



# Canola

*Brassica spp.*

## Mating & Breeding System

Canola is actually a complex of three species in the mustard family, along with various hybrids, biotypes, and cultivars. The three species include *B. rapa* (formerly known as *B. campestris*; turnip rape, or canola), *B. napus*, and *B. juncea* (Indian brown mustard). All three species can readily hybridize with each other. Only *B. rapa* is believed to be fully self-incompatible, while *B. napus* and *B. juncea* will set seed readily in the absence of insects. Most of the canola currently grown in Canada is spring canola, which is the self-compatible *B. napus*. Most production occurs in the prairie provinces, but there is still a considerable quantity cultivated in Ontario, particularly in the northwest of the province. Although the canola industry is a major consumer of managed pollinator services in Canada, the crops pollination requirements are quite complex and are still not fully understood.

## Pollination, Quality & Yield

Honey bees will increase yield substantially in some canola crops. Wild bees can also play a significant role, with greater yields and profitability positively related to the amount of wild bee habitat that is available in the area (e.g., pasture or wild habitat). No effect of insect pollinators on oil or protein content has been noted, but the potential for cross-pollination to improve seed quality (e.g., oil composition) has not been fully investigated. Canola pollen can travel appreciable distances on the wind, and the relative role of wind and insects in pollination is not fully understood. In high density agricultural plantings, cultivars that normally require insect activity may receive sufficient cross-pollination from plants jostling against in each other in the field.

## Pollination Recommendations

Canola flowers produce large quantities of concentrated nectar and pollen that is high in protein. It has excellent nutritional value for bees and can strengthen weak colonies and help them fight disease. Beekeepers must watch the hives carefully for overpopulation and swarming concerns. Canola makes an excellent honey plant, although honey made from canola crystallizes easily and may be difficult to remove from combs using conventional equipment.

Recommended stocking rates for honey bee hives vary widely. Some studies have found large increases in yield that justify 4 colonies per hectare, or as many as 15. Others found smaller improvements that warrant only 1 or 2 hives. Some producers growing self-compatible varieties find that the benefits of adding managed pollinators do not justify the added cost. These



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## Pollination Recommendations (cont.)

growers in particular may benefit from methods to encourage wild pollinators and the “free” pollination services they provide. There are a number of studies that suggest that any grower can benefit from wild pollinator conservation. However, care should be taken in extending the results of the more “experimental” studies (e.g., those using pollinator enclosures) to commodity production. One study found that the blue orchard bee did an excellent job of pollinating canola in experimental plots, but this insect is likely not a viable option for large acreages due to availability and the high labour involved in its husbandry.

## References

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