

A set of resources available to  
support NCBA Beekeeping Students  
become success Keepers of Bees



# Bee School 2026

Norfolk County Beekeepers  
Association

Authored by the NCBA Bee School Faculty

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# Outline for Bee School 2026

(Suggested Textbook = Beekeeping for Dummies, Howland Blackiston 5th Edition-2020)

## Session 1 BFD - CH #1 & 3 - Aggie HS Main Conference Room

- Hand-Out-Door Prize Tickets (ALL)
- Introduce the Bee School Faculty (Ed R)
- Overview of Bee School Syllabus (Ed R)
- Group networking (get to know fellow Bee School members from your local area) *(add 10 minutes)* (Ed R)
- ***BREAK - Hands-on Around the Room (equipment, Hive Set-Ups, and experiences Beekeepers sharing realistic pictures of the effort it takes to be successful)***
- The Art of Beekeeping (Tony L)
  - History of Beekeeping / Colony Collapse & Mites...Plus
  - Time Intensive, Relatively Expensive, Frustrating at Times...
  - Legal Requirements / MDAR Resource and Registration / Insurance
- Wrap-Up and What's On-Tap for Next Week (Ed R)

## Session 2 BFD - CH#1, 2, 4, 5, & 6 - Aggie Main Conference Room

- Hand-Out Door Prize Tickets (All)
- Sell Raffle Tickets (for Hive Set-ups and Bee Packages – Feb 10th) (All)
- Wood's Beekeeping Supplies (15 minutes)
- Bee Biology & Review (Ed R)
- ***BREAK - Hands-On Around the Room - Once again - reviewing equipment, safety equipment, and sharing what it takes to be successful beekeepers (All)***
- Recommended Equipment List - cost, ordering, when to order & Review (Brian Mc)
- Ordering Bees / Packages, NUCS, Queens - And Timing - when to order (Brian Mc)

## Session 3 BFD - CH#3 & 6 - Aggie Main Conference Room

- Sell Raffle Tickets (for Hive Set-ups and Bee Packages on February 10th) (ALL)
- Name Tag Sign Up (Dana/Archie)
- Barker's Beekeeping Supplies (15 minutes)
- Apiary Site Selection (Mo Khalil)
- ***Break - showing variety of packages and NUCs and demo-ing installing them in a single deep hive to start***
- Installing a Package (Ed R)
- Installing a NUC (Mo K)

## Session 4 BFD - CH#12 & 13 - Aggie Main Conference Room

- Sell Raffle Tickets (for Hive Set-ups and Bee Packages) (ALL)
- Build Your Own Hive Equipment (15 Minutes) (Neil)
  - quick presentation on an alternative option to buying finished equipment - building boxes and frames...savings, plans, and resources at break to review)
- Pests, Diseases and Mite Control Part 1 (Brian and Carolyn)
- ***BREAK - Hands On around the room with variety of Pest Management tools (Formic Pro, Oxalic Acid dribble and vaporization tools, safety equipment, hive beetle resources...) & Build Your Own resources (buying kits, plans, savings vs buying finished equipment)***
- Pests, Diseases and Mite Control Part 2 (Brian and Carolyn)
- Mentor Program & Mentor Sign Up (Archie A)
- ***BIG Raffle Drawing (2 hives 2 packages, 1 NUC and Queens from Wetlands Apiaries and Northeast Bees)***

### Session 5 - BFD - CH#7 & 8 - Aggie Main Conference Room

- Name Tag & Mentor Sign Up (Archie)
- Spring Hive Management (Brian Mc)
- **Break - Several 2-deep Hive set-ups to allow students to practice hive inspection activities**
- Hive Inspection (Ed R)

### Session 6 - BFD - CH#9 - Aggie Main Conference Room

- LAST CHANCE - Name Tag Sign Up (Dana)
- Summer Hive Management Part 1 (Carolyn H)
- **BREAK - a variety of hive set ups and beekeeping tools for students to inspect and become aware of and get hands on experience with**
- Fall and Winter Hive Management 2 (Mo K)

### Session 7 - BFD - CH#9 - Aggie Main Conference Room

- Fall / Winter Management (Mo K)
- **Hands-On Around the Room with an emphasis on winter resources - hive wraps, vapor control, and insulation**
- Fall / Winter Management (Mo K)
- Door Prize (TBD)

### Session 8 - BFD - CH#4 - Aggie Main Conference Room

- Sustainability in Your Apiary (Archie A)
- **Break - Hive set-ups and Beekeeping Equipment for students to become familiar with, including swarm tools (swarm commander, swarm traps, swarm vacuums)**
- Swarm Control (Archie A)
- Queens (Archie A.)

### Session 9 - BFD - CH#16, 17, & 18 - Aggie Main Conference Room

- Meet Your Mentor (Archie A)
- Insurance Considerations (Sheila McCarthy)
- Products of the Hive / Commercializing Your Beekeeping
  - Processing Wax (Tony L)
  - Collecting Pollen and Propolis (Tony L)
  - Honey Extraction, Bottling & Labeling (Ed R)
- **Break - NO hives this week - just honey extraction tools, wax melting and forming molds, and honey bottling and an insurance table for folks with questions for the Insurance Rep**
- Mark the Dates & Sign Up Next week or today
  - (April 11, 25, 26 - Hive Dives and Installation Demos; Norfolk County Aggie, Sweet Meadow Farms Apiary, Capron Park Zoo, Various Mentor Apiaries)

### Session 10 - BFD - Final - Aggie Cafeteria

- Smoker Lighting - (Mo K)
- Final Test (Ed R MC's the Final with All Faculty Chiming In)
- Review NCBA Activities and year-around support for beekeepers including a sign up sheet for volunteer opportunities to get involved with the club (Mo K as President)
- Receive NCBA Name Tag and Diploma (Ed R and Mo K)
- Evaluation filled out
- Schedule for "Hands-On Live Hive Dives" in April and May (Mentors and Faculty at their Apiaries)
  - Saturdays, (April 11, 25, 26 - Hive Dives and Installation Demos; Norfolk County Aggie, Sweet Meadow Farms Apiary, Capron Park Zoo, Various Mentor Apiaries)
- Cake, Snacks and Camaraderie

## **Google Group and Facebook Guidelines**

Our NCBA Google Group helps link all 500+ NCBA members and provides a forum for a convenient exchange of ideas. The primary purpose of the group is for NCBA Board Officers to communicate information, activities and events to club members.

