



Atlantic Tech Transfer Team  
for Apiculture



# BEEHIVE BASICS: The Startup Setup

## LANGSTROTH HIVE EQUIPMENT

### HIVE STAND:

Beehives rest on hivestands for foundational support. It is important that hives do not sit directly on the earth to prevent rotting of wooden ware. Salvaged wooden pallets are the most accessible and common option used by beekeepers in the Atlantic region. Large companies involved in migratory beekeeping might group hives on custom made pallets designed for transport with a forklift. For backyard beekeepers, commercial beehive stands are also available.



Courtesy of Country Fields

Some common options for hive stands include:

1. Wooden pallets
2. Commercial beehive stands (photographed above)
3. Concrete blocks

### BOTTOM BOARD:

A bottom board is the removable floor of a Langstroth hive on which hive boxes are stacked. There are two main types of bottom boards:

1. **Solid bottom board**
  - Reduced winter draft
  - Offers two rim heights; a short winter rim and deep summer rim allows seasonal reversal
2. **Screened bottom board**
  - Opportunity for passive pest management (e.g. varroa, small hive beetle) as pests fall through the screen and are unable to reenter the colony
  - Increased ventilation

It is important to place bottom boards on a level surface to provide a strong foundation for the hive and to prevent water from accumulating within. Excess moisture can rot woodenware, chill bees, foster mold and foul odor.



Courtesy of Country Fields



### Funders and Contributors:

Bleuets NB Blueberries  
New Brunswick Beekeepers Association Inc.

Nova Scotia Beekeepers' Association  
Wild Blueberry Producers' Association of Nova Scotia

Prince Edward Island Wild Blueberry Growers Association  
PEI Beekeepers' Association

## HIVE BOXES:

Hive boxes, also called "hive bodies," "brood chambers" and "honey supers," are the walls of the hive and are designed to hold removable frames. Standard hive boxes fit 10 frames and measure approximately 16 5/8" x 20", subject to manufacturer variations. Depending on their purpose, hive boxes vary in depth as follows:

### 1. Deep (9 5/8")

- The main hive body, the portion containing the queen and brood nest, is typically 1 or 2 deep boxes called the brood chamber
- Sometimes used as honey supers

### 2. Medium (6 5/8")

- Typically used as honey supers
- Sometimes used as brood chamber

### 3. Shallow (5 3/4")

- Used as honey supers



Courtesy of Country Fields

Medium and shallow hive boxes are more manageable as honey supers, compared to deep hive boxes, because they are less heavy at harvest time. A deep super full of honey can weigh upwards of 70 lbs., while a full shallow super will be a closer to 30 or 40 lbs.

New hive boxes are available untreated or treated with a wax paraffin dip. A wax dip will provide protection from weather and improve the longevity of woodenware. Alternatively, untreated boxes can be protected by painting the outside walls, only.

## FRAMES:

A Langstroth hive typically holds ten frames. Frames provide a distinct space for worker bees to draw out comb, which can then be removed and examined by beekeepers. This is facilitated by foundation, which is a sheet of plastic or wax within the frame that has been imprinted with hexagons the size of worker bee cells. Anecdotally, honey bees show preference for building new comb on wax foundation. Nonetheless, plastic foundation is a popular choice because it is available at a lower cost and is more durable during honey extraction.

There are two main types of frames:

### 1. Wooden frame

- Option to use plastic or wax foundation

### 2. Plastic frame

- Typically plastic foundation only

Once a frame has been built up with comb it can be referred to as a "drawn comb" frame which will either be used for brood rearing or food storage. It is a good practice to rotate drawn brood comb regularly. See the ATTTA factsheet on "Comb Rotation" for more information!



Courtesy of Country Fields

## LIDS & COVERS:

Hives are topped off with two covers. The inner cover lies directly on the topmost brood chamber or honey super, and the outer cover lies on top of this. The outer cover has a rim which hangs down (telescoping) and provides shelter over the upper entrance of the hive. Without an inner cover, the outer cover would become secured to the hive box with propolis be difficult to pry off.

### 1. Inner cover

- A notched inner cover provides bees with a top entrance, ideal for winter cleansing flights and improved ventilation
- A deep, rimmed inner cover provides extra space for insulation and moisture control in winterization

### 2. Telescoping outer cover

- Features a durable metal covering for extra protection from the elements
- Rim provides shelter over upper entrance

### 3. Migratory outer cover (not pictured)

- Easier to use with a common cover
- Less costly and simpler in design than telescoping outer cover

### 4. Common cover (not pictured)

- A large cover designed for a group of hives on a single pallet. This cover can be secured in place to protect beehives as they are moved in migratory beekeeping.



