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## Conducting a Hive Inspection

It is common for me to get questions related to proper techniques for inspecting hives. Beekeepers, especially new beekeepers, want to know how often they should inspect their hives, what tools are needed when performing a standard inspection, and what they should look for when inspecting a hive. I will address these questions herein. I will note that inspection strategies and frequencies change based on the time of year, the number of hives one has to inspect, and what one hopes to accomplish with their hives. Correspondingly, I will limit myself to discussing what one should do during the most basic of hive inspections.

### Common Equipment Needed for Hive Inspections

Beekeepers need the appropriate equipment before they can conduct a successful hive inspection. Of course, the equipment a beekeeper needs with him/her varies tremendously depending on the intent of the inspection. Most general inspections can be performed with little more than a smoker, hive tool, and bee veil. The more complex inspections (those during which multiple management activities such as feeding, medicating, supering, etc. are performed) require more than the basic equipment. Given the diverse nature of inspections, I will focus on the most basic equipment one would want with them when conducting a general inspection. I will start with the necessary equipment (i.e. that equipment I think you need with you every time you inspect a hive) and follow that with a list of optional equipment (equipment I personally think is best

to have with you, though I admit that not everyone will need what I list).

#### Necessary equipment

**1) hive tool** – This tool is an essential piece of beekeeping equipment. Bees glue all components of a hive together with a sticky substance called propolis. The hive tool is used to pry apart supers, pry frames out of supers/hive bodies, etc. I have tried to use other similar items in place of a hive tool, including butter knives, screwdrivers, and things that look like hive tools (similar items sold at hardware stores, but that are *not* hive tools). However, nothing functions like a hive tool. Accept no substitutes. Hive tools are made to survive the stress of working hives. Purchase more than one. I recommend keeping a spare hive tool in your vehicle and even at your apiary if you are someone who is prone to losing things.

**2) smoker** – The smoker is an essential tool. Smokers, when lit properly, produce copious amounts of smoke. Beekeepers use smokers to calm the bees. Smoke calms bees by masking the alarm pheromone bees produce when they become defensive. I know that some beekeepers think it is best for the bees to avoid using smoke altogether. I disagree. I think that a smoker should be lit and nearby any time a hive is inspected. Colony behavior changes from day-to-day. You never know when a “normally gentle” colony is going to express heightened defensive behavior as a result of whatever stimulus triggers the response that day.

**3) smoker fuel** – Beekeepers should have dry smoker fuel on hand when inspecting a hive. It benefits the beekeeper to be

proactive in this regard. I recommend having a large reservoir of dry fuel available at all times. I also recommend having a small amount (about 1 quart’s worth) of shredded newspaper that one can use to start a smoker. Whatever fuel you elect to use, make sure (1) it is dry, (2) you have enough to keep a smoker going a few hours, and (3) it has no chemical contaminations that might be harmful to you and/or the bees if it is heated.

**4) lighter/matches** – There are three levels of fire starters I see beekeepers use. The most basic of these is the match. I try to have a box of matches on hand in the event that my lighters are out of fuel. You can purchase waterproof match holders from most camping supply stores. You can store matches in these and protect them from the elements, increasing their longevity, and making them more likely to work when you otherwise forgot or lost your lighter. The second type of lighter is the basic fuel-powered lighter. This includes cigarette lighters and the trigger-lighters that you often see in grill or bar-b-que sections of stores. The third type of lighter is really just a juiced-up version of the second type. It is a lighter head that is mounted on a small fuel tank. This is more like a torch and less like a lighter. However, they are great, seem to always work, and can even be used to light damp fuel, something that a match and a basic lighter usually cannot do.

**5) smoker box** – In my old age, and after seeing smokers be responsible for starting two fires, I recommend beekeepers have a smoker box or other metal container in which a lit smoker can be stored during transit. This should limit smoker ability



**Figure 1 – Two beekeepers wearing different amounts of personal protective equipment (PPE). The beekeeper on the left is only wearing a veil while the one on the right is wearing a full suit. You should wear the amount of PPE that you are comfortable wearing. I recommend always wearing at least a veil. Photograph: University of Florida.**

to start fires where fires are not otherwise wanted. It is preferable to put the smoker out after use anyway. However, some beekeepers put lit smokers in the back of their trucks. This is a perfect example of when to use a smoker box. I happen to use a small metal pail for this purpose.

