

Beekeeper's Guild of San Mateo County

www.sanmateobee.org

AN EQUIPMENT LIST FOR BEGINNING BEEKEEPERS - 2009

A. TYPICAL HIVE COMPONENTS, BEES, AND MEDICATION

Equipment needed for each hive. For additional hives, multiply these numbers by 2, 4, 10, or however many hives desired.

If you are just starting out, you have the choice of using the standard 10-frame setup, which is the most common and all equipment suppliers carry 10-frame equipment, or using 8-frame setups. Eight frame boxes are lighter when they are full, so if weight is a concern, consider using the 8 frame equipment. You may have a little trouble finding suppliers for 8-frame so look around first.

Equipment described below is for 10-frame setups.

Brood chambers

- 2 deep hive bodies (also called deep supers or 9 5/8" supers)
- 20 frames, deep, 9 1/8" - (The type of frame depends on the type of foundation you use, e.g., wired wax requires a wedge top bar, plastic uses a grooved top bar)
- 20 sheets of deep foundation (Either wax-coated plastic, crimp wire, or unwired brood. Avoid Duragilt.)

Honey supers

- 3 supers, medium, 6 5/8"
- 30 frames - medium (As with the deeps, the type of frame you get depends on the type of foundation you use)
- 30 sheets of medium foundation (If you plan to extract honey from the comb, use either wax-coated plastic or crimpwire. Avoid Duragilt. If you want to make cut-comb honey, use thin cut-comb foundation.)

Note 1: As an alternative to 2 deep hive bodies for the brood chamber, you can use 3 medium supers. This provides the same amount of space for brood rearing. Most beekeepers in this area use deep boxes for brood and mediums for honey. The advantage with 3 medium supers for the brood chamber is each super, when full, is lighter than a full deep hive body. Another advantage is all your equipment will be the same dimension so replacing old comb (more than four years) is easier. The disadvantage is that there are a lot more combs to inspect and check, especially during swarm season in the spring, and that means increasing the chances of damaging the queen.

Note 2: You may choose to order only 2 honey supers, rather than 3 since the bees may not fill all three supers, or because you may decide to extract more frequently. If you order only 2 honey supers, you will need only 20 frames and 20 sheets of foundation.

Note 3: Rather than medium supers, you might order shallow supers (5 11/16") or use deeps (9 5/8"). Shallow supers are lighter and therefore easier to handle than mediums, but they hold less honey for about the same investment in time and money to assemble the equipment.

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Conversely, deep honey supers are heavier than mediums when full of honey and are therefore harder to handle. They offer the advantage of standardization of equipment: the beekeeper has only one size super for brood and honey.

Other components

- Cover or top. There are two options. The more elaborate and expensive is a telescoping top and inner cover. Alternatively, and less expensively, you could use a migratory top, which is a flat wood cover. Most commercial beekeepers use migratory tops.
- Bottom board. There are two basic types: solid bottoms or screened bottoms. Most hobbyists now use screened bottom boards rather than solid bottom boards because they provide ventilation and are part of the integrated pest management (IPM) for helping manage varroa mites.
- 1 hive stand (You can buy the materials locally. The stand can be made of pressure treated wood, concrete blocks, used pallets—anything to keep the hive off the ground. There is no need to buy a hive stand from a catalog. Those don't work as well and soon rot.)

Nails

- Nails for hive bodies and supers use 7 penny box, galvanized, which you can buy locally. This is an unusual size but the bigger hardware stores carry them. If you can't get 7 penny galvanized box, 6 penny will do fine.
- Regular frame nails, which you should order because they are an unusual size. Some beekeepers prefer to use locally-purchased galvanized nails of about the same size.
- Small frame nails (You'll need these for the wedges if you get wedge top bars. Order these, too.)

Glue

- Non-water based glue, like Tite Bond, is very important for assembling frames. Glue tends to be what holds the frames together, especially when attempting to pry them loose from the hive body. Avoid water-based glues like Elmer's Wood Glue because the inside of a hive is often moist and wood glues will lose their holding capacity.

Note: Dadant, Western Bee Supply, and other suppliers also sell boxes, foundation, frames, and often nails, as a package. Suppliers commonly sell "beginner kits" that contain a veil, smoker, hive tool, and other equipment in addition to hive components. Before ordering one of these, talk to an experienced beekeeper to make sure it would be appropriate for you.

