



Hive Placement Considerations

Why Hive Placement is Important.

Honeybees are funny little critters, as they aren't like other pollinators. If the conditions aren't perfect, they won't fly. This means that if it's too cool, windy, or wet, they will stay home, taking away from excellent foraging opportunities that bumble bees and solitary bees take full advantage of. Therefore, hive placement is generally considered as a key way to ensure maximization of potential honey production. But, I feel as hobbyists, that the priorities change as the potential locations available on your small urban property or on other properties of family or friends away from home.

I feel that as a beekeeper, it is as important to place the bees in a convenient location for you to access and ensure the proper care and maintenance of the hive. It's a balanced relationship between you and your bees. That being said, it is very important that you place your bees in a good location and permanent location for the summer.

Can I change the hive location in the summer if it isn't a good fit?

There is a saying, "5 feet equals 5 kilometers". That means that you cannot just pick up a beehive and move it across your yard out of necessity. Honeybees have a very detailed map of their environment, and when they fly out foraging, if they see the usual markers of location, they will muster where the hive *was*. And since bees can fly up to a 5km radius from the hive in their search for nectar, they have a detailed map of the 5km radius from the hive. So, moving your hive either in small increments over time or one major movement (over 5 kms away) for over a month in the summer months is essential if a move is necessary.

Location Considerations

Below are a list of considerations that will aid you in selecting a great location for you and your bees, ensuring that both of your needs are met, as well as those neighbours around you.

1) Sheltered from prevailing winds?

Honeybees do not like the wind whipping in to their hive. It can make it challenging for the bees to regulate the temperature of the hive and keep brood warm. If the bees have a lot of wind and or wind coming in the hive, they will fly less and put energy in reducing the entrance with propolis. A lot of wind at the entrance of the hive can make the bees more aggressive when doing inspections, as there will be more bees in the hive on inspection, stress levels may be elevated, and the amount of nectar and pollen coming in will be less than normal.



2) Direction of the Landing Board?

Honeybees love the sun, and plants have a higher nectar load in the morning, so it is best to place the hives in a way that will allow for morning sun to flood the entrance of the hive earliest in the morning: East.

3) Lots of Sun or Dappled Sunlight?

Honeybees love the sun as it warms the hive up, makes it easier for the bees to keep the brood nest at a balmy 33-36 degrees Celsius. So, many hives are painted white but placed in open fields without much concern for the hive overheating. How can that be when the hives may be in 30 degree heat for hours a day? Honeybees are able to cool down the hive by fanning at the entrance, forcing air in to the hive and offering air flow through the dead air spaces. The bees also need to evaporate the excess moisture from the nectar to appropriately *ripen* the honey (14-22% moisture content for honey). This evaporation process takes energy, and therefore works as an air-conditioning system within the hive. If it is exceptionally hot, the bees will carry water in to the hive, bead it on to the comb and walls, and evaporate that. Bees carrying and gathering water aren't gathering or carrying nectar though, so it is best to not have a hive over heat.

Horizontal Hives vs. Vertical Hives in the Sun

Convection currents work in a vertical space very effectively. This means that hot air rises and cool air sinks. This is because of the energy of the air molecules (*high* energy equals *higher* temperature and *more* space between the molecules, and therefore *less* dense, and vice versa). Because of this, Langstroth and other vertical hive designs manage higher temperatures better than horizontal hive designs. Convections aren't as successful in a horizontal design, but there are ways to combat this. One way is to have a cork-hole at the back of your horizontal hive to create a vacuum, allowing for more even air flow and decreasing the chances of dead air spaces which cause potential comb melt. Another common option in lower altitudes and areas with consistent weather (therefore, not Alberta) is to have a screened bottom board, allowing for consistent air flow throughout the bottom of the hive and making the convection work without much trouble. Another option is to create spaces less than 3/8" (bee space) between brood bars, which will allow the air to move out from the hive centre. The bees will propolize this closed if they don't like it later in the season, so it is best to keep an eye on this during inspections. Remember, if the space is greater than 3/8", the comb will be built thicker and can make for an increased challenge in inspection.