Courtesy of Country Fields

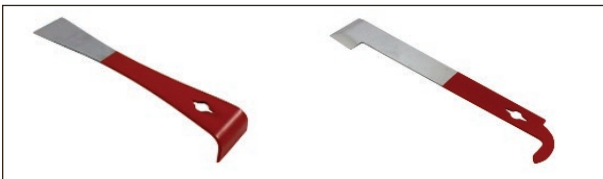
## BEEKEEPER EQUIPMENT

### HIVE TOOL:

The hive tool is a beekeeper's main tool. It is regularly used to pry off inner covers, arrange frames, separate stacked hive boxes, and scrape equipment of excess wax and propolis. There are two main styles of hive tools to choose from:

1. Standard hive tool – similar to a small pry bar
2. Hook end hive tool – has a small hook on one end specifically for leveraging frames

To reduce the spread of pests and disease, it is a good practice to disinfect hive tools regularly and before use in different apiaries. For a brief tutorial on how to effectively clean a hive tool, please see the video "[Cleaning Hive Tools](#)" in [ATTTA's Canadian Beekeeping Minutes series](#).



Courtesy of Country Fields

### PROTECTIVE CLOTHING:

The most important piece of personal protection for a beekeeper is a veil to protect the head, face, and neck areas from unwanted bees. With this foundation, there are additional protective options available for the rest of the body. Typical protective clothing includes:

1. Just the veil – protects the head and neck
2. Veiled jacket – protects the head, neck and the upper body
3. Veiled suit – protects the entire body, excluding hands and feet

Beekeeping gloves are available to protect your hands. They are typically leather or synthetic leather to prevent stings from penetrating. The disadvantage of beekeeping gloves is that their thickness can impede dexterity in handling frames and other equipment. Experienced beekeepers with gentle bees will often opt out of wearing gloves for comfort and ease of handling.



Courtesy of Country Fields

### SMOKER:

The smoker can create a better beekeeping experience for both bees and beekeepers. Smoke stimulates bees to move down into the hive and gorge themselves on honey, making them less prone to stinging. If a sting does occur, smoke also helps to mask the subsequent alarm pheromone and prevent a larger chain reaction. Smokers are available in various sizes. Common fuel for smokers include woodchips, straw, 100% cotton rags, untreated burlap, bark, pine needles. Adding a handful of green grass or herbs on top of a full, lit smoker is an effective way to protect bees from sparks and cool the smoke before it is released. A high quality stainless-steel smoker is going to provide many years of service is a valuable investment for committed beekeepers.



Courtesy of Country Fields

### BUYING USED EQUIPMENT:

Precaution must be taken when buying used beekeeping equipment as it can be a reservoir of persistent and infectious honey bee pests and disease. For this reason, there are provincial guidelines which must be followed. An examination by a provincial inspector may need to be performed prior to purchase of any used hive components in some regions. Certain equipment can be disinfected through torching, such as hive tools, hive bodies, covers, and bottom boards, which is highly recommended. Even so, the only way to be absolutely certain that used equipment is free of all pests and disease is through irradiation. Given the high risk and relatively low reward, it is recommended to practice extreme caution in buying used beekeeping equipment.

### OTHER RECOMMENDED PURCHASES:

#### HONEY BEE DISEASES AND PESTS REFERENCE BOOK:

The ability to recognize and manage common honey bee pests and diseases is essential to successful beekeeping. The Canadian Association of Professional Apiculturists (CAPA) has written a reputable, comprehensive guide to provide this information to beekeepers, specifically targeting the Canadian beekeeping industry.

### LOCAL BEEKEEPERS' ASSOCIATIONS:

Becoming a member of your local beekeepers' association is a great way to connect with other beekeepers in your area and provides a rich opportunity for learning, networking, and involvement within the beekeeping industry. In the Maritimes, joining your local beekeepers associations can also help connect you with the lowbush wild blueberry industry for pollination services. Some members have many years of experience and hold a wealth of beekeeping knowledge which they are typically eager to discuss and share with those who have a passion for honey bees and desire to learn.