### **Google Group Guidelines:**

The Golden Rule is Be kind, courteous, and considerate of your fellow beekeepers.

1. Only post bee related topics: News stories, new information, links, articles...
2. Make certain that the information you are posting is relevant to all NCBA Members.
3. When replying to a and e-mail, please reply to just the sender and not "REPLY ALL"
4. Don't engage in long dialog that can best be done privately by phone, off line, or directly with the poster.
5. You may also post information, questions, and resources on the Club's Facebook Page or send it to the Club's Corresponding Secretary for inclusion in the monthly NCBA Newsletter
6. Remember that we have a club of members who have varying degrees of experience beekeeping. Be respectful in any responses to their questions.
7. Remember that Google Groups allows you to schedule the number of alerts you receive from the group. If you feel you're receiving too many alerts of posts, simply moderate your alert monitor.
8. If you do not wish to be a member of the Google Group there is a simple way to unsubscribe. There is a link at the bottom of the e-mails. Just click on that link and follow the instructions.

Facebook : Norfolk County Beekeepers (<https://www.facebook.com/groups/43171368357>)

Here as well, let the Golden Rule be your guide; be kind, courteous, and considerate of your fellow beekeepers.

1. Note that you must have a Facebook Account – and once you connect with us on Facebook, it will take a day or two for our monitors to approve you.
2. Only post bee related topics
3. Don't engage in dialog or conversations vis Facebook Posts.

If you need any help with these two communication pathways, please contact Ed Rock, Mo Khalil, or Dana Wilson.

# The Nice Basic Guidelines of Beekeeping

(adapted by Tony Lulek, NCBA, Carl J. Wenning, Heart of Illinois Beekeepers Association, and Keith Delaplane, Honeybees and Beekeeping)

1. Thou shalt only use standard beekeeping equipment
  - a. The Langstroth hive is the standard design.
  - b. It permits unprecedented access to the bees and their brood and allows for complete interchangeability of parts.
  - c. The modern hive respects bee space and permits regular monitoring of the colony for diseases and parasites.
  - d. Traditional skeps (straw or clay) are not allowed by law because they don't permit inspection.
2. Thou shalt be considerate of non-beekeeping neighbors
  - a. Considerate hive placement – keep your neighbors in mind
  - b. Inform your neighbors you are starting beekeeping. Most will embrace your hobby, but it is important to be aware of folks who may be allergic, have small children, are afraid of bees, or have swimming pools.
    - i. Make sure the hive's flight paths don't cross sidewalks, pools, or play areas.
  - c. Follow your town's ordinances for beekeeping (registering hives, informing neighbors, ...)
  - d. A jar of honey (borrow some from a fellow club member) always sweetens the conversation with a neighbor.
3. Thou shalt control diseases and parasites
  - a. Be aware of the potential diseases and parasites your hive may encounter. Inspect your hive regularly to assess the hive's health.
  - b. Many diseases and pests can be transmitted from hive to hive, so respect your fellow beekeepers in the area and maintain healthy hives so that you don't negatively impact your fellow local beekeepers.
  - c. Know the common diseases and parasites you should be inspecting for, and apply treatments as they become necessary from your inspection and testing results.
  - d. Always follow manufacturer instructions for applying any treatment to your hives. The LABEL is the LAW
  - e. And alcohol washes to test for mites is a critical part of your pest management process.
  - f. Don't Be A Mite Bomb in your Neighborhood**
4. Thou shalt maximize your colony populations for the main nectar flows and in preparation for the winter.
  - a. Requeening, disease control, feeding sugar syrup, and pollen substitute can help achieve this objective.
  - b. Control swarming by keeping young queens and reversing hive bodies during spring, and supering appropriately.
  - c. Don't tolerate marginal colonies. Requeen, medicate, supply frames of brood to weak colonies or merge them with other colonies. Remember that a strong colony is more productive than two weak colonies.
  - d. Appropriately apply supers to capture nectar from the flow and help control swarming and encourage foraging.