4) Watering Sources?

Bees are organisms. I know that this sounds like a weird thing to say, but there are many times that I have chatted with beginner beekeepers and they forget that bees need water, breathe air and exhale carbon dioxide. As mentioned about sunlight, water is an imperative in the bees' consumption, but also in the maintenance of hive temperature in the summer months. Having a clean water source for honeybees is important in ensuring hive health throughout the year. Here are some tips about bees and water:

Moving water vs. still water?

Moving water, like a river, stream or creek will draw in the bees as the scent of water is alluring, but the challenge? Bees can drown very easily so they prefer areas where they can stand on wet rocks, mud or grass comfortably. This means that because there is a moving water source, it doesn't mean that the bees are actually going there for water. Bees actually prefer a still water source, wet soil, or rocks.

Hot Tubs and Neighbours Pool?

There are problems in urban spaces when you don't know where your bees are gathering water from. It could be a kiddie pool a block away, a hot tub, dog bowl, bird bath. How can you encourage bees to gather water from your own back yard or placed water source?

- ***Lemongrass or wintergreen essential oil and sugar:*** When you have decided the location that you have set up for your bees to gather water from, you can encourage them to orient to the water location by using a few drops of oil and a tablespoon of sugar. Eventually you can completely cut out the additions to the watering source as the bees become accustomed to using the location.
- ***Don't let the water source go dry:*** If you let the water go dry, the bees will focus on finding another watering source and orient to that new location, which will force you to start the oil and water regiment again.

Accessibility: All weather?

If you are going to keep your bees in the same location throughout the seasons, or move them in the winter and spring, it doesn't matter. What matters is that you are able to access the bees when you need to do inspections in all weather conditions. Spring melt off makes streams turn to rivers, ground can become boggy, snow can make road conditions bad, and summer storms can make hive inspection conditions change on a dime. Whatever the location, it is important that you take in to consideration past weather and environmental conditions before placing the hive there.

Grass Down at the Entrance?

If you are keeping your bees in your own backyard, it can be easy to maintain the hive entrances and ensure that the entrance doesn't become overgrown with grass and weeds. The growth of grass covering the entrance can diminish the bees ability to fan air currents for ventilation, orient to the



Entrance, can increase honeybee *drift* (bees migrating to other nearby colonies more easily accessible). So, here are a few easy solutions:

- **Tile entrance:** Placing a flooring ceramic tile below the bottom board will keep the grass down but also allow for you to see what has been kicked out of the hive since your past inspection
- **Plywood Floating:** You can take a piece of plywood and float it on the grass of your apiary, like the believed strategy of making of crop circles. Flipping and stepping on the plywood as you move through the yard, the grass will bend and break, flattening out the yard and keeping the grass down.
- **Whipper Snapper or Scythe:** Use as directed.

Activity at the Entrance?

Activity near the entrance is a consideration that you must make if you are keeping your bees in an urban location. You should take a moment to consider your activity in your yard, including family members and vehicle traffic. The more activity that takes place in front of the hive means more bees orienting to the changing scape, bees being inquisitive, and potentially increasing in the stress of the hive. You don't want to face the hive toward a parking space where the car moves in parks and leaves daily, nor do you want the entrance to face a **busy** pathway. Activity in front of the hive isn't a problem if it is sporadic, or inconsistent, like in the garden.

Spring Nectar Sources?

It is nice to have your bees placed in a location where the bees can readily access tree flowers like willow, hawthorn, linden, ash etc. so that the bees can access nectar and pollen earlier in the year to aid in hive health and buildup during that tough time and decrease your sensation of needing to feed your bees

Forage within 3.2kms?

