



BEE-KEEPING

The Honey Bee is only one of approximately 100 different bee species in Ireland. Some are solitary, others live in colonies. *All are in decline.*

Honey Bees are "social" insects and live in a hierarchical association where their lifestyle and bodily form are determined by their inherited role.



About Bees

Queen

The queen is the only female who reproduces. She grows larger than the others and reproduction is her permanent job. When the queen takes her place in a hive she is mated by as many drones as can reach her, and carries all the eggs she will ever lay. Multi-drone mating ensures a good gene pool. The queen bee can live for as long as seven years.

A balanced hive has only one queen.

A sign of the hive having problems is if queen cups are being made, to nurture new queen bees. It could be a sign that the queen has died, stopped laying, or that the hive is preparing to swarm.

Workers

The worker bees collect the nectar and pollen, process it and care for the brood of eggs/larvae. They are great housekeepers, keeping the hive spotlessly clean.

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One of the most fascinating things about the beehive is "The Waggle Dance":

When a worker bee finds a good source of nectar, it flies back to the hive and performs a series of movements telling the other bees where it is. It is thought that this "dance" narrates the distance and direction in which the other bees must fly to find the food source.

Drones

Drone bees are male. Their work is to mate with a queen and to spread the hive's DNA to other hives to ensure the general bee population has good diversity. Once they have mated with the queen, they die; their job is done.

The Life-Cycle of the Honey Bee

1. All bees begin their lives at the egg stage. The egg hatches into larva, like a small grub.
2. Larvae are fed by the worker bees. They grow until it is time for them to become pupae.
3. Worker bees cap over the honeycomb cell and the larva spins a cocoon, just like a butterfly does. It becomes a pupa.
4. Safe inside the sealed honeycomb, the pupa will metamorphose, changing completely, and will emerge as an adult bee.
5. Once ready to emerge, the young bee will eat the seal on the honeycomb and push its way out.

The average life of a worker honey bee is six weeks.

A small number of worker bees will live through the winter with the queen to start the following season off safely.



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Hive Management

In nature, bees will find their own home. They are, unlike most domesticated animals, self reliant.

In earlier times humans would find and rob honey from wild nests. This could be very dangerous as the bees nest high up in trees, and other inaccessible places. Over time the art of bee-keeping evolved; this is easier than searching for bees and up trees in the wild.

There are many different types of hives around the world, most use a stack system with the Queen laying eggs in one area and the honey being stored in another. This allows people to manage the bees more effectively, setting them to work in areas such as orchards.



In some African villages, hanging bee-hives are used on the borders of farmland, as an effective deterrent to elephants. The elephants are not going to cross through the hives---they don't like being stung any more than we do!



Day to Day Maintenance

From spring to autumn, the hive needs to be inspected weekly: to check that all is well and monitor activity.

During the winter, the hive needs to be monitored but not disturbed unless there is a problem. The bees may need to be fed, although good organic bee-keeping leaves them with enough honey to feed themselves.

Bees have stings. This is their main defence against attack from invaders. They do, of course, see the bee-keeper as an invader, especially as we take their honey. Bee-keepers use white protective clothing and slow movements to help protect themselves from bee attack.

Before opening the hive the bee-keeper will puff a cool smoke across the top, this fools the bees into thinking that there is a fire. They then load up with honey to save it, this makes the bees slower to move, as well as calms them. Regular inspection of the hives will help to keep the bees calmer, they get used to the routine.

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What is the Bee-keeper looking for when the hive is inspected?

- If the Queen is alive and happily laying eggs.
- If there is food coming in.
- If there are any invaders, such as mice or wasps.
- If there are signs of parasites or disease.
- If there are enough honey frames available.
- If the colony is preparing to swarm.



Swarm Control

In nature, bee colonies reproduce by dividing the colony, with approximately one-half leaving with a new queen. This is called *swarming*.

- ⇒ Swarming is caused by overpopulation in a hive. Each hive has only one queen; she exudes a scent so that all bees know who she is.
- ⇒ If the population grows too large, many bees will not be exposed to the queen scent. So a message goes around that a new queen is needed.
- ⇒ New queens are produced to divide the colony and one of the two colonies will swarm off to find a new home.

Beekeepers must try to avoid this!

It weakens the remaining hive in terms of producing honey. And so they must manage the hive to ensure there is always plenty of room, and stop new queens from developing.

Pests and Diseases

Bees, like all other life, need energy and nutrients to build their bodies. Other life-forms may attempt to exploit the bees and to appropriate them or their resources.



Modern agriculture is maybe the largest pest to the honeybee, indeed to all of nature.

- ⇒ The use of herbicides, pesticides, and chemical fertilisers.
- ⇒ Also, the lack of hedgerows and meadows where wildflowers flourish can threaten honey bees.

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There are many bee diseases:

- Varroa Mite
- Honey Bee Tracheal Mite
- Small Hive Beetle
- The Bee Louse
- The Greater Wax Moth
- American & European Foulbrood
- Chalkbrood
- Bee Parasitic Mite Syndrome
- Sacbrood
- Nosema

Non-organic bee-keepers use chemicals as part of their hive health. However, the main protection the organic bee-keeper can provide is through informed observation. Herbs and essential oils can help, too. Early detection of problems allows for their spread to be prevented.

Honey Extraction

People keep bees because they are good pollinators, but the main reason is for their honey.

When there is enough honey, the bee-keeper will take some. There is a process to do so:



1. The bees need to be cleared away from the honey frames. This is done by putting in a one-way gate so that they cannot return once they have left. They will gather in the brood frames at the base of the hive.
2. The honey frames are taken off and brought indoors, with windows and doors closed so that bees cannot find them.
3. The honey is taken off the frames, by using a centrifuge.
4. Once separated the honey will be filtered, it may be treated or may be left raw and stored ready for use.
5. Beeswax and Propolis are other products of the beehive that may be used.
6. It is important that *not all the honey* is taken from the bees. It is their food source!

As the bees approach winter, they need to have enough food to see them through to spring. Some bee-keepers will leave them enough honey, others will feed them with sugar fondant.

Bee-keeping-Related Websites & Videos (click for links)

- ⇒ [The Federation of Irish Beekeepers Associations](#) ⇐
- ⇒ [Natural Beekeeping](#) ⇐
- ⇒ [Beekeeper Supplies](#) ⇐
- ⇒ [Organic Beekeeping](#) ⇐
- ⇒ [Starting Organic Beekeeping For Beginners](#) ⇐

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