- e. Remove supers in late summer to encourage colonies to pack the brood nest with honey for winter survival.
5. Thou shalt protect your beekeeping equipment
- a. Wooden ware, hive tools, protective gear are all expensive and getting more so by the day. Treat your tools and hives with care to extend their life.
    - i. Paint your hive equipment properly and it will last for years
    - ii. Wash your hive tools to promote cleanliness and reduce possibility of disease transmission
    - iii. Frequently wash your protective gear to reduce the disease cross-contamination and remove attack pheromones
    - iv. Position and raise your hives off the ground to protect against ants, termites, and water damage
6. Thou shalt take pride in your bees and the products of the hive
- a. Keep your honey handling equipment “food-grade” clean. And always strain your honey for particulate matter (bee parts...)
  - b. Use standard honey jars and resist the urge to sell or give away honey in old mayonnaise jars – such packaging looks cheap and unprofessional and can negatively impact how the consumer thinks about all local honey.
  - c. Use an appealing label and never let the jars you sell get sticky.
  - d. Market your product with pride because your bees worked hard to produce it.
7. Thou shalt help your bees through winter
- a. Treat for nosema, varroa mites, and other diseases before fall so your hives enter the winter disease and parasite free.
  - b. Make sure you have sufficient winter brood and food stores (about 100lbs in a two deep or three medium brood chamber)
  - c. Reduce Entrances, add mouse guards, add insulation, add moisture control techniques, to prepare them for cold and windy weather.
  - d. Check colonies mid-winter for food supplies and supplement with sugar patties if needed.
8. Thou shalt join beekeeping organizations and continue your beekeeping journey / education.
- a. You’ll find great numbers of experienced beekeepers who are willing to help you become successful
  - b. These organizations are filled with experience and knowledge – take advantage of it
  - c. Subscribe to bee journals; American Bee Journal or Bee Culture.
  - d. Read your club’s newsletter – NCBA’s is the *Norfolk Bee*.
  - e. Support your local bee organizations because they advocate for you with local, state, and federal groups on pesticide legislation, and beekeeping rules.

## **MASSBEE – <https://massbee.org/>**

Most Massachusetts counties have beekeeping organizations that provide grass roots support for local beekeepers and people interested in beekeeping.

We urge you to contact your local organization for information regarding Bee Schools, Continuing Educational Opportunities and Bee removal.

### **Barnstable County Beekeepers Association**

<http://www.barnstablebeekeepers.org/>

### **Northern Berkshire Beekeepers Association**

<https://northernberkshirebeekeepers.wordpress.com/>

### **Boston Area Beekeepers Association**

<http://www.bostonbeekeepers.org/>

### **Bristol County Beekeepers Association**

<https://www.bristolbee.org/>

### **Essex County Beekeepers Association**

<http://essexcountybeekeepers.org/>

### **Franklin County Beekeepers Association**

<http://www.franklinmabeekeepers.org/>

### **Hampden County Beekeepers Association**

<http://hampden-county-beekeepers.org/>

### **Middlesex County Beekeepers Association**

<http://www.middlesexbeekeepers.org/>

### **Norfolk County Beekeepers Association**

<http://www.norfolkbees.org/>

### **Plymouth County Beekeepers Association**

<https://www.plymouthcountybeekeepers.org/>

### **Worcester County Beekeepers Association**

<http://worcestercountybeekeepers.com/>

## **MDAR (Massachusetts Department of Agricultural Resources Apiary Program) <https://www.mass.gov/apiary-program-honey-bees>**

MDAR offers a significant set of resources, from **[hive inspections](#)** to disease control and alerts, to public information and support for state beekeepers.

Register your hives here: <https://www.mass.gov/forms/apiary-and-colony-registration-form>

They also host educational events both online and at the state apiaries in Bristol County and on the UMass Campus in Amhurst, MA.

## **State of Massachusetts Laws and Regulations**

URL for Bee Regulations (Massachusetts General Laws Chapter 128 – 32-36A and 38 address inspections, as well as keeping, selling, transporting, and control of diseases of honeybees. – [Click Here](#)

### **Frequently Asked Questions About Honey Bees and Beekeeping in Massachusetts**

**Are there state laws that permit or prohibit beekeeping or apiary establishment in Massachusetts?**

- There are no state laws or regulations that permit or prohibit beekeeping. To learn more check out the Massachusetts state [laws](#) and [regulations](#) that pertain to honey bees and beekeeping. There may be local rules or ordinances for your town/city that pertain to honey beekeeping so inquire with your local government office to learn more. To learn more about the basics of apiary establishment, check out these Best Management guides from the [Massachusetts Beekeepers Association](#) and the [Honey Bee Health Coalition](#).

***Do I need a permit to keep honey bees in Massachusetts?***

- At this time, a permit is not required by the state, but could be required by your local town/city. Contact your local Board of Health and/or Town Offices to get more information about local requirements.

***How do I become a honey beekeeper and start an apiary?***

- Contact your local [County Beekeeping Organization](#) to learn more about honey beekeeping in your area and consider taking a Bee School course. Also check out these Best Management guides from the [Massachusetts Beekeepers Association](#) and the [Honey Bee Health Coalition](#).

***Are there state funded sources of financial assistance to create an apiary and become a beekeeper?***

- There is no funded financial assistance available for those interested in starting an apiary or becoming a beekeeper. However, we have a [MDAR Apiary Program](#) that provides a myriad of support options for new beekeepers as part of the program services.

***How do I register my honey bee colonies in Massachusetts?***

- Voluntary apiary and colony registration can be requested by completing the [MDAR Apiary and Colony Registration Form](#).

***How do I request an inspection of my apiary, honey bee colonies and used equipment in Massachusetts?***

- Inspections can be requested by completing the [MDAR Apiary Inspection Request Form](#). Inspections can be requested at any time, but advance notice of at least 30 days is preferred. Given the volume of inspection requests received by the MDAR Apiary Program each year, requests will be limited to one per season/per apiary/colony(ies) unless emergency circumstances arise (i.e. suspected American Foulbrood, Pesticide Related Bee Kill or sudden colony death).

### ***Can I sell my locally collected honey in Massachusetts?***

- Yes, but you must comply with the [law](#) relating to honey labeling and any local ordinances. Contact your local Board of Health and/or Town Offices to get more information about local requirements. Learn more about [honey producers](#) in Massachusetts and consider listing yourself as a honey producer on the [MassGrown map](#).

### ***How do I get help for a swarm of honey bees?***

- The MDAR Apiary Program does not remove and/or relocate honey bee swarms. Instead of harming the bees, try to get them safely rehomed by getting assistance from beekeepers in your area through the local [honey beekeeping association](#).