**6) personal protective equipment (PPE)** – Beekeepers should wear at least

a veil when inspecting a hive (Figure 1). Of course, the amount of PPE you elect to wear (veil, gloves, boots, suit) is up to you. However, I believe that you should wear at least a veil. Bee stings on/around the face can be quite problematic. This is especially true of bee stings on the eyeball, which can leave you blind in the stung eye if not treated properly and quickly. Even if you



**Figure 2 – I carry small scissors (left), marking paint (center) and a small nail (right) that I use as a type of paint brush to mark queens. I have wrapped the shaft of the nail in this figure with duct tape to provide a handle for my makeshift “paintbrush”. Photograph: Amanda Ellis.**

only wear a veil, it is advisable to have a pair of gloves or even a suit on hand in the event the bees get particularly testy.

**7) notebook/pen/pencil** – It is a good idea for you to have items needed for note taking purposes when inspecting a hive. Keeping good notes on the status of a hive, what management practice you most recently performed on/to the hive, etc. can help you know what should be done to the hive in the future should you ever need that information. You also can record information on colony productivity, disease and pest pressures, feeding schedule, and a number of other management-related items. I recommend having a waterproof writing tablet and use a waterproof pen. Both are cheap and readily available in most office supply stores.

**Optional equipment**

**1) a small pair of scissors** – I clip all of my queens as part of my swarm control strategy. Correspondingly, I carry a small pair of nail scissors (Figure 2) with me when I inspect a hive. That way, I have a pair handy any time I have a new queen in a hive (Figure 3).

**2) small painting device or marker pen** – I also like to mark my queens, just to make them easier to find. Thus, I carry with me a small paint “brush” and a small vial of paint (Figure 2). The “brush” I use is really just a small nail that has a round head the size of the mark I want to make on the queen. I wrap the shaft of the nail with a bit of duck tap to create the handle for the “brush”. I am sure you can hammer the nail into the end of a wooden dowel rod and achieve the same thing. My mentor liked to use a small paintbrush from which he would remove most of the bristles. These days, the paint pens are quite popular and useful. Not everyone will need this piece of equipment, as many beekeepers do not mark their queens. However, I like to have the marking device on hand. When I do, I tend to mark my queens (Figure 4).

**3) queen cages** – I carry a few queen cages with me when I inspect hives (Figure 5). That way, I have a place to put queens when needed. Believe it or not, I do this quite a bit. For example, I like to allow my freshly marked queens to dry before placing them back in the hive. In this case, I will mark the queen and place her in a queen cage for a few minutes. I, then, will reintroduce her into the hive after she is dry. Additionally, sometimes a hive may contain queen cells from which multiple virgins are emerging at the same time. I occasionally will capture these queens for use in other hives. There are countless other reasons I would want to have a place to put queens temporarily. Queen cages serve that purpose for me.

**4) tack hammer and small nails** – Call me crazy, but I like to be prepared for just about any inconvenience I might face when inspecting a hive. Case-in-point: I have inspected many hives in which a frame would fall apart when removing it from the hive. Perhaps the top bar would detach



(l) Figure 3 – Clipping one of a queen’s forewings using a small pair of scissors. I am holding the head and thorax of the queen in one hand, while clipping one forewing with the other. (r) Figure 4 – A queen marked using the head of a small nail as a paintbrush. Photographs: Amanda Ellis.

while prying it with the hive tool, or the bottom bar would get stuck in the hive as I remove the rest of the frame. When this happens, it is great to have a small tack hammer and nails on hand so that one can repair any frames in real time.

