



# PRODUCTION

Rapeseed/canola production

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By Duane L. Johnson and Robert L. Croissant<sup>1</sup>

## Quick Facts...

Processed rapeseed produces two products -- an oil with industrial and edible uses, and a high-protein meal used in animal feed.

Plant winter rapeseed four to six weeks before winter wheat. It will be ready for harvest about the same time as winter wheat. Production practices and equipment are similar to that used with small grains.

Do not grow industrial-type rapeseed that contains high erucic acid without a marketing contract. Canola is low in erucic acid and is edible.

The potential of rapeseed as an alternative dryland crop can best be realized when integrated into a conservation tillage management system.

Rapeseed (*Brassica napus*) production provides potential as an alternative income source for the Colorado agricultural producer. In addition, rapeseed production provides the opportunity to break up disease, insect, and weed cycles associated with traditional wheat production systems.

## Description

Rapeseed is in the Brassica family and is related to as broccoli, cabbage and cauliflower. Rapeseed plants grow 2 to 4 feet tall with branching from the central stem. The yellow flowers have four petals and the pods, which are 1 to 1-1/2 inches long and approximately 1/8 inch wide.

## Uses

Traditionally, rapeseed is used for birdseed or industrial purposes. Industrial varieties of rapeseed contain about 55 percent erucic acid and are used to make lubricants and diesel fuel substitutes and to manufacturer plastics. These varieties have high levels of toxic glycosinolates along with high erucic-acid levels, which renders the processed meal unsuitable for human or livestock consumption.

New varieties of rapeseed, developed in Canada and Europe, are low in erucic acid and glycosinolates. These varieties are the so-called "doublelow" types and sometimes are marketed as Canola. The extracted oil is used as an edible vegetable oil. Domestic markets are expected to increase because previous restrictions are being relaxed.

Winter rapeseed can be grazed by livestock during the fall growth period but should not be grazed in the spring. In the spring, each plant develops from one single growing point, and if grazed, the plant is destroyed.

## Production

Two growth habit types exist--winter and spring rapeseed. Winter rapeseed is planted in the fall and provides vegetative soil cover to prevent soil erosion.

Fall plantings generally are made in early to late August to early September, approximately two to four weeks before winter wheat. This assures the development of a well-established root system that reduces the risk of winter kill. The seedlings must emerge and establish adequate crowns in the fall to ensure winter survival. Spring rapeseed generally is planted in March to April with an anticipated August to September harvest.

Current seeding rate recommendations range from 4 to 6 pounds per acre. If the crop is to be irrigated, an appropriate change in seeding rate and row spacing is necessary, depending on the particular management system.

Plant rapeseed 1 to 1-1/2 inches deep in moist soil. Either a hoe or disk-type drill is acceptable as long as it successfully plants in large amounts of residue needed for erosion control. To achieve the relatively low planting rates, cracked wheat, cracked corn or cracked sorghum that has been screened may be required as a drill box filler. Three parts filler to one part rapeseed is an acceptable ratio for planting. A seeder designed to plant vegetable seeds is preferred. If soil crusting caused by heavy rain is a problem after planting but before emergence, consider a rotary hoe or other light tillage operation and use with caution. The use of clean pure seed known to be reasonably free of mustard is a must. Rapeseed contaminated with other mustard is docked heavily.

## Weed Control

When planting winter rapeseed in August, address fall weed control. Make preplant, incorporated applications of trifluralin (Treflan) prior to planting. Set incorporation equipment for a depth of 3 to 4 inches. Broadcast rates of 1 pound ai (active ingredient) per acre, 0.75 lb ai/A and 0.5 lb ai/A are recommended for fine-, and medium- and coarse-textured soils, respectively. Trifluralin can be used to control certain broadleaf and grassy weed species in Colorado. Consult and follow labeled procedures.

For conservation tillage management systems where rapeseed is planted into previous crop residues, contact herbicides such as paraquat (Paraquat+Plus), glyphosate (Roundup) and glyphosate + 2,4-D (Landmaster) are successfully used for weed control during the fallow period prior to planting. Glyphosate-resistant canola has not yet been released.

## Fertilizer

Fertilizer requirements for rapeseed are similar to dryland winter wheat. Make application decisions only from information acquired from adequate soil sampling and reliable soil tests. When nitrogen is recommended, apply in a split application with one-third to one-half applied prior to or at planting, and the remainder topdressed in the spring. Make phosphorus applications preplant or at planting time. Single nitrogen applications are best made in the spring.

## Growth and Harvest

Following winter dormancy, new leaves emerge and the rapeseed plant develops a single stalk from the crown. From this single stalk, flowering branches originate exhibiting an indeterminate growth habit. The plants generally begin to develop yellow flowers in early April and continue to grow, bloom and set seed for five to six weeks. Pod set occurs from approximately 18 inches above the crown to the top of the plant, generally 55 to 60 inches tall. Harvest will occur during late June and early July, similar to that of winter wheat. At Walsh, Colorado, in 1985, 1,020 to 1,850 pounds per acre of rapeseed were obtained in research plots under limited irrigation.

Rapeseed can be direct combined; however, to reduce the risk of shatter, swath the crop when the bottom pods are brown, and the pods at the top of the plant green, but well-filled.

## Pests and Diseases

Several insect pests have been observed to attack rapeseed, including the cabbage seedpod weevil, aphid, and harlequin bug.

The two primary diseases that affect rapeseed are Sclerotinia stem blight and Pythium (damping off). Sclerotinia is most prevalent where warm, wet conditions occur. Expect increased incidence of Sclerotinia when other susceptible crops are grown in rotation with rapeseed including irrigated sunflower, dry beans or vegetables. Sclerotinia under dryland conditions should not be a problem. The incidence of Pythium is most prevalent when rapeseed is planted late. The disease has not been a problem so far in Colorado.

## Irrigation

Irrigation methods including center-pivot, lateral move and furrow can be used effectively for the successful production of rapeseed. When sprinkler irrigation is employed, special precautions and good water management practices are required to reduce the risk of disease infection. Little is known regarding the specific water requirements of rapeseed. For production in southeastern Colorado with limited water, a preplant or pre-emergence irrigation plus one irrigation during the late flowering period seems to be adequate for average yields.

## Marketing

At present, at least one processor in Idaho (and potentially one in western Kansas) is writing grower contracts to accept production. The balance of the rapeseed crop can be sold at cash price anytime after harvest. Rapeseed is classified as an oil crop. The price offering typically has been 8 to 12 cents per pound. Growers who consider rapeseed production for the industrial oil market should grow it under contract only.

<sup>1</sup>*Duane Johnson, Colorado State University Cooperative Extension agronomist and associate professor; Robert Croissant, Cooperative Extension specialist and professor. 9/92.*

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