### ***How do I get help to remove a colony of honey bees inside my house or associated structure?***

- The MDAR Apiary Program does not remove and/or relocate honey bee colonies. Instead of harming the bees, try to get them safely rehomed by getting assistance from beekeepers in your area through the [Massachusetts Beekeepers Association County Beekeeping Organizations](#) list.

### ***Who do I contact to file a complaint against my neighbor who has setup an apiary in their yard?***

- The MDAR Apiary Program does not handle neighbor complaints about honey bees or established apiaries. Contact your local town/city government office get additional support.

### ***Who do I contact to file a complaint about honey bees in my pool?***

- The MDAR Apiary Program does not handle complaints about honey bees in pools. Contact your local town/city government office to get additional support.

## **Honey Labeling in Massachusetts**

### Section 36B: Labeling and sale of honey; restrictions

No person shall package, label, sell, keep for sale, expose or offer for sale, any article or product in imitation or semblance of honey branded as "honey", "liquid or extracted honey", "strained honey", "imitation honey" or "pure honey" which is not pure honey made by honey bees.

No person, firm, association, company or corporation, shall manufacture, sell, expose or offer for sale, any compound or mixture branded or labeled as "honey" which consists of honey mixed with any other substance or ingredient.

There shall be printed on the package containing such compound or mixture a statement of the ingredients of which it is made and if honey is one of such ingredients it shall be so plainly stated in the same size type as are the other ingredients; provided, however, such compound shall not be packaged, sold, exposed for sale, or offered for sale as "honey" or "imitation honey" nor shall such compound or mixture be branded or labeled with the word "honey", other than as herein provided.

## **Beekeeping in Massachusetts**



Massachusetts is home to a diverse and active beekeeping industry, with current estimates indicating 6,000–6,500 beekeepers managing 40,000–45,000 honey bee colonies across the Commonwealth.

More than 45% of Massachusetts agricultural commodities rely on bees for successful crop pollination. Beyond their essential pollination services, honey bees also contribute valuable hive products such as wax, propolis, royal jelly, and honey. Collectively, beekeepers in Massachusetts produce an estimated 1.5 million pounds of honey each year.

Are you a beekeeper selling honey and would like to be listed on the [MassGrown Map](#)? If so, please fill out [survey form](#).

You can also request [MassGrown honey stickers and posters here](#) to use as marketing materials.

### **About honey bees**

Honey bees collect nectar from flowers and transform it into honey using specialized enzymes and evaporative processes within the hive. They store the finished honey in wax-sealed cells for future use.

Although a single worker bee produces only about 1/12th of a teaspoon of honey in its lifetime, the colony's collective effort is remarkable—it takes roughly 2 million flowers and bees flying 50,000 miles to produce just one pound of honey. Working together, a healthy hive can make several hundred pounds of honey in a year. Bees use a portion of this honey as food and store the rest to sustain the colony through winter. Because honey bees often produce more honey than they need, beekeepers responsibly harvest the surplus for human consumption.

## Types of honey



Honey is sold in several forms, with the most common being comb honey, liquid honey, and creamed honey. Comb honey consists of natural sections of honey-filled wax comb taken directly from the hive. Liquid honey—the most familiar form—is produced by extracting honey from the comb and straining it until smooth.

Over time, most liquid honey will naturally crystallize, transforming from a liquid to a semi-solid state. Many people mistakenly believe crystallized honey is spoiled or unsafe to eat. This is false—properly sealed natural honey never expires. Crystallization only changes the honey's color and texture, not its flavor or safety. If your honey crystallizes, simply place the container in a warm water bath (about 130–140°F, often achievable with hot tap water). Avoid microwaving or boiling, especially in plastic containers, as this can melt the plastic and compromise the honey. Once the crystals dissolve, give the honey a stir and it will return to its smooth liquid form.

Crystallization is influenced by temperature—honey stored between 50–59°F is more likely to crystallize—and by the ratio of glucose to fructose, with higher-glucose honeys crystallizing more quickly. Creamed honey is intentionally produced by blending crystallized honey into liquid honey to achieve a smooth, spreadable texture. This specialty product may be less widely available than liquid or comb honey.

Local beekeepers harvest fresh honey from late spring through mid-fall, so availability can be seasonal. It's always a good idea to call ahead when seeking local honey products.

## **Massachusetts State Regulations**

- **Disease control:** State law requires the control of bee diseases and parasites. Inspectors have the right to access apiaries for inspection, and you cannot refuse entry.
- **Transportation:** You must have a certificate of health inspection from the state of origin before transporting bees or used equipment into Massachusetts to show they are free from disease.
- **Registration:** While not mandatory, the Massachusetts Department of Agricultural Resources (MDAR) encourages beekeepers to register their hives.

## **Local regulations**

- **Permits:** Many cities and towns require a local permit to keep bees, and some may even prohibit beekeeping entirely.
- **Hive limits:** Some municipalities limit the number of hives you can keep.
- **Placement and barriers:** Local rules often dictate hive placement, requiring them to be a specific distance from property lines or other animals. Many areas require a "fly-away" barrier at least six feet tall if hives are less than 15 feet from a property line to redirect bee flight upwards.

## **How to get started**

1. **Contact your local government:** First, check with your local town or city hall, the Board of Health, and/or Inspectional Services Department for specific local ordinances.
2. **Register if required:** If a permit is required, follow the application process, which may include a site plan and a fee.
3. **Follow placement rules:** Adhere to local rules for hive placement, including distance from property lines, and be prepared to install a fly-away barrier if needed.
4. **Learn best practices:** The [Massachusetts Beekeepers Association](#) and [Mass.gov](#) provide resources on best management practices to keep your bees healthy and productive.

