

MASTERING BEEKEEPING

What to Know After

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Mastering Beekeeping: Year One

An increasing number of state and regional organizations offer some sort of training that may lead to a Master Beekeeper certification. Programs like the Eastern Apicultural Society ask that applicants keep bees for five or more years before attempting their four part exam process. Various states use a far different model – often they outline a program of study that starts with the first season of colony ownership or manipulation (for those learning with the help of other people's hives).

For a wide variety of reasons not everyone wants to become a Master Beekeeper. At the low end of the spectrum are the I-wanna-have-bees-in-my-garden-but-not-do-any-work beekeepers, and impulsive drive-by beekeepers who try to do the absolute minimum to keep bees, and then complain bitterly when the colonies fail to survive. The opposite side of the motivation spectrum includes individuals who put in a remarkable amount of research before getting bees, training with every opportunity they can, and demonstrating a dedication to bees and beekeeping that is pretty remarkable. These are the ideal candidates for the exam process to become Master Beekeepers.

In the middle are lots of people that want to keep bees but are functionally 'too busy' to study and become experts in keeping bees. Many of us are quick to argue for the comprehensive training of new beekeepers, but we need to accept the reality that more and more people start with beekeeping with nearly zero training and instruction, little book learning, and absolutely no mentoring. One suspects the high failure rate of these beekeepers and their bees is largely avoidable, but the fact that a few of these folks are extremely lucky and find themselves the recipients of booming colonies and abundant swarms as they watch the bees from a distance.

Of course, this same population of beekeepers may experience queen failure, colony loss, weak colonies, Winter kill and other fates of colonies. We will not say 'told you so' because so many hard working, well prepared beekeepers also experience these concerns and losses. Mother Nature can be a bit unfair sometimes.

All this is a way of asking the question: *what are some standard areas of mastery a first year beekeeper might make with reasonable expectations of colony success?* Here is my list, in discussion format, for the person starting, or perhaps ending, their first year of beekeeping.

We will start a list of mastery with beekeeping equipment. It seems fair to expect that a Year One beekeeper should know all the names and parts of the

standard Langstroth hive, or parts of the top bar hive, if that is their choice. My personal recommendation is that ALL beekeepers start with or manage (perhaps some one else's) Langstroth colony before starting a top bar colony. Clearly others disagree. But everyone should understand the arrangement of the colony, from a bottom board, hive body (brood nest), honey storage area (supers), cover(s) and most important the frames. Beekeepers should be able to assemble a hive so it is well glued and nailed or stapled so it stands up to the pressures of manipulation and heavy propolis buildup. Since more and more beekeepers are buying their equipment pre-assembled, it is quite possible that a First Year beekeeper has no idea how individual hive parts go together. That is probably not adequate, in my opinion.

It seems logical that all new beekeepers need to know everything they can about beeswax comb and how bees use it for both brood production and honey storage.

At the end of the first year I expect a beekeeper to identify worker brood in all its stages, drone brood in all its stages, queen cups, queen cells, naturally emerged-from queen cells, queen cells that have been destroyed by another queen, open and sealed cells of honey and areas of stored pollen. Until these identification skills are mastered, confusion of their identity will confound the new beekeeper.

Likewise the successful first-year beekeeper will know all the members of the hive, and for many this often a big challenge. I have seen experienced beekeepers past Year One briefly confuse a drone for a queen bee; while the differences are pretty clear to me, the must not



The first taste of honey for first year beekeeper student part of the Students for a Sustainable Earth, the program. This was the first chance these students had all had to taste in the season. I expect all of these students to work to advance in their training.

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For Your First Season

be for the new beekeeper. I often hand a new beekeeper a drone to their ungloved hand and manipulate to become familiar with its size and shape. Knowing the difference of the drone, worker and queen body form, size and position of the eyes and other features, are important so beekeepers are able to evaluate a colony without tremendous hesitation.

Handling workers is usually not a first beekeeper's skill, but the top of the first-year class will learn how to carefully pick up and handle a queen bee, laying or virgin,



Students at Western Michigan University in Kalamazoo. While this is a student-run program funded by a university grant, they sample comb honey from the hives they set up earlier in the season. They are held to a higher standard, and compete for master beekeeper

so that she may be marked or placed into a cage. Of course, we know that queens are able to both sting and bite, especially virgin queens that may tend to be a bit more feisty. For the more timid beekeepers, there are cylinder and plunger systems that will help the first year beekeeper manage a queen, since I think recognition is the key here. All new beekeepers must master the ability to recognize queens and

evaluate their work as egg-laying machines.

First year beekeepers should be able to find the marked queen when she is on the frame. No excuses here, since she will often be the only marked bee on the frame. Finding a marked queen in a nucleus or full sized colony may be beyond the first year person, but it is a goal that can be mastered to the benefit of both colony and keeper.

