



# Crop Science Report

RESEARCH/EXTENSION

## GROWING RAPESEED IN OREGON'S DRYLANDS

by Russ Karow<sup>1</sup> and F. Vance Pumphrey<sup>2</sup>

### INTRODUCTION

Successful production of rapeseed depends on careful planning, at least a year in advance. Field selection, summer fallow practices, seedbed preparation, seeding practices and fall fertility all affect rapeseed establishment and winter hardiness. Listed below are some key points to consider when planning for a rapeseed crop.

### MARKETING

Know your market. Think about marketing before you even consider growing a crop. What type of rapeseed will you grow? Who will buy or market the crop for you? What will the cost of production and marketing be? Will the anticipated price at harvest cover the costs of production and marketing?

### PRODUCTION CONSIDERATIONS

1. Winter rape does not tolerate waterlogged soils. Do not plant rape into fields with a history of winter or spring waterlogging.
2. Rape is not tolerant of Glean. If Glean has been used on a field within the past 1 to 2 years, some injury to rape is likely to occur.

---

<sup>1</sup>Extension Cereals Specialist, Crop Science Department, Oregon State University, Corvallis, OR 97331.

<sup>2</sup>Professor, Agronomy, Columbia Basin Agricultural Research Center, Box 370, Pendleton, OR 97801.

3. Once you've selected a field for planting, use summer fallow practices that maximize retention of moisture near the soil surface. Work in Idaho has shown that fields with no moisture in the upper 10 to 12 inches will not successfully produce rape. Agronomists in Idaho suggest that a minimum of 12% moisture (by weight) in the surface 6 inches is needed for successful establishment. Seedings into re-crop ground have been generally unsuccessful unless late summer rainfall was sufficient to raise moisture levels to 12% or more.
4. Weeds generally are not a problem when rape is established on well managed fallow ground. The dense ground cover produced by a well established rape crop suppresses most weeds. The only herbicide registered on rape in the Pacific Northwest at this time is Treflan. Treflan can be preplant incorporated for control of grassy weeds.
5. The final seed bed needs to be fine but firm. Rapeseed is small, and good seed-soil contact is necessary for rapid, uniform germination. Loose soils may need to be rolled.
6. Planting day is critical for successful overwintering of rape. Early to mid-August plantings have been most successful in eastern Washington and northern Idaho. Stands and yields were reduced slightly with late August plantings and reduced significantly when seeding was delayed until mid-September.
7. Rapeseed can be planted in rows from 7 to 14 inches wide. Narrower rows ( 7 inch) close more quickly resulting in better weed competition and also result in more uniform maturity. Wider rows (>14") have depressed yield.
8. Ideally, seeding rates should be 5 to 10 lbs. per acre if seed is planted into good moisture, into a good seedbed, and at the recommended planting date. Under good planting conditions, yield increases have not been seen with higher rates. In fact, yield may be depressed if seeding rates are excessive. Some drills may not be able to seed less than 10 to 12 lbs. per acre. Seeding rates in this range should not be agronomically detrimental, but will be uneconomic. Drill modification may be necessary if rates below 15 to 18 lbs. per acre cannot be obtained. If the seedbed is rough or planting is delayed, higher seeding rates (near 10 lbs.) should be used.
9. Seeding depth should be about one inch. Do not exceed two inches if at all possible. Seed needs to be planted into moist soil. If moisture is below one inch, seed to moisture; however, earlier seeding may be necessary to counteract the delay in emergence due to increased planting depth. Deep seeding can also lead to reduced stands if crusting occurs. Deep furrow drills can be used effectively. Row widths of 12 to 14 inches facilitate using deep furrow drills. Packer wheels can be beneficial in that seed-soil contact may be enhanced. Split-packers may be better than solid wheels as they leave an uncompacted zone directly above the seed.

## FERTILITY

Adequate fertility is essential for maximum rapeseed yields. Idaho research indicates that fertility rates will be similar to those used for wheat. About two pounds of nitrogen will be needed for each bushel (52 lb) of rape produced. This can be soil nitrogen accumulated during fallow or nitrogen applied as fertilizer. If  $\text{NO}_3\text{-N}$  levels are in the range of 20 ppm at planting, no fall nitrogen may be required. Additional nitrogen should be applied in the spring. Excessive fall fertilization can lead to diminished winter hardiness. P, K and S should be applied according to wheat crop recommendations. Boron is also essential for rape. If soil tests show boron levels to be less than 0.5 PPM, a 2 lb/A boron application may be beneficial.

## PESTS

Cabbage seed pod weevils are major insect pests. If significant levels of insects are present, an insect spray may be beneficial. Idaho research has shown that three to six adults per 180° sweep in full bloom fields can result in economic damage if weather conditions are favorable. Other insects can also be harmful. The crop needs to be monitored for insects from full bloom through pod maturity stages. Pythium and Sclerotinia fungal diseases have occasionally been problems in winter rape. Pythium is most likely to be detrimental in late seeded crops. Sclerotinia is a fungal disease that also attacks potatoes, peas, bean and other legume crops. Fungicides have been used in Canada for Sclerotinia control. Other fungal diseases have been noted on occasion in rapeseed crops. In general, it is recommended that rape be grown as part of a four year rotation. In this type of rotation, disease incidence will be minimized.

## HARVEST AND STORAGE

Maturity is variable because of the indeterminate growth habit of most rapeseed varieties. Mature pods are likely to shatter while other pods on the plant are still green. Early harvest can lead to seed and oil quality reduction. Swathing has been an effective method to reduce seed losses. Rapeseed should be swathed when the majority of the seed are in the firm dough stage. At this stage, the seed contain about 35% moisture, and about 25% 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.

Alternatively, rapeseed can be direct-combined; however, shattering can be a serious problem. Rape is direct combined in parts of Canada. Dessiccants are often used in direct combine crops to hasten maturity. Pod sealant products which claim to reduce shatter are now being marketed in the US and are being used in Oregon in 1986. These products may facilitate direct-combine harvest. Grower experience and preliminary research plots will provide information as to the utility of these products this year.

Rapeseed is ready to combine when the moisture content is 8% or below and the seeds are mature. Seeds that are green inside are not mature; green color will change to yellow as seeds mature.

To be stored safely, rapeseed needs to have less than an 8% moisture content. High moisture levels can lead to heating, fungal problems and fires. Shallow flat storage seems to be best. Storage facilities and equipment used to harvest and transport rapeseed needs to have tight seams and seals. Openings or cracks more than 1/16 of an inch are likely to result in seed loss.

#### REFERENCES

Winter Rapeseed Production in Western Oregon. J.M. Crane, G.D. Jolliff, W. Calhoun and N. Goetze. Crop Science Dept., Oregon State University. 1981.

Winter Rape Production Practices in Northern Idaho. G.A. Murray, D.L. Auld, L.E. O'Keeffe, and D.C. Thill. Agriculture Experiment Station, University of Idaho. 1984.

#### A MESSAGE TO READERS

Our experience with rapeseed production in the drylands of Oregon is limited. The information contained in this report is accurate to the best of our knowledge. The purpose is to inform and to alert interested persons to the potentials and problems of rapeseed production. The authors would welcome comments or suggestions for changes in this publication.