## Request for Exclusion from Wide Area Application of Pesticides

<https://www.mass.gov/forms/request-for-exclusion-from-wide-area-application-of-pesticides>

Pursuant to 333 CMR 13.03, any private property owner or individual in lawful control of a property may request exclusion from wide area applications of pesticides. This includes applications performed by the Mosquito Control Project/District that may provide services in your city/town or any area in the Commonwealth. Requests must be made to the Department of Agricultural Resources in accordance with 333 CMR13.03 and will go into effect fourteen **(14) days** from the date the request is made. All exclusion requests expire on December 31st of the calendar year in which it was made.

### Number of Hives in Relation to Lot Size

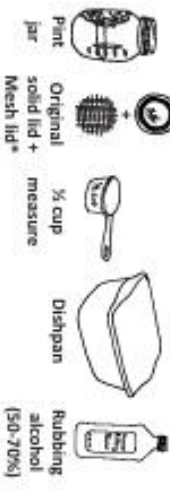
Acreage of Lot Size	Square Footage / Lot Size	Number of Colonies
¼ acre	10,000 sq feet or 50' x 215'	2
¼-1/2 acre	21,000 sq feet or 100' x 218'	4
½-1 acre	43,560 sq feet or 150' x 290'	6
1 acre or more		12

## SAMPLE REGULARLY (AT LEAST ONCE A MONTH)

### Alcohol wash

The most accurate way to determine  
*Varroa* levels in your hives

#### MATERIALS



\*1/8 inch hardware cloth, cut to match solid lid

#### 10 STEPS

- 1) Pour alcohol into jar. Set materials in easy reach
- 2) Find a frame of open brood  
*Check that the queen is not on frame!*
- 3) Shake adult bees from frame into dishpan  
**Scoop 1/2 cup (~300) bees and pour into jar**
- 4) Shake remaining bees from bin into colony
- 5) Seal solid lid on jar and shake for 1-2 min
- 6) Let jar sit for 1-2 minutes
- 7) Replace solid lid with mesh lid
- 8) Shake jar contents into empty dishpan
- 9) Count the total # mites.  
*If there are 4+, it is time to apply a chemical treatment (see inside of brochure)*
- 10) Discard bees and mites



Wash all materials; can reuse alcohol  
→ email [bees@mass.gov](mailto:bees@mass.gov) for a free kit  
while supplies last!

## KNOW YOUR PEST

Meet the ***Varroa* mite**...

The *Varroa* Mite, *Varroa destructor*, is an external parasite that feeds on honey bee adults and brood. **They weaken bees and transmit viruses.**



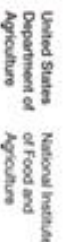
**Unmonitored and unmanaged infestations of *Varroa* mites will result in colony death.**

#### COMMON SIGNS OF MITE DAMAGE:

- Open or damaged pupal cells
- Chewed-down pupae
- Emerging adult bees with deformed or missing wings



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Integrated Pest  
Management (IPM) for

## *Varroa* mites



**IPM** is a decades-old farm strategy for mitigating pests while minimizing chemical use. Experts now recommend IPM for *Varroa*.

Rather than relying on a "silver bullet", good IPM incorporates multiple practices throughout the season, based on pest levels and pest biology.

#### IPM PRINCIPLES:

- **KNOW YOUR PEST**
- **PREVENT** pest build up using non-chemical practices
- **SAMPLE REGULARLY** to track pest population levels
- **INTERVENE** with pesticides when populations reach damaging thresholds (very products to prevent pest resistance)



This pamphlet will help you to use IPM principles to manage *Varroa* mites.

## PREVENT PEST BUILD-UP USING NON-CHEMICAL PRACTICES

ALL YEAR

### Hive Differentiation

Reduce mite transmission via bee drift by maximizing hive spacing and varying hive color and orientation.



### Screened Bottom Board

Studies show minked results on Varroa but can also be used to increase hive ventilation.



SPRING AND SUMMER

### Re-Queen

Select mite resistant stock when available.



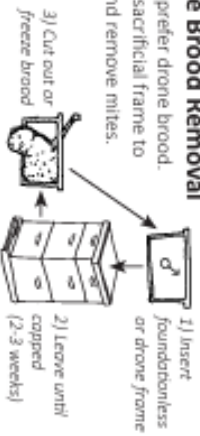
### Brood Interruption

Split hive or allow to swarm (capture swarm!) to interrupt mite reproduction.



### Drone Brood Removal

Mites prefer drone brood. Use a sacrificial frame to bait and remove mites.



### Robber Screens

Install screens to reduce mite transmission via drift and robbing.



## INTERVENE WITH PESTICIDES IF PESTS EXCEED THRESHOLDS (4+ MITES/SAMPLE)

MITICIDES AT-A-GLANCE Always follow the label! The label is the law. Find full labels on the [EPA database](#).