**5) frame repair pieces** – Similar to having a tack hammer and nails on hand, it is also nice to have some of the top bar repair pieces with you when inspecting a hive. This is a little known gadget that most beekeepers have never seen/used. As you know, all frame top bars have a small piece that extends beyond the frame end bars. These pieces, or frame “lugs,” are the part of the frame on which the frame rests in the groove cut into the ends of the super. These lugs often break off with repeated use, due to natural wear and tear and the general weight of heavy frames. Some manufacturers make small metal repair pieces for this

part of the frame. I like to have a few on hand in the event I run into a broken frame in the field. I have seen these marketed as “frame savers” in many beekeeping catalogs.

**6) a gallon of water** – It is useful to have water available when your hands and hive tool need to be washed after inspecting a hive.

**7) frame rest** – Most beekeepers leave at least one frame out of a hive when inspecting the hive. Of course, most of those beekeepers simply rest part of this frame on the ground while propping the upper part on the hive or hive stand. I prefer to put this frame on a frame rest. A frame rest is a small device that hangs on the outside of the hive body. A frame rest is made to hold multiple frames, keeping you from having to place them on the ground while inspecting a hive.

**8) frame spacer** – I tend to run nine frames in my 10-frame equipment. As a result, I need to space the nine frames out evenly in their supers once I have completed my inspection. That way, I avoid violating bee space. I like to use frame spacers (Figure 6) to help me get the frames spaced just right. Just for clarity – these are *NOT* the frame spacers that are nailed into the hive body. I, personally, do not like those. Rather, this is the one you push down on frames from above. It resembles a comb. I like this tool.

**9) ratchet straps** – There are times when I inspect a hive when I discover that I need to move it to a new location. Ratchet straps (Figure 7) make it possible to secure the hive so that it can be moved. They take up such little space that I feel one should have a couple on hand when inspecting a hive. You never know when you might need them.

**10) small nuc box with 5 frames of foundation, bottom and lid** – Some beekeepers, especially those working remote apiaries, like to carry a complete nuc hive with them to the field. The nuc contains all appropriate parts (bottom, frames, lid,

etc.). They have these on hand in the event they need to make a split, when they otherwise were not expecting to make a split, or if they encounter a swarm when visiting the apiary. I usually do not keep a nuc on hand when inspecting a hive, but I can see where it would be advantageous if you were working a remote apiary, need an empty hive, and when returning home to get a nuc would otherwise be a bother.

**11) tweezers/forceps and a small vial of alcohol** – You never know when you are going to encounter something in a hive that you are going to want someone to see. I recommend having a pair of tweezers and a small vial with alcohol in it as a way to collect and preserve whatever you see that may need further explanation. Perhaps there is a large beetle in your hive that you need identified. Maybe you see a bee with deformed wings and you are not sure what causes it. Suppose you encounter a bee with something on its back and you need to have it identified. It is always good to have a quick way to collect and preserve such a specimen. Many beekeepers email me with questions about what they see in their hives. It is always great to have a sample to go along with the description I am provided. Keep the vial of alcohol away from the smoker.

**12) a cell phone** – I am not crazy about being connected to technology the way that



Figure 5 – You should carry spare queen cages with you when inspecting hives. You never know when you are going to need to cage a queen. Photograph: University of Florida.



Figure 6 – A frame spacer is a handy device to have if you use fewer than ten frames in a hive. Photograph: University of Florida.



(l) Figure 7 – Ratchet straps are good to have when you need to move a hive. (r) Figure 8 – Light a smoker before going into a hive. It can take a little time to learn to light a smoker correctly. You do not want the smoker to go out while you are inspecting the hive. It is important to light a smoker in a location that does not contain flammable material or that cannot itself catch on fire. Photographs: University of Florida.

many people are today. However, I think there is great value in carrying a cell phone to the apiary with you. First, you will have a phone with you in the event that you need help. Did you see a snake? Do you need someone to come get your vehicle unstuck? Is one colony robbing another one and you need someone to bring you the equipment needed to stop it? I also like to have a cell phone on hand, particularly a smart phone, so that you can take pictures of anything you see that needs further explanation. I routinely get emails and calls about hives that I never see expressing signs of disease that I cannot verify. Usually, a beekeeper wants me to diagnose a problem in his/her hives that may be hundreds or thousands of miles away from Florida. I frequently ask the beekeeper if he/she can take a picture or a video of what they see and send it to me. I think that cell phones are a useful tool in that regard.