Take a drive around your bee yard and think about what the bees have access to eating throughout the year. It is a great practice as it encourages you to look at nature from a different perspective: from the perspective of a bee. Consider monocultured fields, golf courses, parks, football fields, industrial parks, railway tracks, ditches, and water ways. These are all good indicators of what the bees have access to. Also consider the local regulations of cosmetic pesticide use on city and municipal lands. There are many advocacy groups seeking to change bylaws and I am sure that they would like to hear from you and have a lot of information to share with you on the subject of products used and localized application dates.

Overcrowding?

Having too many bees in an single area can cause for competition between honeybee colonies, and also between native bee populations and the honeybees. So, it is best to find out if there are beekeepers near you. Through A.B.C, we keep track of the beekeepers receiving bees through our Community Hive, and you can see how many colonies are in your postal code area. Many cities and municipalities have licensing arrangements in place, so contact your local authorities to find out what you can. Taking a drive around will help too, giving you a visual idea on the bees in the area.



Vandalism and Theft?

There have been thefts of honeybee colonies reported annually throughout Canada. It is important that where you place a hive, rural or local, that you don't place the hive conveniently close to a road way or pathway. Vandalism in an urban space is also a consideration when placing a beehive. Think of the worst case scenario and place a hive with those considerations to ensure safety of your bees and of your community.

Away from Livestock, Bears and Predators?

Skunks, bears, cows and horses can be a challenge for a beekeeper. It is very important that you place the hives in a location that will not lure bears in. Using electric fencing is a great way to deter bears from attacking your hives. Also ratchet strapping your hives together and to a pallet can make it harder for the bear to get in to the hive. Skunks will scratch at the entrance of the hive at night, and as the bees come out to investigate, eat the bees. A skunk can eat a 20,000 bee colony in a couple of evenings. So, keeping an eye on the entrance during inspections to see if there has been any skunk activity will aid you in making decisions about predator removal.

Livestock is an issue when keeping bees in rural locations. Cows will rub up against the hives and knock them over, as well as horses, so having a barrier between livestock and bees is necessary.

Travel Time between You and Your Apiary?

This is a behavioural consideration with humans, not bees. It is great to place your bees at a great location for the bees, but if it is inconvenient for you to access your hives for inspection once every 10 days, then you should consider moving them closer to you. As a beekeeper, you are responsible for the maintenance and care of your colonies. So, place the bees where you will access them the most and reliably so.

Register your Bees with Government Body (Municipality and or Province)

You MUST register your honeybees with your Province or State. If not for the legal responsibility of taking part of a form of animal husbandry, but to also offer a realistic statistic on the population of honeybees managed by hobbyists. The only way that your community is going to get greater consideration of educational programming and support from the Province or State is to allow them to see the cost benefit of putting on the programming. As beekeeping increases in popularity, it is imperative that these numbers are accounted for and maintained. Also, as a registered beekeeper, you have access to resources, information, and hive inspection support if something goes wrong in your apiary.

Fencing and Bee-line Considerations?

Flight path of the honeybees is called a 'bee-line'. Think of it like planes landing on an aircraft carrier. You have a 3ft buffer between the landing board and your options for altering the directionality of the bee-line. You can place barriers at the 3ft distance to encourage the bees to fly up or to the side. You can do this by putting the bees by a fence or artificial barrier. This will force the bees up and to continue on their bee-line at a height upwards of 6 feet, taking the direct flight pattern out from the yard or neighbour's yard.



What About Bee Poop?

Bees do not poop within the beehive, and therefore will poop on their exit from the hive. This means that if the hive is facing the side of a house, fence, or vehicle, there will be streaks of bee poop on these locations without much that can be done to stop it. This is noticed more greatly in the winter and spring months as the bees don't fly as far from the hive, so the density of the poop increases. Bee poop can be very difficult to remove. Coca Cola and a tooth brush works on vinyl siding and vehicles, but it is tedious to remove. So, keep this in consideration when placing bees in a location that you are planning on wintering them at.