Product Name <i>Active Ingredient</i> (mode of action)	Season [temp] = less effective when brood is present	Honey super safe?	Treatment Duration	Application Type	Personal Protective Equipment
<b>Apivar®</b> , <b>Apivar® 2.0</b> <i>Amrtraz</i> (contact)	[Not Temp Dependent] 	<b>NO</b>	6-10 weeks do not use more than 2X per year	PLASTIC STRIP  for full video instructions, visit the <a href="#">Honey Bee Health Coalition</a>	 Miticides can harm people too!! Protect yourself with proper PPE*
<b>ApiGuard®</b> <i>Thymol</i> (fumigant)	[60-105°F] 	<b>NO</b>	4-8 weeks can add supers immediately	GEL OR GEL TRAY 	
<b>Api Life Var®</b> <i>Thymol, Menthol, Eucalyptus oil</i> (fumigant)	[64-95°F] 	<b>NO</b>	26-32 days wait 4 weeks to add honey supers	FOAM WAFER 	
<b>Formic Pro®</b> <i>Formic acid</i> (fumigant)	[50-85°F] Kills mites <i>in brood!</i> 	<b>YES</b>	2-3 weeks 	GEL STRIP 	 Recommended (not required)
<b>Api-Bioxal®, Ez-Ox Tablets®</b> <i>Oxalic acid dihydrate</i> (contact, fumigant)	[No Temp Restriction] 	<b>YES</b>	Immediate (but may need to repeat) 	POWDER, TABLET:  Spray Double Fumigation (Aqua)	
<b>Varroasan®</b> <i>Oxalic acid dihydrate</i> (contact)	[No Temp Restriction] 	<b>YES</b>	6-8 weeks Pesticide must be separated by at least one chamber from any honey to be extracted	FIBER STRIP 	
<b>HopGuard III®</b> <i>Potassium salt of hops beta acids</i> (contact)	[55-99°F] 	<b>YES</b>	2-4 weeks 	CARDBOARD STRIP 	

### \* PERSONAL PROTECTIVE EQUIPMENT (PPE):

1 Chemical-resistant gloves



2 Safety goggles



3 Respirator with an organic particulate filter



## Recommended Equipment List (Item & Quantity for Complete Hive)

### 2 Deep Configuration\*

<i>Hive Items from the Bottom Up</i>	<i>Quantity</i>
Hive Stand – cinder blocks or bought	1
Landing Board (optional)	1
Entrance Reducer	1
Mouse Guard	1
Screened Bottom Board	1
Deep Box with 10-Frames (for Brood)	2 Boxes & 20 Deep Frames
Queen Excluder	1
Medium Box with 10-Frames “Honey Supers”	2 Boxes & 20 Medium Frames
Inner Cover	1
Telescoping Outer Cover	1
Cargo Strap or Large Rock or Brick	1
Winter – Insulation – Hive Wrap (optional)	1
Winter - Insulation for Top	1
Winter – Moisture Control (optional)	1
Winter – Feeding Shim	1

### 3 Medium Configuration\*

<i>Hive Items from the Bottom Up</i>	<i>Quantity</i>
Hive Stand – cinder blocks or bought	1
Landing Board (optional)	1
Entrance Reducer	1
Mouse Guard	1
Screened Bottom Board	1
Medium Box with 10-Frames (for Brood)	3 Boxes & 30 Medium Frames
Queen Excluder	1
Medium Box with 10-Frames “Honey Supers”	2 Boxes & 20 Medium Frames
Inner Cover	1
Telescoping Outer Cover	1
Cargo Strap or Large Rock or Brick	1
Winter – Insulation – Hive Wrap (optional)	1
Winter - Insulation for Top	1
Winter – Moisture Control (optional)	1
Winter – Feeding Shim	1

\*While we don't recommend 8-frame boxes, they are a viable option if looking to minimize lifting weight for the beekeeper

## Common Hive Tools & Equipment

<i>From the inside out</i>	<i>Quantity</i>
Bee Suit – Protective Gear – Overall / Jacket / Veil	1
Gloves – Protection - Lambskin beekeeping gloves	1
Gloves – Reduce Disease Transmission – Nitrile Gloves or dishwashing gloves that are easily sterilized	Assorted
Rubber Bands or Bike Clips – to hold your long pants closed at the bottoms	Assorted
Smoker	1
Smoker Fuel – “DRY” Pine Needles, pinecones, sticks and twigs, wood pellets, or “official” burlap smoker fuel	As Needed in a bucket
Lighter	Long Neck Bic Lighter or Propane Torch or Smoker – always a good idea to have a back-up
Hive Tool	1
Magnifying Lens	1
Flashlight	1
Water Bottle and Benadryl in case of sting	1 each
Bee Brush	1
Gallon Containers for Sugar Syrup - Feeding	2+
Quart Mason Jar with lid (perforated)	4+
Bucket / Tool Box to hold your equipment	1

## Beekeeping Suppliers in the Northeast

<i>Local Suppliers / Stores</i>	<i>Address</i>	<i>Phone / Web</i>
Wood’s Beekeeping	690 George Washington Hwy, Lincoln, RI 02865	401-305-2355 <a href="http://www.woodsbees.com">www.woodsbees.com</a>
Barker’s Beekeeping	93 Dudley Road, Oxford, MA 01540	508-797-7412 <a href="http://www.barkersbeehives.com">www.barkersbeehives.com</a>
Northeast Bees (Queens and NUCs)	Archie Acevedo, Franklin, MA	508-934-6673 northeastbee@gmail.com
Wetland Apiaries	Bob Hickey, Brockton , MA	508-587-2388 wetlandsapiary@gmail.com
Warm Colors Apiary	2 South Mill River Road, South Deerfield, MA 01373	413-665-4513 <a href="http://www.warmcolorsapiary.com">www.warmcolorsapiary.com</a>
<b><i>Beekeeping Catalog Companies</i></b>		
Better Bee	Greenwich, New York	1-800-632-3379 <a href="http://www.betterbee.com">www.betterbee.com</a>
Dadant	Hamilton, IL	1-888-922-3324 <a href="http://www.dadant.com">www.dadant.com</a>
Mann Lake		1-800-880-7694 <a href="http://www.mannlakeld.com">www.mannlakeld.com</a>