I realize that this might sound like a lot of equipment that one needs to carry when inspecting hives. However, it really is not that much. It can be grouped into four general types of supplies one needs when inspecting hives:

- 1 – Personal Protective Equipment (PPE)
- 2 – a gallon of water,
- 3 – dry fuel, and
- 4 – a small container (I use a three gallon metal bucket) in which you carry your matches, notebook/pencil/pen, scissors, marking device, queen cages, tack hammer and nails, frame repair pieces, frame rest, frame spacer, ratchet straps (no more than two), hive tool, and smoker.

The water and fuel remain in the vehicle or wherever you stage the hive inspection. You wear the PPE. As a result, you only need to carry your smoker and metal bucket containing the miscellaneous items with you to the hive. Everything you need with you can fit in both hands (a smoker in one and your supply pail in the other).

#### How to Inspect a Hive

What follows is a general overview of the typical steps one performs when inspecting a hive. I also discuss what one should look for in hives while inspecting them. Of course, everyone's management strategy differs. However, I find that I tend to inspect hives in a predictable pattern. The

list of numbered steps may seem long, but it generally only takes about ten minutes to inspect any one hive, even when performing all the actions I list below.

**1) Light your smoker (Figure 8).** I recommend lighting your smoker on a solid, non-flammable surface. This can include lighting it on the tailgate of a truck, on a concrete surface, or on a dirt patch near the hive. This should lessen the chance you start an errant fire when lighting the smoker.

**2) Put on your PPE.** You should wear a veil every time you work with bees. Put on your veil at least 20 feet from the hive. Use gloves and bee suits at your discretion. I recommend having them available should you need to use them, even if you elect not to wear them every time.

**3) Approach and inspect the outside of the hive.** You can learn a lot about a hive by looking at what is happening outside of it.

- Are your bees flying (Figure 9)? If so, is the activity consistent across all hives in the apiary? This is a good way to know if hives are performing similarly or if there are a few that need extra attention.



(l) Figure 9 – Do you see normal flight activity when inspecting the hive's entrance? (r) Figure 10 – Lightly smoke the entrance of the hive prior to inspecting it. Photographs: University of Florida.

- Are the bees returning with pollen (indicated by pollen balls on the hind legs of returning foragers)?

- Are there bees crawling on the grass in front of a hive? If so, you could have a pest or pathogen problem.

- Are there piles of dead adult bees on the ground just outside the hive entrance? Such a pile can suggest that the hive has a pest or pathogen problem.

- Is the hive being robbed? If it is, you will see bees fighting at the hive entrance and a large number of bees trying to enter the hive through areas that are not the entrance.

- Do the bees have enough food? You can determine this from outside the hive by hoisting the hive from behind with one hand. It may need food if it rocks forward easily. Hives with enough food are more challenging to rock forward, given that they have more honey stores.

**3) Smoke the hive entrance and under hive lid (Figure 10).** I usually blow 2 – 5 puffs of smoke into the hive entrance. I, then, will lift the hive lid and smoke under it. I occasionally smoke the hive from below if it has a screened bottom board. I only apply as much smoke as is needed. I feel that you cannot really determine this until you are in the hive. Consequently, I tend to be rather conservative with the smoke until I get into the hive. I can tell that bees need to be smoked once I am in the hive because agitated bees will start flying at my hands as I move them over the nest or they will start to bump into my veil as I work. For most hives, I only have to apply smoke 2 – 3 more times while inspecting the hive.

**4) Work beside the hive.** I believe that hives are much easier to inspect while standing beside them. I do not recommend inspecting a hive from the front. This blocks the flow of bees into/out of the hive. I also do not like to work from the back of the hive because I find it awkward to lift the frames from the hive this way. I much prefer to inspect a hive from beside it, where I can pull the frames out of the hive and view the face of the comb instantly.

