

Getting Started in Beekeeping

Eric C. Mussen, Extension Apiculturist, UC Davis

The following information was compiled to provide guidance for individuals who are considering starting to keep honeybees. There is much to contemplate and it is a good idea to become acquainted with beekeeping by reading at least portions of the texts mentioned later. This synopsis deals with preliminary planning, in order to better understand the challenges involved with keeping one or more hives of honeybees.

One of your most important considerations is the safety of family members and neighbors. We are not contemplating a mass-stinging incident. We are concerned about someone who is so allergic to honey bee stings that he or she has to visit a medical facility if stung. The only way to find out is to ask the neighbors, and this will also allow you to find out whether or not there is serious opposition to your keeping bees in the neighborhood. Even if your neighbors are not too concerned, your county may have restrictions on beekeeping or your municipality may have an ordinance prohibiting beekeeping. Be sure to check the laws. In California there presently is a state regulation requiring all beekeepers to register their apiary locations with the county agricultural commissioner during January, or whenever you get new bees. There is a \$10 annual registration fee.

Some other important considerations about establishing an apiary include:

1. Over how much of the year will nectar and pollens be available to the bees? – Will you have to feed the bees to ensure their survival?
2. Over how much of the year will water be available to the bees? – They need it every day.
3. What will the bees be flying over to get their food and water? – They defecate in flight and bee feces can damage finishes on cars and leave colored spots on everything below them. Also, will they be flying across a pedestrian, bicycle or equestrian pathway? If so, they have to be encouraged to gain altitude quickly by installing fencing or solid, tall plantings near the hives.
4. Is the apiary accessible year around? – Flooding at or near the apiary site is the usual problem.
5. Try to avoid low spots. – They hold cold, damp air for prolonged periods.
6. Try to avoid hilltops. – They tend to be windy.

The next consideration is equipment, for the bees and the beekeeper. The bees are kept in boxes on frames in which the bees have constructed beeswax combs. Most beekeepers use wooden boxes and frames, but plastic hive components are available. At a minimum, each hive must have a bottom board, two boxes to hold the brood nest (baby bees), frames and foundation for the boxes, and a top (or cover). A single new hive as described will cost about \$110. In areas where the bees are expected to produce a surplus honey crop, more boxes (usually of shorter height) and frames and foundation are required to hold the crop. Some beekeepers rely on a "queen

excluder" to keep the queen and brood out of the honey supers (boxes placed above the brood nest).

Choices of foundation may seem overwhelming, at first. Plastic foundation or plastic combs are used by many beekeepers. The only trick is to make sure that the bees have an abundance of nectar or sugar syrup available when they are "drawing out" the combs, so that no bald spots are formed on the foundation. Choices in beeswax run from quite thick to very thin foundation, depending upon how the honey is going to be utilized. Use thick wax foundation for the brood boxes and for frames that may be spun in a honey extractor.

Equipment for the beekeeper includes items to keep the bees away from sensitive parts of the body and to keep hive products off your regular clothing. Every beekeeper should wear a veil when working with honeybees, to protect the eyes from stings. In order to get into the hive, which will be glued shut with "propolis" (plant resins that bees collect), the beekeeper usually uses a hive tool. Because you are breaking into the hive, it is a good idea to keep the guard bees calm and the soldier bees from getting the defense message (alarm pheromone). We do this by burning wood chips, burlap, or some other slow burning substance in a "smoker" and puffing the smoke on the bees in just the right amounts to keep them under control. Bee gloves are worn when the smoke is not adequate to prevent stinging behavior. White coveralls are worn to keep wax, propolis and honey off our bodies, and as an added layer of protection when the bees become defensive. Often boots are worn to keep bees away from the ankles, and it is a good idea to close tightly pant legs and sleeve cuffs to keep bees from crawling inside the clothing. There are no known repellents that will prevent bees from stinging if they have been adequately stimulated for defensive behavior. The price of this personal gear will be around \$110.

Dealers of beekeeping equipment may be listed in the yellow pages of your telephone book, if there is an outlet relatively nearby. Otherwise, you can contact the large, national beekeeping supply companies and request a catalog containing their equipment and prices. Some of those companies are: Dadant & Sons, Inc., 51 S. 2nd Street, Hamilton, IL 62341 [(217) 847-3324]; Mann Lake Ltd., 501 S. 1st Street, Hackensack, MN 56452 [(800) 233-6663]; and Walter T. Kelley Co., Inc., 3107 P.O. Box 240, Clarkson, KY 42726 [(502) 242-2012]. Other companies advertise in the nation's bee journals, a single copy of which can be requested from the publishers: American Bee Journal, 51 S. 2nd Street, Hamilton, IL 62341 [(217) 847-3324] or Bee Culture, A.I. Root Co., 623 W. Liberty Street, Medina, OH 44256 [(800) 289-7668].

Once you have your beekeeping equipment in hand, boxes painted, frames filled with foundation, etc., it is time to get your bees. In the spring, reproductive swarms of bees sometimes can be found for free (or you can charge to take them away). Normally, swarms have older queens in them that have already demonstrated a propensity to swarm, so it is a good idea to requeen such colonies after you have had them for a while. Most beekeepers start their colonies from "packages," which are wooden and wire screen boxes containing a caged queen and two or three pounds of bulk bees (about 4,000 bees per pound) that cost about \$36. The feeder can is removed from the package, the bees are bounced and shaken into your hive, the queen is released from her cage on to a comb deep in the hive, and the hive is closed up. It is usually a good idea to feed sugar syrup to the new colony. If all goes well, the queen is laying in a day or two, and the colony is off and running. If this sounds like too much work, more expensive "nuclei"

(frames of bees with brood and a queen) can be purchased and put into hives, or you can purchase a full sized colony, boxes and all, from a beekeeper for around \$100.

In a perfect world, the bees can take care of all of their needs and never run into problems. However, as a potential beekeeper, you had better become knowledgeable of American foulbrood disease and how to prevent it, tracheal and Varroa mites and how to keep their populations reduced to sub-economic levels, the effects of insecticide exposure to honey bees, and methods for dealing with the reproductive potential of the bees. Your bees will swarm in the spring if you do not apply good swarm control techniques.

The world's most comprehensive textbook on honeybees is The Hive and The Honey Bee. It is 1324 pages long and covers just about any topic imaginable on honeybees. The text is published by Dadant's & Sons, mentioned above, and sells for around \$35. An excellent text for beekeeping techniques is the third edition of The Beekeeper's Handbook by Diana Sammataro and Alphonse Avitabile. This book describes many of the problems faced by beekeepers and discusses the advantages and disadvantages of applying various solutions to the problems.

Local beekeeping clubs provide the best information on beekeeping in their areas. Look for their listing in the telephone book or try contacting your local cooperative extension office for tips on beekeeping and contacts that may be beneficial.

Dr. Eric C. Mussen
ecmussen@ucdavis.edu