## **NCBA Bee School Mentoring Program Guidelines**

The Norfolk County Beekeepers Association organizes a mentoring program that provides encouragement, support, and guidance to graduates of the NCBA Bee School during their first year of beekeeping. Mentors are official envoys of NCBA and the NCBA Bee School. The role of the mentor is not to manage a student's hives, but to help students to better care for their own bees and hives. Here are the NCBA Mentoring practice guidelines:

1. Mentors should only contact students assigned to them by NCBA bee school, to introduce themselves and offer assistance. This contact may occur during one of the later bee school sessions. If the introduction cannot take place during bee school class, mentors will introduce themselves and offer assistance through email, phone, or meeting.
2. The mentors and students will be respectful of each other's time; whether through email, phone calls, or visits for hive inspections.
3. It is the student's responsibility to contact their mentor should any questions arise or should the student want their mentor to visit their hives.
4. During any visit to the student's apiary, the student and mentor should both be present. The mentor's role is to educate and assist the student when doing a hive check. The student should be doing the work while the mentor offers guidance and suggestions.
5. The mentor should never use any of their bee equipment or tools in the student's hives. This includes gloves as well. This helps deter the spread of disease.
6. The mentor should never exchange or move equipment, frames, or bees from their hives to the student's hives or vice versa.
7. Mentors will stress the importance of Integrated Pest Management (IPM), especially for varroa mites. Mentors will also aid in education of identifying and treating diseases of the bees and hives.
8. Mentors will encourage the use of good beekeeping practices regarding equipment, the health of bees, consideration of neighbors, and the community as a whole.
9. Mentors may advise people in addition to those assigned through bee school and students may request advise and visits from individuals other than their assigned mentor. These arrangements are informal.
10. If, for any reason, the mentor/student relationship is not a good fit, either person should contact the bee school staff in order to insure that the student's mentoring needs are met. We are all here to help the students become good beekeepers.

Last but not least, being a mentor and a new beekeeper are equally rewarding experiences. This is a great opportunity for established beekeepers to hone their skills and to also pass along their knowledge and experiences to the next generation of beekeepers.

## Popular Beekeeping Books for YOUR Library

<u>Category</u>	<u>Name</u>	<u>Author</u>
<u>Beginner</u>	<u>First Lessons in Beekeeping</u>	<u>Keith Delaplane</u>
<u>Beginner</u>	<u>Beekeeping for Dummies</u>	<u>Howland Blackiston</u>
<u>Beginner</u>	<u>The Backyard Beekeeper. An Absolute Beginner's Guide to Keeping Bees in Your Yard and Garden</u>	<u>Kim FloAum</u>
<u>Beginner</u>	<u>The Queen and I. Step by step instruction for the beginning beekeeper</u>	<u>Edward A. Weiss</u>
<u>All Levels</u>	<u>American Bee Journal Magazine</u>	
<u>All Levels</u>	<u>Bee Culture Magazine</u>	
<u>All Levels</u>	<u>How to Do It Book of Beekeeping</u>	<u>Richard Taylor</u>
<u>All Levels</u>	<u>ABC and XYZ of Bee Culture</u>	<u>A.I.Root, 40th ediEon</u>
<u>All Levels</u>	<u>A Filed Guide to Honey Bees and Their Maladies</u>	<u>PennState</u>
<u>All Levels</u>	<u>Honeybee Democracy</u>	<u>Thomas D. Seeley</u>
<u>All Levels</u>	<u>The Social Organization of Honeybees</u>	<u>John B. Free</u>
<u>All Levels</u>	<u>The Honey Bee</u>	<u>James L.Gould &amp; CarolGrantCould</u>
<u>All Levels</u>	<u>The Joys of Beekeeping</u>	<u>Richard Taylor</u>
<u>All Levels</u>	<u>Heart of the Hive</u>	<u>Hilary Kearney</u>
<u>Intermediate</u>	<u>Fifty Years Among the Bees</u>	<u>Dr. C.C.Miller</u>
<u>Intermediate</u>	<u>Honey in the Comb</u>	<u>Eugene E. Killion</u>
<u>Intermediate</u>	<u>Keeping Bees:Handbook for the Hobbyist Beekeeper</u>	<u>Franklin H. Carrier</u>
<u>Intermediate</u>	<u>Increase Essentials</u>	<u>Lawrence John Connor</u>
<u>Intermediate</u>	<u>The Classroom. Beekeeping Questions and Answers</u>	<u>Jerry Hayes</u>
<u>Intermediate</u>	<u>Better Beekeeping</u>	<u>Kim FloAum</u>
<u>Intermediate</u>	<u>Honey Bee Diseases and Pests</u>	<u>Marla Spivak</u>
<u>Advanced</u>	<u>Beekeeping At Buckfast Abbey</u>	<u>Brother Adam</u>
<u>Advanced</u>	<u>Breeding Super Bees</u>	<u>Steve Taber</u>
<u>Advanced</u>	<u>Natural Beekeeping: Organic Approaches to Modern Apiculture</u>	<u>Ross Conrad, Gary Paul Nabhan</u>
<u>Advanced</u>	<u>Milestones in Beekeeping and the Swarm Trigger Discovered</u>	<u>A.E. McArthur</u>
<u>Advanced</u>	<u>Breeding the Honeybee</u>	<u>Brother Adam</u>
<u>Advanced</u>	<u>Beekeeping. The complete Idiot's Guide</u>	<u>Dean Seglitz &amp; Laurie Herboldsheimer</u>
<u>Advanced</u>	<u>Bee Sex Essentials</u>	<u>Lawrence John Connor</u>
<u>Advanced</u>	<u>Contemporary Queen Rearing</u>	<u>Harry H. Laidlaw, Jr</u>
<u>Advanced</u>	<u>Beekeeping in Northern Climates</u>	<u>Marla Spivak</u>
<u>Advanced</u>	<u>Successful Queen Rearing</u>	<u>Marla Spivak</u>

## Bee Syrup Mixing Chart

Feeding bees can quickly become confusing, especially for the new beekeeper. This chart will help you easily mix the desired quantity and ratio of syrup. Keep in mind that you will end up with slightly more syrup than the amount of water used (fortunately, you can place the extra in the fridge for a few days).

