

Seed Canola Pollinators

A Communication Guide for Agronomists and Beekeepers

What is Pollination?

- Pollination is the transfer of pollen from the 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.

Preparing for Bees in the Field

- The agronomist and beekeepers or leafcutter producers should visit the field together to determine access and placement of hives and shelters.
- When placing leafcutter tent shelters, 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.
- Discuss with leafcutter bee producer if and how drop tubes need to be wrapped to prevent hitting leafcutter bee shelters.
- The honey bee hive drop location must be continuously dry, safe, and accessible, as honey bee hives are moved at night by heavily loaded tandem trucks pulling forklifts. Beekeepers need to access the bee hives multiple times.
- Sweep for pests before any bees are placed to allow time for pest control, and use economic thresholds to determine if and when to spray.

While Bees Are in the Field

- Always refer to the percent bloom guide. The best practice is to bring in leafcutter bees at five per cent bloom and honey bees at 10 per cent bloom. Honey bees need to forage on nectar and pollen and, if it is not available in the field, the honey bees become accustomed to foraging elsewhere.
- 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).
- In the event a field is hailed out, leafcutter bees and honey bee hives may need to be removed due to lack of forage. The agronomist should communicate any hail to beekeepers and leafcutter bee producers within 24 hours.
- Contact the beekeeper if you notice anything amiss with the honey bee hives such as hives knocked over, lids off, or honey bee swarms.
- Tell the leafcutter bee producer of any problems such as shelters knocked over or problems with leafcutter bees in nearby houses and gardens.



It is essential for agronomists, beekeepers and growers to remain in contact and have contingency plans in case of complications.



Canadian Honey Council

For more information, e-mail bee@gov.ab.ca

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Removing Honey Bees from the Field

- Refer to the percent bloom guide when removing honey bee hives from the field.
- There are quickly declining resources for such a large population of bees; consider a staggered removal of honey bee hives as bloom wanes.
- Agronomists are responsible for communicating, in a timely manner, to beekeepers and leafcutter bee producers when hives and leafcutter shelters can be removed.

Pesticide Use

- 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 that fungicides can 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 agronomist or beekeepers if requested.
- Give sprayer width to leafcutter bee producers to avoid damage to shelters.
- Refer to the Canadian Honey Council's ["Practices to Reduce Bee Poisoning from Agricultural Pesticides in Canada"](#)

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The 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 metres 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 lay their 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 fly within 100 metres of their shelter but can go to the field margins for leaf material. Leafcutter bees are housed in orange tent shelters placed throughout the canola field with nesting blocks that have holes where the female leafcutter places cocoons.