Smoker and smoke use

There are advocates of smoke-free beekeeping. I am not one of them and I refuse to allow a student to operate

without a functioning smoker if there are other people in the area of the hives, beekeeper or non beekeeper, because our absolute first concern should be for safety. The first year beekeeper must learn to use the smoker before they open the hive, as they remove each super or hive body (brood box) and to use smoke on groups of bees to move them off the ends of combs as they manipulate frames. Focus on the protection of both the beekeeper and the bee: minimize the number bees to be crushed or pinched when frames are being moved. While this may not seem important to more experienced beekeepers, I notice that the simple application of smoke to the ends of the frames about to be removed reduces the crushing of bees, especially by many first-year beekeepers wearing gloves.

Lighting the smoker – I admit I have been a bit obsessive about including smoker lighting instructions in several Wicwas Press books. I am surprised how few beekeepers really know how to light a smoker so it says lit for an hour or more. The commercial beekeepers are often using propane torches and fancy methods to light smokers. This is beyond the first year requirement.

Handling frames during inspections – Watching some new beekeepers remove and inspect frames can be painful. There is no reason why a beekeeper should need 20 minutes to remove the first frame from colony and ninety minutes to inspect a hive 16 to 20 frames (double deep)! Proper use of a hive tool or two is key to efficient colony inspection. An experienced beekeeper should model the handling of a frame from corner to corner to see all the angles of the frame and look for the queen. Top bar frames are different of course, and require turning and twisting – but the first year beekeeper should have that down by now..

Returning the frames to a natural order when finishing an inspection – Bees have a rather predictable way of organizing the brood nest, with pollen and drone brood along the edges and honey on the outside. So why do new beekeepers put a frame of honey in the middle of the brood nest as they finish a colony inspection? Careful attention to return each frame to its original location and orientation are important for new beekeepers.

Colony equalization and making increase colonies – Not everyone agrees with me that a first year beekeeper should learn to equalized two colonies by moving frames of brood or switching positions of two hives, but why not. I demonstrated it to a group of college students on their second hive visit and were cool with it and understood the concept. Why not all beekeepers? As far as making new colonies from two and three month old colonies, I strongly advised that all new beekeepers keep

a minimum of two and a half hives (the half hive is a nucleus) throughout the season.

Problem detection: Diseases and pests – Every new beekeeper must be able to recognize healthy bee brood and vigorous colonies. The key here is to detect something that does not look normal or correct and to know when it is time to get help to confirm the concern and manage the problem.

Honey removal and harvesting – New beekeepers should know when honey is ready to be removed, how to brush and remove honey without killing a large number of bees, and how to crush small amounts of honey for family use. Larger harvests and honey extractors are better suited for more advanced beekeepers. But try to stop the enthusiastic beekeeper. So the lesson here is to make sure beekeepers leave adequate amounts of stored honey for the bees to use over the Winter or during a dearth period.

Feeding bees – First year beekeepers should be familiar with at least one method for feeding sugar syrup and one method to provide protein patties without causing robbing or small hive beetle attacks.

Propolis – Beekeepers should learn the origins of propolis, how it differs from beeswax, and how to remove it from hive equipment.

Preventing robbing by other bees and wasps – First year beekeepers should understand the need for short hive inspections when there is no nectar flow, and to reduce the entrance of hives to restrict access of robbing honey bees, wasps, and invading mice.

Evaluating stored amounts of honey – New beekeepers benefit by knowing how to count frames of honey and conservatively estimate the number of pounds or kilograms of honey each hive has, and check this with figures for average overwintering needs for their area. Since most people overestimate the weight of an item when we lift it, a scale is useful to determine stored honey.

Queen problems – New beekeepers should be able to tell if a queen is laying eggs or not by visual inspection of the bottom of the brood cells. They should know if a break in the brood cycle is expected or unusual. For example, they may find that certain lines of queens stop laying as soon as the nectar flow ends. They should recognize a queen that is present and producing drones (indicating that she is a drone layer), and when a queen is absent and the worker bees are producing drones. They should know that this is a time to ask for help with their bees or possibly lose the colony. Beekeepers should know what an expected number of drones looks like during the spring buildup, the nectar flow, and during the Fall. They should be able to determine when there are drones present in a colony during requeening.

This is my suggestion for the first year beekeepers. I know there are many multi-year beekeepers who have not mastered this list, and are successful with their bees. But a checklist is beneficial for those who are attempting to reach a set milestone, like an expected test for a certified beekeeper exam. **BC**

Reading List:

Here are books that are valuable to the first year beekeeper:

Delaplane, K., *First Lessons of Beekeeping*. Dadant & Sons, Inc. A low cost book with basic information.

Connor, L. *Increase Essentials*. Wicwas Press. How to make new colonies from the ones you already have, and overwinter them.

Connor, L., and R. Muir, *Bee-essentials: A Field Guide*. Wicwas Press. A beginner book that will last several seasons.

Floftum, K. *The Backyard Beekeeper—Revised and Updated*. Quarry Books. A popular beginners book.

Simon, E., *Bee Equipment Essentials*, Wicwas Press. Use for equipment assembly and how to use certain items of equipment. Pretty cool methods of honey processing and swarm catching equipment you can make yourself.



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