Bees and Canola: Thriving Together

It makes sense that the Prairies are Canada's main production region for both canola and honey. Simply put, canola is good for bees, and bees are good for canola. Together, they are good for the health of our ecosystem and our economy.

Because of this important relationship, the Canola Council of Canada and the Canadian Honey Council are working together to encourage an optimal environment for both industries. This fact sheet explains the mutually beneficial relationship between bees and canola, and the steps canola growers can take to protect bee health.

How bees help canola

- **Pollinators are essential for hybrid seed production.** Advances in hybrid seed have been the foundation of the canola industry's success – and pollination is considered a must-have for production of quality hybrid seed, as they are critical to the pollen delivery from the male parent lines to female parent plants. Additionally, one study showed that the presence of pollinators can increase the germination of resulting seeds from 83% to 96%.[1]

- **Bees encourage higher yields with better ripening.** Although pollinators aren't essential for commodity canola production, several studies have shown that pollination by bees can improve both productivity and quality – in part because bees transfer pollen more efficiently than self-pollination in Argentine canola. Demonstrated benefits of bee pollination of canola include:
  - More uniform flowering and earlier pod-setting,[2] which has the potential to reduce green seed counts;
  - Increased number of pods per plant, seeds per pod and seed weight;[3]
  - Reduced amount of time canola blooms by 17%;[4] and
  - Increased seed weight per plant by anywhere from 13%[5] to nearly 50%.[6]

- **Bees may also help to control canola diseases.** Biological control of insect and fungal pests has shown promise, but the technology requires an appropriate delivery mechanism. Honeybees may be a solution. Researchers are exploring the potential for honeybees to spread beneficial fungi for keeping insects like Lygus bugs at bay.

Why bees love canola

- **Canola provides an ideal food source.** The sugar profile and quantity of canola nectar is great for honey production, and the plentiful pollen offers a good balance of amino acids, protein, and fats.[7]

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- **Canola provides an efficient means of feeding.** Bees don't have to cover large distances when flowering canola is nearby. Canola fields bloom for relatively long periods, so one field can provide bees with a good source of nectar for up to a month.

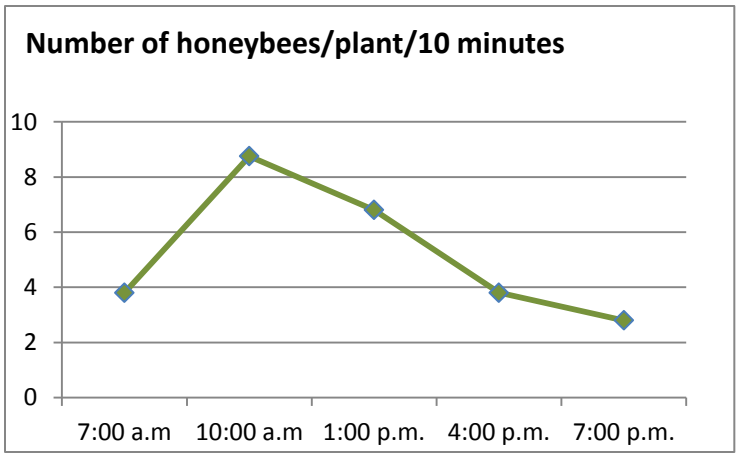
- **Canola honey is preferred by consumers.** The light colour and mild flavour make canola honey a top choice in the marketplace.[8]

How growers can protect bees

- **Talk to hive owners.** Communication is the most important tool for protecting pollinators. Growers are encouraged to share their pest management plans with honey producers in the area. Armed with this information, beekeepers can then reduce exposure by moving or covering their hives during spray applications.

- **Do not spray insecticide when canola is in flower unless absolutely necessary.** Wait until the field is no longer in bloom. If you must spray insecticide while canola is in flower, pay extra attention to the following precautions.

- **Spray after 8 p.m.** By this time, most bees have returned to the hive.



- **Avoid spraying during peak foraging times.** Studies show that bees are most likely to feed on canola in the early morning hours, when secretion of nectar is highest[9]. Bee visits peak around 10 a.m., and drop off noticeably by late afternoon. Bees are still foraging at 7 p.m., but the number of bees is only about a third of what it would be at the 10 a.m. peak.

- **Check weather conditions.** Pay careful attention to wind speed and direction, particularly as it relates to bee yards, or other flowering plants around fields.

- **Give good instructions to commercial applicators.** Tell the applicator exactly where hives are.

- **Use economic thresholds and integrated pest management.** By optimizing pesticide use and spraying only when it will increase profits, you can save input costs and reduce stress on bees.

- **Opt for the least toxic solution to control the pest problem.**

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What beekeepers can do

- **Maintain dialogue with farms operating near bee yards.** A gentle in-person reminder can go a long way toward raising awareness of the hives typically placed in sheltered areas.
- **Inform growers of the risks of insecticide use to bees**, and reference this material or provincial government extension data for best management practices to protect pollinators.
- **Consider covering or moving hives when insecticide applications are happening.** This can be challenging and can create risk of colony loss due to overheating and disturbance, but may prevent some losses.
- **Beekeepers are encouraged to report any acute bee kills** so the causes can be addressed. Please contact the Health Canada Pest Management Regulatory Agency.

Canola and bees today: co-existing very well

- **In recent years, the number of honeybees in Canada has increased to near-record levels.** In 2015, there were more than 722,000 honeybee colonies Canada-wide – up from 600,000 in 2000.[10] More than 70 per cent of these colonies are in Western Canada, where canola production has also grown dramatically.
- **The health of hives in Western Canada remains high as these two industries grow in close proximity.** The overwhelming majority of beekeepers have reported no concerns with canola production practices, and canola growers know it is in their best interest to protect this mutually beneficial relationship.
- **Bees are not affected by treated canola seed.** There has been no evidence that planting canola seed treated with neonicotinoid insecticides place pollinators at risk. Seed treatments used for canola remain on the seed and are not released as dust into the air, and field studies show no chronic or acute poisonings from seed treatments when analyzed at field scale rates.[11]

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For more information visit the Canola Council of Canada website www.canolacouncil.org.

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