

and swathing is recommended as safer option. When at least half of the seed coat has turned yellow, brown or black; the seed is considered to have changed colour. Estimate the percentage of colour change, when there is 40 % or more colour change the crop is ready to swath. The seed should then be firm and not break when rolled between the thumb and forefinger. The moisture content of the seed for direct harvesting is about 35 %.

Uses

Human: Pressed canola produces edible oil, useful for cooking and salad oils or for processing into margarine.

Livestock: Canola meal is used as a high-protein and energy feed supplement for livestock. It is used as forage and historically it was used as forage for field-raised pigs and poultry.

Industry: Trials are underway to evaluate its suitability for diesel fuel, hydraulic oil and as biodegradable chainsaw oil.

Acknowledgements

ARC—Grain Crops Institute

Further information can be obtained from:

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Canola



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Scientific name: *Brassica napus* L.
Common name: Canola

Background

Canola is defined as any of several varieties of the rape-plant, which have been grown in Europe since the 13th century. Canola was developed between 1958 and 1974 by two Canadian scientists, Balduf Stefansson and Richard Downey. Canola is a name applied to edible oilseed rape. This plant belongs to the mustard family along with 3 000 other species. Rapeseed production became popular in North America during World War II as a source of lubricants.

Production areas

Western Cape Overberg, Eden, Cape Winelands and West Coast.

North West Dr Ruth Segomotsi Mompoti, Ngaka Modiri Molema, Bojanala and Dr Kenneth Kaunda.

Northern Cape Francis Baard and Karoo.

Agronomic requirements

Climatic requirements

Canola is a cool season crop; it adapts well to cool, extreme, temperate zones at minimum growth temperature of near 0 °C. The crop will germinate and emerge at soil temperatures of 5 °C, however, the optimum is 10 °C; its seedlings are frost tolerant and can survive temperature as low as -4 °C. However, the maximum temperatures for growth range between 12 and 25 °C. It is very susceptible to temperatures higher than 27 °C during the flowering period.

Soil requirements

Canola performs well on medium-textured, well-drained soils that do not crust easily. The crop adapts to soil salinity and a soil pH as low as 5,5 to 7,5.



Canola has been used as the first crop on newly-drained dikes because of its tolerance to salinity.

Rainfall

It requires approximately 400 to 500 mm water throughout its growing season. Yield can drop lower than 1 ton ha⁻¹ when rainfall is lower than 200 mm. During flowering and grain filling stages it is more prone to drought.

Cultural practices

Planting

Canola seed is very small; therefore, the seedbed should be fine without large clods to ensure an even planting depth. It must not be sown deeper than 3 cm, because shallow seeding, provided adequate moisture is present, means quicker seedling emergence. Canola seed is typically seeded at 15–45 cm rows under irrigation and cannot be sown when the top 5 to 7,5 cm of soil has dried out. This crop should be planted in April to early June to achieve highest yields.

Fertilisation

Little information is available on the responsiveness of canola to lime applications or soil pH. Fertiliser appli-

cation is based on soil test results. Canola is sensitive to direct seed contact with fertiliser, therefore fertiliser application should be banded to the side and below the seed or broadcasted.

Irrigation

Most of the world's canola is grown under dryland conditions. Experience showed that yield will increase dramatically by irrigating at critical times under moderately favourable conditions. The most critical time for irrigation is during flowering and early pod development. Maximum oil accumulation occurs during the pod stage until maturation; irrigation during these stages will maximise oil content.

Weed control

Canola seedlings are sensitive to weed competition. An effective weed control programme should include crop rotation, mechanical and chemical methods. If broadleaf weeds pose a problem, triazine resistant cultivars can be planted. Canola is extremely sensitive to a chemical drift from most broadleaf herbicides such as glyphosate, dicamba, MCPA, etc.

Pest and disease control

Insect pests and diseases have an adverse impact on canola productivity; they also lead to poor-quality canola seed. Pests and diseases reduce the plant stand; however, these can be controlled by the use of pest resistant cultivars, disease-free and certified seeds. Cultural practices such as crop rotations, deep plowing, clearing off of the plant debris after harvesting and scheduled irrigation can be used to manage pests and diseases. The two diseases of major importance are sclerotinia wilt and blackleg. Contaminated seeds should be avoided.

Harvesting

It can be harvested directly with a combine harvester; timing of this operation is very critical to prevent losses