring grains, canola should be planted into a firm, well-drained seedbed at a depth of  $\frac{1}{2}$  inch and in rows spaced at 7" or less. Proper preparation of the seedbed will help to create uniform seeding depth and emergence. Avoid deep planting especially if soil moisture is adequate, as in early-planting. Late planting decreases yield, and because hardened seedlings are fairly frost tolerant, they can be planted early for better yields. The recommended seeding rate for canola is 5 to 6 lbs per acre, but using 7 to 8 lbs can provide an adequate yield if the canola is planted into poor conditions. However, seeding rates vary greatly between varieties, so growers recommend basing seeding rates on desired plant populations (at least 4 plants per ft<sup>2</sup>) and number of seeds per pound. Seedlings may take 4-10 days to emerge.

Fall-seeded canola can be planted in late August or September and overwintered for the next season. Snow cover will protect overwintering canola plants in the northeast if planted in time

for at least six true leaves and a good root system to establish before the first killing frost. The same guidelines for seedbed preparation and seeding rates should be followed for both spring- and fall-seeded varieties. Winter canola generally has much higher yields than spring-seeded varieties.

## Cultural Practices

Canola does not tolerate drought as well as other small grains, and also will not do well in water-logged soils or standing water. In addition, excessive heat (especially on sunny days with temperatures between 85 and 95°F) has caused damage in canola crops, even with adequate moisture. High temperatures are especially detrimental before flowering and pod development.



Crop rotation will also help control weeds, as well as taking care to remove weeds in previous crops. In addition, canola can be inter-seeded with other crops such as barley or field peas, which will help minimize pests and weeds. Canola is slow to establish, but once it begins bolting, it grows quickly and is quite competitive. The most common weed control practice in the county is to use incorporate trifluralin before planting (at a rate of 1 to 1½ pints per acre). This usually slows down annual grasses, lambsquarter, and pigweed until the crop becomes competitive. Other herbicides (e.g. glyphosate (Roundup), glufosinate (Basta), and imazamox (Beyond)) are labeled for use in canola, and several herbicide-tolerant varieties of canola are available.

Tine-weeding in the early stages appears to provide acceptable weed control, and may be a good option while canola crops are young. However, because of the narrow row spacing required to establish a thick stand of canola, post-emergent mechanical cultivation is difficult.

**Flea Beetles:** Flea beetles are a shiny black beetle that thrives in hot, sunny weather, and are very common in brassica crops. Young canola seedlings are especially susceptible to flea beetles. In general, flea beetles do not cause much defoliation once canola plants are beyond the 4-6 true-leaf stage, since they will outgrow the beetle's damage. Most seed comes treated with a systemic insecticide (e.g. Helix), but post-emergence insecticides are also available, if needed. Losses from flea beetles with untreated seed are not common, and much less common in winter canola than spring-seeded varieties.

**Cutworms:** This insect is not frequently a problem but tends to occur in late June. The insects seem to prefer late-planted fields. They can destroy a whole field in a few days; growers should look for plants that appear to have been snipped off at their base, as well as bare spots in canola fields, particularly where soils are particularly warm and light. Cutworms may consume plants as they germinate and emerge, leaving the impression that the seed never germinated. Because canola does not tiller, like cereal crops, its regeneration after cutworm damage is very limited. Planting into a clean seedbed, free of green plant matter, will decrease the chances for cutworm infestation; if cutworms are a problem, insecticides (e.g. Helix) can be applied, but should be sprayed in evening, as cutworms are mainly nocturnal.

European Corn Borer: This invasive insect probably has relatively little impact on canola yield, and is much more destructive in other crops. However, its newly-discovered presence in canola crops means that canola is capable of harboring this pest. No control methods have been developed yet, but they are probably not needed at this time.

Another potential problem for northeast growers is bird damage, particularly from small songbirds such as finches, which can perch on canola plants and access the seedpods. This problem can be minimized in a small field or plot with careful netting of the field or, for larger-scale growers, with scare tactics such as air cannons, decoys, or balloons, ideally moved around the field periodically throughout the growing season. Some growers choose to plant about 10-15% more canola than they expect to harvest, so that bird damage does not ruin the year's crop.

Canola is very susceptible to white mold, which usually starts on senesced flower petals, where spores germinate, and moves to the plant from there. The disease is very sensitive to humidity and thrives in cool, moist seasons. In wet years it can decrease yields 30% or more. The fungus forms sclerotia in canola stems, which can persist in soil for several years. Crop rotation can reduce build-up of inoculum of this and other diseases. Since crops susceptible to white mold are not widespread in our area, the disease is not currently a serious concern. However, multiple years of continuous canola production will build up disease pressure in canola and other susceptible crops such as soy, sunflower, dry beans, and most vegetables.

### Harvesting & Storing

Canola may be swathed or direct-combined, but many growers recommend swathing to minimize problems with green seed and shattering. Canola is quite prone to shattering, so a timely harvest is recommended; crops should be checked every 3-4 days after the pods first begin to turn yellow. (In addition, because seed-shattering is so common, growers should watch for canola volunteers in different crops during the following season.) Swath when 30 to 40% of the seeds have begun to change color and become a brownish red, which will occur at the bottom of the plant first. It takes about two weeks for the seed to mature and dry down in the windrow. For situations where the grain will be sold right out of the field, combining at 10-12% moisture, or when 90% of seed heads have turned from green to brown, is suggested. Test weight should be about 52 lbs per bushel.



For storage, canola should be less than 10% moisture. For long term storage it should be about 8-9% moisture. Drying should be at a low temperature (less than 110°F) to maintain high quality. Because canola seed is so small, it needs to be dried in thin layers, kept in very tight bins, and inspected often for heating and spoilage.

References:

- Berglund, Duane, Kent McKay, and Janet Knodel. August 2007. "Canola Production. *North Dakota State University Dept of Plant Sciences*. Retrieved March 15, 2011.  
(<http://www.ag.ndsu.edu/pubs/plantsci/crops/a686w.htm>)
- Canola Council of Canada. May 2006. "Controlling Cutworms in Canola." *Canol@ Fact*. Retrieved March 22, 2011. ([https://canola-council.merchantsecure.com/canola\\_resources/product22.aspx](https://canola-council.merchantsecure.com/canola_resources/product22.aspx))
- Oplinger, E.S., L.L. Hardman, E.T. Gritton, J.D. Doll, and K.A. Kelling. November 1989. "Canola (Rapeseed)." *Alternative Field Crops Manual*. Retrieved March 15, 2011.  
(<http://www.hort.purdue.edu/newcrop/afcm/canola.html>)
- Wallace, Janet, ed. 2001. *Organic field crop handbook*. 2d ed. Ottawa: Canadian Organic Growers.

© April 2011, UVM Extension Crops & Soils Team  
Questions? Contact [Hannah.Harwood@uvm.edu](mailto:Hannah.Harwood@uvm.edu)