

STUDY GUIDE FOR THE JOURNEYMAN BEEKEEPER LEVEL  
of the NCSBA MASTER BEEKEEPER PROGRAM

Second level for the NCSBA Master Beekeeper Program.

At this level the individual should be functioning as a competent hobbyist beekeeper with the skills and knowledge for moving into the areas of sideline beekeeping if they desire.

Requirements: After completion of all the requirements of the Certified Beekeeper level and remaining a member of the NCSBA.

1. Two years minimum beekeeping experience, journeyman written exam can be taken one year after completion of the Certified level.
2. Pass the Written and Practical Journeyman Beekeeper tests.
3. Completing five approved Public Service Credits.

The written test is a variety of question types: T&F, multiple choice, fill-in blanks, small amount of matching or ordering, and short essays.

It has 100 points. Passing for the written exam is seventy-five (75) points.

Written Test Questions on the Journeyman are broken down into the following 13 categories:

Bee Biology/Anatomy  
Bee Behavior  
Bee Pests  
Bee Diseases  
Africanized vs. European honey bees  
Keeper Activities  
Keeper Equipment  
Beekeeping History  
Pesticides  
Plants  
Pollination  
Products of the Hive  
NCSBA or NC information

Some additional details that are covered at the Journeyman Level, by category.

Bee Biology / Anatomy

Intermediate level of knowledge of body parts; organs; glands, pheromones, bee development stages and lengths of time.

At this level, you should begin using 'scientific' terminology. Some examples are corbicula, hamuli, spermatheca and the following glands, organs, pheromones, and other body parts.

Knowledge of wax glands, Nasanov, tarsal, tergal, hypopharyngeal, mandibular, 9-ODA, sting, alarm, Johnstons organ, proventricular valve, Ocelli, eyes, antennae.

#### Bee Behavior:

Communication, mating behavior,

The Bee Dance, what it is and what information the bees get from it. There are many bee dances (beyond the round, sickle and waggle dances).

At this level you would need to know about those three; but are not required to draw or interpret diagrams. That is more a requirement of the Master Beekeeper.

Differences in honey bees vs wasps and other stinging insects & pollinators, including appearances and behaviors.

Robbing, Drifting, Laying Workers, Swarming, Supersedure,

#### Bee Pests

VARROA and TRACHEAL MITE, WAX MOTH, SMALL HIVE BEETLE are emphasized.

The cause and effect of each. The treatment for each. Hard chemicals vs. soft chemical vs. no chemical. You may not personally use chemicals, but you should still need to know treatments. Questions will be worded so that you do not need to know every detail of the chemical, but your awareness of them will be tested.

Especially Varroa Mites: The life cycle of the mite, different kinds of test to determine mite count, and different treatments available to use and how treatments differ.

Awareness of other pests including but not limited to: mice, bears, raccoons, ants, yellow jackets.

#### Bee Diseases

AFB, EFB, Chalkbrood, Sacbrood, Nosema, Deformed Wing Virus.

You should also be aware of non-disease disorders, such as Chilled Brood vs. Pesticide Poisoning, and even “purple brood”

What the symptoms are and how you can reduce your risks of exposing your bees.

Some symptoms are similar, and at this level, you should begin to understand how to tell the differences.

#### Africanized vs. European honey bees

Africanized Honeybees vs. European Honeybees: At this level, you no longer refer to them as “killer bees”; you would know some biological differences in addition to behavior differences. You should know about NC’s response plan, and what to say to a reporter.

### Beekeeper Activities

Manipulation of equipment to effect behavior; seasonal activities; bee industry (pkg weights vs qty) rules and regulations; queen marking; feeding; introductory knowledge of queen rearing

### Beekeeper Equipment

Knowledge of sizes of bee boxes; polariscope, refractometer, hive building tools, queen rearing tools, common apiary tools, IPM tools, extraction tools

### Beekeeping History

The History of Beekeeping and the prominent contributors in the world of beekeeping.

Genetic research; equipment innovation (and impact)

“Those who fail to learn from history are doomed to repeat it” (attributed to W. Churchill)

### Pesticides

Knowledge of the chemical use by farmers that influence beekeeping. Which formulation of pesticide is the most dangerous for honey bees, and why.

What a keeper can do in the case of 1) aerial spraying, 2) suspected pesticide kill.

You may not personally use chemicals, but you still need to know treatments that are advertised by suppliers, and what products used by agriculture, residential, and civic interests.

### Plants

NC plants i.e.: sourwood, cotton, cucumbers, corn, apples, blueberries, clover, soy,

Parts of a flower, and how the honeybee effects plant propagation.

What time of day is a plant most beneficial to honey bees?

Sources of nectar, pollen, propolis; effects on honey flavor and moisture.

### Pollination

Plants and crops general knowledge.

QUESTION EXAMPLE: Beekeeper Activity / Pollination

- A Certified Beekeeper will know that Pollination is the most important function of the honey bee.
- A Journeyman Beekeeper should know that bees only forage upon certain plants for nectar, therefore a late season placement might result in a lack of pollen intake, and therefore fall brood build up could be less than adequate and could result in an over-winter colony demise.
- A Master Beekeeper should know important parts of a Pollination Contract; should know more about plants and equipment needed to successfully work in commercial / agricultural pollination.
- A Master Craftsman Beekeeper would know all the above, and have very specific crop knowledge, and be able to converse on the problems which arise due to movement of colonies

### Products of the Hive

Knowledge of the products of the hive including: beeswax (processing and uses), propolis, pollen (collection and importance), and honey (extracted, chunk, comb, and creamed). You would need to know honey judging requirements; moisture content; crystallization, fermentation, grades, storage, labelling guidelines and requirements, temperatures that effect extraction, processing and storage.

Honey composition (introductory level) including invertase; sucrose, glucose

How to purify wax (temperatures); wax composition introductory level (lipids, hydrocarbons)

### NCSBA or NC information

The North Carolina State Beekeepers Association (NCSBA), the North Carolina Department of Agriculture and Consumers Services (NCSA&CS) Plant Industry that is the home of the Apiary Inspection Service, AND the Food and Drug Protection division. Knowledge of what they do that effects beekeeping and honey sales in N.C.

Review the requirement for the Journeyman Practical Test on the web site.

There are nine topics. The participant chooses five to be examined upon and must pass at least 4 of the 5 that they have chosen to pass the Practical Portion of the Journeyman Exam.

The Master Beekeeper Test includes all the above – further diversification and depth of knowledge by category is tested.

Suggested references for the intermediate beekeeper / Journeyman Level would include:

The Hive and The Honey Bee – Dadant & Sons, Inc.

Honey Bee Biology & Beekeeping – Dewey Caron – Wicwas Press

What Do You Know? – Clarence H. Collison – Root Publications

American Honey Plants – Frank C. Pellett – Dadant & Sons, Inc.

Manufacturer and Supplier Catalogues turn out to be a good source for seeing a product; and from the advertisement – learn what its intended usage is.

NCSBA: the website

NCSA&CS: Plant Industry Division / Food and Drug Protection – visit and read their website(s)