Bees and queen

- For each hive, you'll need either a package of bees with a queen, or a nuc and queen. If you get a package, order three pounds. Nucs usually have four or five frames of bees. Either size is fine. The packages and nucs are usually supplied with a queen. Someone in the bee club can help you find a supplier of bees.
- Races of bees. The most common races of bees in our area are Carniolan and Italian. Either is fine. After you have kept bees for a few years, you might want to try different races and see which you prefer. When you begin, race does not matter at all.

Miscellaneous

Originally prepared by Tom Chester, January 2000, with subsequent modifications

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- 1 Queen excluder - wire-bound is best (You may not need an excluder for each colony. Some beekeepers use them and swear by them, others avoid them and swear at them.)
- 1 Division board feeder (Not necessary, though you can order one if you want to try it. Many beekeepers use a big glass jar (e.g., gallon pickle jar) with small nail holes in the lid. This works fine, as does a gallon Zip Lock baggie filled with sugar syrup, laid across the top bars or a queen excluder, and small slits cut into the top. Another type is the Boardman feeder which fits inside the entrance. Many reference books disparage this type, saying it promotes robbing, and brings ants.
- 1 large glass jar with lid, if you don't use a division board feeder (Acquire locally)
- 1 quart of paint for the exterior of the hives (Buy locally; color doesn't matter.)
- Several 5-pound bags of sugar (You will need to feed your bees to encourage them to produce wax for comb building,)

For crimped wire foundation (consider waiting on this for a few years)

If you get crimped wire foundation instead of plastic, you'll need to provide extra support for the foundation either by installing special pins or tinned wire.

Support pins

These are available from the bee supply catalogs. You'll need eight pins for each deep frame and four for each shallow. No other equipment is needed to install them. In honey supers wiring seems to work better than support pins because the supers are subject to centrifugal stresses in the extractor. (Some folks say that bobby pins can be substituted for support pins)

Support wire

This is tinned wire that is stretched across the length of the frame in four passes and then embedded into the wax of the foundation. The wire supports the wax foundation during extraction. Metal grommets are inserted in the holes in the end bars to prevent the wire from cutting into the wood when it is stretched tight.

The following equipment is needed to install the wires:

- 2 spur embedders (These are spur shaped wheels mounted in handles so they roll. You heat them in water and roll them over the cross wire to melt it slightly into the wax foundation. You use two so that you can alternate them for each wire and the one not being used can be re-heated in the warm water.)
- 1 one-pound roll of tinned wire (You should order this. Wire in the hardware store is not tinned.)
- 1 package of metal grommets and punch (You should order this.)

Using a wiring jig to hold the frames while you wire them makes the process much easier. It is simple to make from a small piece of plywood and scrap lumber.

Medication

Medication is one of the more controversial subjects among beekeepers. Some use all kinds of things, others use nothing. Our most prevalent pest is the varroa mite and lately, we are seeing a new pathogen called Nosema.

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There are a variety of ways to control (not eliminate) mites. Integrated Pest Management (IPM) can use screened bottom boards, powdered sugar dusting, drone trapping frames, hard chemical pesticides like CheckMite and Apistan, organic acids like formic or oxalic acid, and soft chemicals (essential oils) like Apigard or Api Life Var.

There are two species of Nosema – *N. apis* and *N. ceranae* – the latter being more insidious. Both are bee gut pathogens and can be controlled with the medication Fumigillin. If you choose the medication route, talk to an experienced beekeeper because there are lots of products.

B. PERSONAL EQUIPMENT

Regardless of the number of hives, you probably need only one each of the following.

