Winter Rapeseed Production in Western Oregon

Rapeseed is an oilseed crop adapted to the wheat-growing areas of Oregon's Willamette Valley.

This crop has been grown for centuries in Europe and Asia for use as lamp oil. With the invention of steam power, rapeseed oil also became an important lubricant. Rapeseed oil for edible purposes was not fully developed until after World War II. Today rapeseed is grown for both industrial use and as an edible oil.

Description

The winter annual *Brassica napus* is the rapeseed best adapted for commercial production in western Oregon. *Brassica napus* belongs to the mustard family, *Cruciferae*. Plants of this family have flowers with four petals arranged in the form of a cross. Rapeseed has yellow flowers, six stamens, and globe-shaped seed borne in two-celled pods, each pod containing 15 to 30 seeds. Plants resemble cabbage when young, but later grow to a height of 4 to 6 feet.

Varieties

Two types of rapeseed oil are found in the marketplace. Oils that contain levels of erucic acid greater than 40 percent are used as industrial oils. Rapeseed oil containing a low level of erucic acid is used in food products such as cooking and salad oils. At this time, however, the market in the United States is for industrial oil only.

The feed quality of rapeseed meal varies among varieties according to glucosinolate content. Glucosinolates are a group of sulfur compounds that can cause problems, such as enlarged thyroids and depressed growth, when the meal is fed in appreciable quantities to animals and poultry. New varieties, low in glucosinolate content, are being developed by Oregon State University and others.

Growers should choose varieties that are adapted to the area and meet the market demand for erucic acid and glucosinolate levels.

Seedbed preparation

Proper seedbed preparation is important for rapeseed. It should be weed-free and, since rape seeds are small, the soil surface should not be too coarse. The seedbed should be firm enough to ensure a shallow planting depth. When producing rapeseed following cereals, chop the straw from the previous crop and spread it uniformly over the field.
Fertilization

A fall application of nitrogen (50 to 60 pounds/acre) is needed for fall growth. Apply phosphorus and potassium on the basis of soil test recommendations. In general, rapeseed has about the same need for phosphorus and potassium as other field crops such as wheat.

Apply an additional 120 to 150 pounds of nitrogen when the plants start growing in the spring (early March). Spring fertilizer applications should also include at least 20 pounds of sulfur per acre.

Planting

Plant rapeseed in the fall, as soon as moisture levels are adequate to maintain plant growth. This may be as early as mid-August or as late as November 1. Seed yields are decreased, however, when the planting date is delayed past October 1.

A seeding rate of 6 to 10 pounds per acre is sufficient when drilled in 12- to 14-inch rows. Lower seeding rates or wider rows produce plants that tend to branch and spread out more. Such plants produce more straw, but seed yields are not increased. Higher seeding rates may cause stalks to break or lodge prior to flowering.

Rapeseed is small and should be seeded shallow (1/2 inch) in a firm, moist soil to produce a strong seedling.

Weed control

Control of annual grasses in the fall is essential for good plant establishment. Most annual grasses and some broadleaf weeds can be controlled selectively with herbicides. Some herbicides used in rapeseed production are applied to the soil surface and require incorporation, while others can be applied as pre-emergence or post-emergence treatments. Since local conditions influence selection, rate, and time of application of these herbicides, consult local authorities for advice and follow directions on the label of each container.

Harvesting

The timing of harvest can have considerable influence on the yield as well as the quality of seed. Harvesting too early may result in immature seeds with low oil and protein content. Since rapeseed is not resistant to seed shatter, delayed harvest may cause significant seed loss.

Rapeseed should be swathed when the majority of the seed are in the firm dough stage. At this stage, the seeds contain about 35 percent moisture, and about 25 percent of them will have started to change from green to brown in color. If swathed at this stage, the seeds will mature in the swath and the quality will be good. Leaving the windrow on top of a 6-inch stubble will allow faster drying.

Rapeseed is ready to combine when the moisture content is 8 percent or below and the seeds are mature. Seeds that are green inside are not mature; the green color will change to yellow if seeds are left in the swath.

Insects and Diseases

Flea beetles

If rapeseed is planted during July and August, flea beetles will feed on the young cotyledons shortly after emergence. Some cotyledon damage can result in yield loss, but severely damaged seedlings may die. This is not a problem when seed is planted in September or October.

Cabbage seedpod weevil

This insect is one of the most harmful to rapeseed crops. The seedpod weevil is a small, dark-gray-snouted beetle, which lays its eggs in the developing pods. After the eggs hatch, the larvae destroy the seeds. The pod weevil has not been a problem on winter rapeseed grown in western Oregon, but is considered a serious pest in cabbage seed production (cabbage and rapeseed are both Brassicas).

Bees

Brassica napus varieties are largely self-pollinated, and a good uniform seed set can be obtained without bees.

Diseases

No serious diseases have been found on rapeseed grown in the Willamette Valley.