**5) Lock your feet in place.** I firmly believe in picking a spot to stand (preferably, beside the hive) and then locking your feet in place, moving them only when absolutely necessary. I realized long ago that the more I lift/lower my feet while inspecting a hive, the more bees I crush. I find that I usually can inspect a hive while standing with my feet in the same spot the entire time. I occasionally have to move my feet when moving supers from/to the hive. I feel, though, that locking one's feet in place is a best management practice that minimizes impact to the bees that may fall to the ground during the hive inspection.

**6) All movements you make while inspecting a hive should be fluid.** I liken inspecting a hive to conducting an orchestra. The conductor's feet are locked in place (see point 5 above) and he/she moves

his/her torso, arms and hands in a rhythmic motion as he/she leads the orchestra. Similarly, the beekeeper should keep his/her movements fluid. Bees cue into sudden, jerky movements when they become agitated. It is a great joy to watch some of the bee masters inspect a hive. They are so fluid with their movements that the bees seem almost not to notice them at all.

**7) Remove the hive lid.** Place it upside down (the part that normally faces inside the hive facing up) on the ground beside the hive or, better yet, on a surface that is about waist height (so that you do not have to bend over when inspecting a hive). Why place it this way? Bees collect under the surface of a lid. Placing the lid upside down keeps you from crushing bees when placing it the other way around.

**8) Remove uppermost super (if any) and place it perpendicular to and on top of the hive lid (Figure 11).** Many beekeepers like to inspect the upper super first, if such an inspection is needed. I prefer to inspect the super(s) at the end of my overall hive inspection. I recommend placing the super perpendicular to (or at least "catty-cornered" to) and on top of the hive lid so that the bees in the lid can crawl back into the super and so that you minimize the number of bees that are crushed while inspecting a hive. Think about it. Placing the super fully inside the hive lid means that the entire bottom perimeter of the super contacts the hive lid, thereby increasing the likelihood of crushing bees. Placing the super perpendicular to the hive lid (on a telescoping lid) means that there will be fewer points of contact between the lid and super, thus minimizing bee deaths.

**9) Remove other supers and stack them perpendicularly to supers already removed from the hive.** Here, I simply mean that one should stack all supers in a crisscross pattern, one on top of the other, to avoid crushing bees (Figure 12). Again, the point is to minimize the contact surface area between two supers. This inspection step is only relevant when two or more supers need to be removed from the hive when attempting to access the brood chamber.

**10) Remove, inspect, and rest the queen excluder (if one is present) on the ground in front of the hive (Figure 13).** I always recommend to beekeepers that they inspect the queen excluder when it is removed from the hive. Queens typically cannot move through an excluder, though they may be crawling on the underside of one at any given time. To that end, it is necessary to inspect the excluder just to make sure that the queen is not on it. You do not want to sit the excluder aside, with her crawling off it and getting lost. I like to place an excluder on the ground in front of its hive and allow it to rest against the hive entrance. That way, bees on the excluder will march into the hive while I inspect it. In most cases, the majority of the bees have crawled from the excluder and into the hive by the time I am ready to replace the excluder.



**Figure 11 – Place the super on the hive lid. It is best to position the super perpendicular to the lid, or at least catty-corner to the lid as shown in this figure. Photograph: University of Florida.**

**11) Remove the frame in the second position, inspect it for the queen, and place it outside the hive.** I mentally number my frames 1 – 10, with the frame nearest me being #1 and the frame furthest from me being #10. Many beekeepers like to remove frame #1, the outermost frame (the one nearest you if you stand to one side of the hive) of the brood chamber first. I prefer to remove frame #2 (the second frame from you) first. I like to do this for a few reasons. First, frame #1, being on the side of the hive, often contains mostly pollen and/or honey. That is where the bees prefer to store these foodstuffs and that is where I



**Figure 12 – Stack supers perpendicular to one another when removing them from the hive. This helps minimize the number of bees that will be crushed when inspecting a hive. [Note: These supers are stacked for storage, but they illustrate how one would stack supers if removing more than one from the hive being inspected.] Photograph: University of Florida.**



(l) Figure 13 – Remove the queen excluder from the hive. Check both sides for the queen. (r) Figure 14 – Remove and inspect each frame. Photographs: University of Florida.

typically like to leave that frame. The first frame you remove from the hive typically is the one you leave out of the hive the entire time you are inspecting it. I prefer for it to be a frame that can be returned most anywhere in the hive once I am done. Frame #2 is more likely to contain brood, so I am able to return it to positions 2 – 9 in the nest and not upset the organization of the nest too much. Second, I find that the outermost frames (Frames 1 and 10) often are the most difficult to remove without damaging bees. I seem to do less damage to bees when removing frame #2 than I do when removing Frame #1.

