

# BEEKEEPING EQUIPMENT — TOOLS

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When perusing any beekeeping catalog, an array of helpful tools can be found. Because there are so many options, this factsheet will cover some of the more basic beekeeping tools.

First and foremost, a hive tool (Fig. 1) is a must for beekeeping. Hive tools allow the beekeeper to break propolis—a substance bees produce from wax and tree resin to seal up their home. Propolis is extremely sticky, and worker bees propolize any space too small for them to fit through.



Figure 1. Standard and J-hook hive tool

Hive tools allow the beekeeper to open the top of the hive, loosen and remove frames, clean propolis and burr comb in unwanted spots, and break apart boxes. The beekeeper should never enter the bee yard without a hive tool.

Standard hive tools (Fig. 2) have a flat, sharpened end for prying between boxes and scraping. The curved end of the basic hive tool helps break apart frames that are propolized tightly together. The beekeeper should never pull or push to break apart the propolis. Doing so will jerk the frames and upset the bees. The beekeeper should use slow, steady movements, using the tool as a lever and moving sideways to push frames apart.

J-hook hive tools (Fig. 3) also have a flat, sharp end, but they have a J-shaped hook instead of the lever end. The J-shaped hook is extremely useful for pulling up frames.

By placing the J-shaped end between the frames and moving the tool in a crank-like manner, the frame lifts so that a finger can be inserted underneath to pull it up.

A smoker (Fig. 4) is arguably the second most important tool for a beekeeper. Smoke blocks the honey bees' ability to sense pheromones, which are detected by the antennae. Alarm pheromones can elicit an aggressive reaction in the bees, and smoking calms them. It also forces them lower into the box, leaving fewer bees in the way as beekeepers pull and inspect frames.



Figure 2. Using a standard hive tool to break propolis between frames

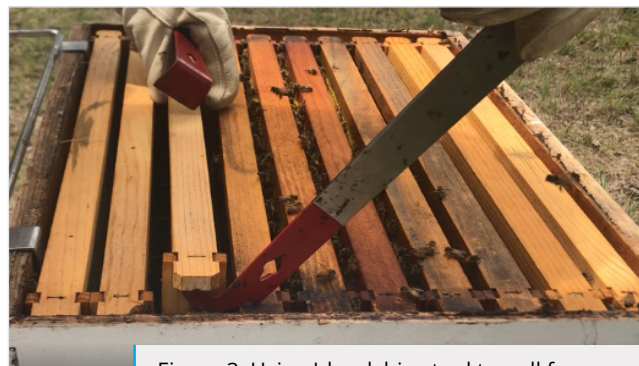


Figure 3. Using J-hook hive tool to pull frames up

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Figure 4. Smokers

Smokers have plastic and leather bellows, tall and shorter smoke chambers, round and cone-shaped tops, and come with or without heat shields. The only recommendation this factsheet will make is to purchase a smoker with a heat shield to prevent burning yourself and/or the bee suit. Always make sure the fire in the smoker is completely out before walking away from it— especially before putting it inside a closed vehicle. Smokers have a tendency to reignite.

All beekeepers have their preference of smoking material. Smoking materials may be purchased (burlap, smoking pellets, or cotton) or found on the property (wood, pine needles and other burnable items). Always make sure the items are not coated in any chemicals, which may harm the bees, especially if they are not purchased from a reputable beekeeper or supplier. Also, always use food-grade burlap and untreated wood.

To start the smoker, fill it with a preferred smoking material, then light the material on fire and allow it to briefly burn before closing the chamber. Make sure the flames are out and the materials are only smoking before using on bees. Depending on the use and size of a beekeeper's smoke chamber, smokers can continue to smoke for the entirety of their time with the bees or may need to be refilled periodically. This is something a beekeeper will learn how to estimate over time.

Electric smokers are also available. They have a small electric fan built into the handle and run on rechargeable batteries but still need fuel to burn.

Many beekeepers also use bee brushes (Fig. 5), which are useful for moving bees off of frames or boxes to prevent smashing bees when viewing the frames. Brushes are also



Figure 5. Bee brush

a useful tool when clearing frames of bees to extract honey. They should be used with a flicking motion—not a smooth brushing motion—to avoid tangling bees in the bristles. The bristles need to be soft. Do not allow the bristles to get gummed up with honey, as this will damage the bee wings.

A frame grip (Fig. 6) is a useful tool, especially when working the bees alone. Frame grips allow the beekeeper to pick up the frame with one hand, leaving the other hand free and make picking up heavy frames easier. When a beekeeper is using only their hands, they will need both to pick up a single frame. Frame grips can come with a small hive tool welded to the end, making them an all-in-one tool.



Figure 6. Frame grip

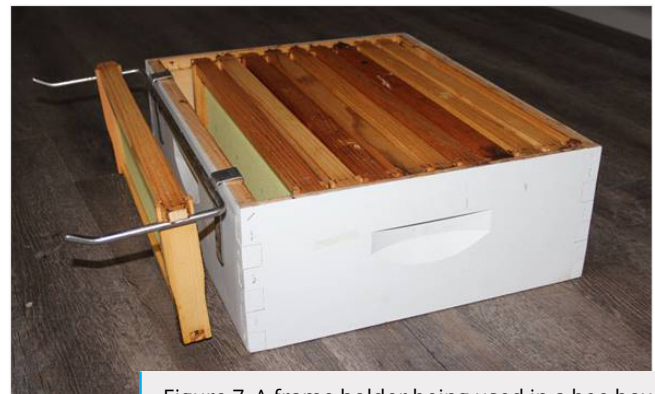


Figure 7. A frame holder being used in a bee box

Frame holders (Fig. 7) are valuable when inspecting frames. They create space for the beekeeper between frames so that they do not accidentally roll the bees off the frames by rubbing against an adjacent frame. Hanging a frame holder over the end of the hive box allows the beekeeper to hang frames and avoid placing them on the ground. Do not place too many frames on the frame holder. Two or three is a good number and allows for enough room inside the box to move frames. Beekeepers should avoid placing brood frames (i.e., frames with eggs, larvae, or pupae) on the frame holder to prevent cooling the brood down and endangering their viability.

Additional online resource available through AgriLife Learn, Beekeeping 101: <https://agrilifelearn.tamu.edu/product?catalog=ENTO-025>