

Seed Canola Pollinators

A Communication Guide for Seed Companies and Growers

Bees that Pollinate Canola

Honey Bee

The Western honey bee is a social bee introduced from Europe. Each hive contains one colony, consisting of a queen bee and her offspring. Worker bees cooperate to collect honey and nectar to feed developing brood. Honey bees are generalist pollinators and typically forage within 800 meters of their colony when nectar and pollen are available, but they can fly up to 12 km to forage if necessary. They begin foraging at 13°C. Honey bees are housed in wooden bee hives situated on the corners of seed canola fields.



Alfalfa Leafcutter Bee

The Alfalfa leafcutter bee is a solitary bee introduced from Europe. Female leafcutter bees each lay their own eggs in cocoons they construct from leaf or petal pieces which they fill with nectar and pollen. Male leafcutter bees can be distinguished by their reflective green eyes. They begin foraging at 20°C and typically forage within 100 meters of their shelter but can go to the field margins for leaf material. Leafcutter bees are housed in tent shelters placed throughout the canola field with nesting blocks that have holes where the female leafcutter builds cocoons.



What is Pollination?

- Pollination is the transfer of pollen from a male part of a flower to the female part of a flower, enabling later fertilisation and seed production.
- Pollen can be transferred within the same plant (self-pollination) or to different plants (cross-pollination).
- To produce hybrid canola seed, pollen-coated insects must first visit the male-fertile plants and then visit the male-sterile plants.

Pollination Management

- There need to be some canola flowers in the field before honey bee hives are brought in, or the honey bees will learn to forage elsewhere.
- Honey bee hives cannot be relocated within the field once placed, as moving hives short distances causes honey bees to get disoriented and lost.
- The seed company should provide information about locations for the honey bee hive drop sites and how they will be marked, as well as requirements for management of seed field corners.

- A staggered removal of honey bee hives often occurs during late bloom as there are no longer enough flowers (and therefore food) available for a large number of hives. This does not reduce pollination; the remaining honey bees and leafcutter bees are still pollinating.
- The honey bee hive drop location needs to be continuously dry, safe, and accessible, as honey bee hives are moved at night by heavily loaded tandem trucks pulling forklifts. The beekeepers will need to access the bee hives multiple times.



- When leafcutter tent shelters are to be placed, the ground needs to be dry enough for trucks to enter and not get stuck. Additionally, irrigation pivot tracks need to be visible so leafcutter tent shelters can be placed appropriately.

Irrigation Management

- After the field is stocked with leafcutter bees, refrain from turning on the irrigation pivot until the leafcutter bees have hatched (this is weather-dependent, but a minimum of 36 hours is required).
- Discuss with the leafcutter bee producer if and how irrigation drop tubes need to be wrapped to prevent hitting leafcutter bee shelters.
- The irrigation pivot end guns should NOT hit honey bee hives. The water can enter hives and kill honey bees or brood.

All bees need continuous access to three things: nectar, pollen and water.

Pesticide Safety

- Always consult with the agronomist prior to spraying anything on the seed canola field.
- Blooming canola should NEVER be sprayed with insecticides - this is harmful to all bees and can cause residues in honey.
- Be cautious when spraying fungicides or tank mixes containing fungicides when bees are in the field; new research indicates these may be harmful to honey bees.
- If any product must be applied to the field, spray in the evening after all bee flight has ceased for the day.
- Do not spray over honey bee hives or beekeepers.
- Keep chemical application records, and provide them to agronomists or beekeepers if requested.
- Give sprayer width to leafcutter bee producers to avoid damage to shelters.
- Refer to “Practices to Reduce Bee Poisoning from Agricultural Pesticides in Canada” document on the Canadian Honey Council website http://honeycouncil.ca/wp-content/uploads/2018/12/Reduce.Bee_.Poisoning.CanadaGuide.FINAL_.noBros2.pdf



Canadian Honey Council

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