Once the frame is removed, I check it for the queen (Figure 14). If she is not present on the frame, I will put the frame on a frame rest or I will place it on the ground, resting the top end against the back of the hive. I typically sit my frames on the end bars rather than the bottom bar when not using a frame rest. I orient my frames this way in an effort to minimize the surface area of the frame contacting the ground, thus minimizing the number of bees that could be crushed. If you find the queen on this frame, she should be removed and returned to the hive before proceeding. You do not want to put her on a frame that will spend any time outside of the hive. This is a good way to lose her.

**12) Remove frame #1, inspect it, and replace it in the hive.** This is the frame that is nearest you, against the wall of the hive. I inspect it and return it to its place against the wall of the hive. I, then, remove frame #3 (the one in the third position), inspect it, and return it to the hive where the frame #2 once rested. Thus, it gets shifted one position over, into the space vacated by frame #2. I work my way through the hive in this pattern (Figure 15 – frame #4 going where frame #3 was, frame #5 where #4 was, and so on) until I get to the outermost frame on the side of the hive furthest from me (Frame #10). I leave that frame in its place up against the distant hive wall. With this done, one should end up with a frame missing from the second-to-last spot on the distant side of the hive (the space formally

occupied by frame #9 that is now where frame #8 was). This is where you will return the first frame you removed from the nest (frame #2).

**13) Inspect the combs as you work your way through them.** I list below the types of things for which one would check when inspecting frames.

- Do you see eggs? I rarely look for the queen. I know that the queen has been present within the last three days if I see eggs in the hive. It can be hard for a new beekeeper, or a seasoned one for that matter, to find the queen. I believe it is far more beneficial to learn to recognize eggs. I confirm the queen's presence (or at least her recent presence) when I see eggs.
- How do the larvae look? Are they discolored or twisted in their cells? If they are, this can be a sign of disease. Are they plump, glistening, white, and lying in the back of the cell in the shape of a letter "C"? This is how they should look.
- How does the capped brood look? Are the cappings sunken and perforated? This can be a sign of disease. They should be domed and not perforated.
- How is the brood pattern? Is it solid (few empty cells scattered among cells containing brood)? Or is it spotty (many empty cells scattered among cells containing brood)? The former suggests that the queen is healthy and that the brood has a high survivorship. The latter can indicate a failing queen, disease, or even pesticide residue in the comb.
- Are the bees aborting brood; i.e. are they removing brood from the cells? This is a sign of diseased or parasitized brood.
- Is there enough food (honey and pollen) in the hive?
- How do the adult bees appear? Are their wings fully formed? Are they covered in hair? Or, do they have misshapen wings (a sign of Deformed Wing Virus) or are they shiny and hairless (can be a sign of other viruses)?

- Are queen cells on the combs? If so, where are they (on the face of the comb or on the periphery)? If the former, are the bees trying to supersede their queen? If the latter, are they trying to swarm?
- Do you have queen cells opened at the tip, thus indicating a new queen has emerged? Or, are the cells opened from the side, suggesting that a virgin queen is running around the hive, opening the cells of her developing sisters and stinging them to death?
- Are drones present?
- Does the hive contain the right amount of bees for the time of year?
- Do you see any small hive beetles/wax moths/*Varroa*? What about chalkbrood, *Nosema*, or the foulbroods?

**14) Return the last frame to the hive once finished inspecting it and all other frames.** As noted, I usually leave frames 1 and 10 in their original positions. Frames 3 – 9 each get shifted one frame position closer to me. Frame 2 is returned to the location where frame 9 was at the beginning of the inspection.