- One small (7") smokers with heat shield (For just a handful of hives a small smoker is more than sufficient. Get a good one like a Maxant or Dadant and not a cheap knock-off like some suppliers sell.)
- One 10-inch hive tool, standard or Maxant (You might order two: they are easy to misplace.)
- One folding veil and helmet, or a hatless veil like Glory Bee sells. (If more than one person will be working with your hive(s) at a time, each will need veil and gloves.)
- One pair of gloves (Or just use kitchen gloves.) If you order bee gloves, be sure to get the ones with leather or rubber hands and not the ones made only from cotton. The latter cannot be washed because washing removes the sizing which affords protection from bee stings.
- One bee suit - optional (A bee suit sometimes connotes coveralls with a zipper veil. A bee suit or coveralls are not necessary unless you really want them. If you get one, you might order a suit and a veil that mate using zippers.) A "Pollinator's Jacket" is a good alternative. It is half way between a full suite and just a veil.
- Bee sting kit, including EpiPen or equivalent and four 25 mg capsules of Benadryl (The EpiPen is available only by prescription. Get your doctor to prescribe one before you start beekeeping. It could save your life.)
- Notebook (Keeping records of your hive(s) will help you learn more quickly. A small notebook that you can take with you to the hives works best. Alternatively you can make notes in pencil on the hive cover.)
- One bee brush - optional (You can also just use a small, leafy branch or even a feather)
- One frame lifter - optional (Some beekeepers use them, most don't.)
- Gear box to hold your smoker and tools. A 5-gallon metal bucket and lid is ideal for this. Whatever you use should have a tight lid if you intend to transport your smoker in a closed car. Here are some other items for your gear box:
 1. Smoker fuel (Burlap, pine needles, wood shavings, etc., plus newspaper for tinder)
 2. Matches or lighter (A long-stemmed charcoal lighter works great for this.), a propane tank with a push-button started is ideal but costs a little more.
 3. Spray bottle with water (for clean-up)
 4. Bottle of rubbing alcohol (to clean propolis from your hands)
 5. Rags

C. EXTRACTING EQUIPMENT

Don't buy anything now. Your local bee club and other beekeepers probably will have everything you need for the first year.

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D. BOOKS AND MAGAZINES

It would be very difficult for a hobbyist to succeed in beekeeping without reading extensively about bee behavior and biology, and about techniques for keeping them. Here are a list of basic books and magazines. You don't need to acquire all of them, but all are worth reading.

Overview

- The Beekeeper's Handbook, Third Edition, 1998 - Diana Sammataro and Alphonse Avitabile, Cornell University Press (highly recommended if you only buy one book)
- A Book of Bees, 1988 - Sue Hubbell, Houghton Mifflin Company, Boston
- Beekeeping for Dummies, 2002 – Howland Blackistan, Hungry Minds, Inc.
- Honey Bee Biology and Beekeeping, 1999 – Dewey M. Caron, Wicwas Press, Cheshire, CT
- The Magic School Bus Inside a Beehive, 1996 - Joanna Cole, Scholastic Press, New York

Getting started

- Honey Bees and Beekeeping, Second Edition, 1996 - Keith S. Delaplane, University of Georgia
- Keeping Bees, 1986 - John Vivian, Willamson Publishing, Charlotte, VT 05445
- How to Keep Bees and Sell Honey, 13th Edition - Walter T. Kelley (13th Edition edited by Doris Pharris), Walter T. Kelley Company, Clarkson, TN
- The New Starting Right with Bees, 21st Edition - Kim Flottam, Editor, A.I. Root Company, Medina, OH 44256
- First Lessons in Beekeeping, 2007 – Keith Delaplane.
- Beekeeping, A Practical Guide, 1993 - Richard E. Bonney, Storey Books, Pownal Vermont 05261
- The Art and Adventure of Beekeeping, 1975 - Ormond and Harry Aebi, privately published by Ormond Aebi, 710 - 17th Avenue, Santa Cruz, CA 95062

General reference

- The Hive and the Honeybee, Revised Edition, 1992 - Joe M. Graham, Editor, Dadant and Sons, Hamilton, IL
- ABC and XYZ of Bee Culture, 41th Edition, 2007 - Roger A. Morse, Editor, A.I. Root Company, Medina, OH 44256
- Beekeeping in California, Publication 21422, 1987 - Cooperative Extension, University of California, Division of Agriculture and Natural Resources, Oakland, CA.

Hive management – Intermediate topics

- Hive Management, A Seasonal Guide for Beekeepers, 1990 - Richard E. Bonney, Storey Books, Pownal Vermont 05261
- The How-To-Do-It Book of Beekeeping, Fifth Edition, 1998 - Richard Taylor, Linden Books, \$15.95
- Swarming - Biology, Prevention, Control and Collecting, 1997 - From the Best of Bee Culture, A.I. Root Company, Medina, OH 44256

Magazines

- *Bee Culture*, published by Editor, A.I. Root Company, Medina, OH 44256
- *American Bee Journal*, published by Dadant and Sons, Hamilton, IL

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Local Club Web sites

- www.sanmateobee.org: Beekeeper's Guild of San Mateo County
- www.sfbee.org: San Francisco Beekeeper's Association
- www.beeguild.org: Santa Clara Valley Beekeepers Guild
- www.diabloees.org: Mount Diablo Beekeeper's Association