**15) Smoke the bees to move them from the edge of the hive.** I like to follow my inspection of the lowermost box (the brood chamber) by lightly puffing smoke over the top of the frames in that box. This usually causes the bees to run down into the hive and away from the edge of the hive. I am not smoking them in an effort to keep them calm. Rather, I am using this as an opportunity to move them out of the way before I return the excluder and supers to the hive. Again, I try hard to minimize the number of bees I crush as I inspect a hive.

**16) Inspect and replace excluder.** Always make certain that the queen is not on the excluder when you return it to the hive. This will minimize any damage to her and it will make it where she is not introduced errantly into supers above the excluder because you failed to notice that she crawled to the top of the excluder before returning it to the hive.



Figure 15 – Return inspected frames to the nest. The beekeeper in this figure has to inspect the hive from behind as he cannot stand beside the hive given its arrangement on the stand. (r) Figure 16 – Some beekeepers remove queen cells from a hive in an attempt to reduce the colony's swarming tendency. I am pointing at a cell opened at its end, suggesting that a queen has emerged normally. *Photographs: University of Florida.*

**17) Lightly smoke and replace first super.** Gently replace the super. I like to do this in a slow rocking motion as I lower the super. I find that this often moves bees out of the way as I lower the super.

**18) Determine if you have a reason to go into the super you just replaced.** What might drive this decision? Was the super heavy? Did you see any damage to the combs from above or below while lifting it? Did you see a sufficient number of bees in the super? I do not inspect supers when inspecting a hive unless I have some compelling reason to inspect them.

**19) Replace and inspect all other supers as needed.** Be careful not to crush bees.

**20) Replace the outer lid of the hive.** Be careful not to crush bees.

#### Other inspection activities

There are other decisions one might have to make when performing a general inspection. I pooled these activities into a separate section given that one does not always have to do them. It helps, though, to be mindful of these in the event you determine that one or more must be performed.

**1) Do you have a reason to requeen the hive? If so, what is your strategy for doing it?** You might find that your hive is queenless upon inspection. How are you going to remedy this situation? Do you have a nuc nearby with which you can use to requeen your hive? Are you going to order a new queen? Are you going to allow the colony to requeen itself?

**2) What is your strategy for controlling swarming in a hive that obviously wants to swarm?** Hive inspections that occur during swarm season should include the application of swarm management techniques. For me, that involves shaking bees from all of the brood frames into the nest as I inspect them and removing any queen cells that I see (Figure 16). I also super as necessary to provide space, clip my queens, and make early season splits to alleviate swarm tendencies.

**3) Do your bees need to be fed (Figure 17)?** There are times when a typical hive inspection will include providing food to the bees. Perhaps you need to fill a division board feeder or a Boardman entrance feeder. Maybe you determine that a colony needs a pollen patty.

**4) Are you inspecting a hive for the**

**purpose of applying a disease or pest control (Figure 18)?** Some disease/pest control strategies are easy to implement while others require you to spend some time in the hive.

**5) Does your hive need supering or de-supering?** This usually is determined by where in the honey flow you are. You add supers early in the flow and remove them later in the flow.

**6) Are you splitting a colony?** This typically happens in early spring or late summer, i.e. outside the typical honey production season.

I appreciate that the list of tools one needs to inspect hives and the steps one takes/activities one can perform while inspecting hives may be overwhelming. Do not worry. You will find that hive inspections quickly become familiar and habitual, a bit like tying a shoe. I no longer have to run down a checklist of things I must do when inspecting my hives. Instead, I have inspected enough hives in my time to perform the activities I note as a matter of habit. I hope you feel a sense of awe and joy every time you enter the nest of a honey bee colony. Be careful to work a hive with open eyes. There is always so much to see.



(l) Figure 17 – Feed colonies when necessary. (r) Figure 18 – Some inspections are made for the purpose of disease or pest control. Here, the hive is being treated prophylactically for both foulbrood diseases. *Photographs: University of Florida.*