To make: Heat desired amount of water until almost boiling. Do not boil the water. Remove from heat and stir in sugar. Allow to cool to room temperature and then feed to bees. Boiling water will result in a crystalized solution.

- 1 gallon of water makes about 1 1/45 to 1 1/2 gallons of syrup
- 1/2 gallon of water makes about 2/3 to 3/4 gallon of syrup
- 1 quart of water makes about 1 1/4 to 1 1/2 quart of syrup
- 1 pint of water makes about 1 1/4 to 1 1/2 pint of syrup

<b>Desired Ratio Sugar to Water</b>	<b>Sugar</b>	<b>Water</b>
2:1 Feed in Fall due to lower moisture content – allows bees to do less work to dehydrate and pack in cells)	16 pounds (32 1/2 cups)	1 gallon (128 ounces)
2:1	8 pounds (16 1/4 cups)	1/2 gallon (64 ounces)
2:1	4 pounds (8 cups)	1 quart (32 ounces)
2:1	2 pounds (4 cups)	1 pint (16 ounces)
1:1 Feed in Spring – stimulated brood growth and wax building	8 pounds (16 1/4 cups)	1 gallon (128 ounces)
1:1	4 pounds (8 cups)	1/2 gallon (64 ounces)
1:1	2 pounds (4 cups)	1 quart (32 ounces)
1:1	1 pound (2 cups)	1 pint (16 ounces)

# NCBA Beekeepers Yearly Calendar

<u>Month</u>	<u>Activities and Observations</u>
<u>January</u>	<ul style="list-style-type: none"> <li>• Keep entrances clear of ice and snow</li> <li>• Lift hives / weigh them to evaluate honey stores</li> <li>• Feed candy/granulated sugar if needed</li> <li>• Clean / Repair / Assemble equipment</li> </ul>
<u>February</u>	<ul style="list-style-type: none"> <li>• Order package bees for April / May delivery</li> <li>• Redistribute remaining hive stores if needed</li> <li>• Clean hive entrance and surroundings</li> <li>• Check to see if hive needs to be fed</li> </ul>
<u>March</u>	<ul style="list-style-type: none"> <li>• Feed dry sugar or candy if needed</li> <li>• Feed 1:1 syrup</li> <li>• Feed Pollen substitute to increase brood production</li> </ul>
<u>April</u>	<ul style="list-style-type: none"> <li>• Prepare empty hives for new bees</li> <li>• Install package bees</li> <li>• Feed 1:1 syrup</li> <li>• Get to know your mentor</li> <li>• (2<sup>nd</sup> year) at dandelion bloom reverse the brood supers</li> </ul>
<u>May</u>	<ul style="list-style-type: none"> <li>• Feed 1:1 syrup</li> <li>• Check mites every 2 weeks as population builds</li> <li>• Contact your mentor as questions arise</li> <li>• Add a second brood box (70% rule)</li> <li>• Plant Pollinators</li> <li>• Check brood patterns for disease and swarm cells(2<sup>nd</sup> year)_</li> <li>• Add Honey Super (2<sup>nd</sup> year)</li> </ul>
<u>June</u>	<ul style="list-style-type: none"> <li>• Mite Check every 2 weeks – treat if needed</li> <li>• Contact your mentor if needed</li> <li>• Add 2<sup>nd</sup> Deep box or 3<sup>rd</sup> Medium (year 1)</li> <li>• Feed 1:1 syrup</li> <li>• Plant Pollinators</li> <li>• Add Supers as needed based on nectar flow (2<sup>nd</sup> year)</li> <li>• Continue to watch for swarming (2<sup>nd</sup> year)</li> </ul>
<u>July</u>	<ul style="list-style-type: none"> <li>• Mite count every 2 weeks</li> <li>• Contact your mentor with any questions</li> <li>• Inspect for Queen-right</li> <li>• Remove and extract capped honey supers (2<sup>nd</sup> year)</li> </ul>
<u>August</u>	<ul style="list-style-type: none"> <li>• Mite Count every 2 weeks / treat if needed</li> <li>• Contact your mentor with any questions</li> <li>• Place extracted supers (2<sup>nd</sup> year)</li> <li>• Requeen, if planned or needed, during nectar flow</li> </ul>
<u>September</u>	<ul style="list-style-type: none"> <li>• Mite count every 2 weeks / treat if needed</li> <li>• Contact your mentor for help preparing for winter</li> <li>• Install Mouse Guards</li> <li>• Flip inner covers to winter mode</li> <li>• Remove Honey Supers prior to medicating</li> </ul>
<u>October</u>	<ul style="list-style-type: none"> <li>• Feed 2:1 Sugar Syrup to build food stores for winter</li> <li>• Winterize your hive; Insulate, check ventilation, mouse guard...</li> <li>• Make sure the bottom board insert is in place</li> </ul>
<u>November &amp; December</u>	<ul style="list-style-type: none"> <li>• Make needed equipment repairs</li> <li>• Leave the bees alone</li> </ul>

## **To Bee or Not to Bee a Beekeeper?**

Some data shows that 60% of new beekeepers will quit within the first two years. Bee keeping has a romantic aspect that attracts a wide following, but the day to day life of a beekeeper is anything but romantic. Here are some of the things that can cause a new beekeeper to hand up their hive tool.

### **Keeping bees is not like having a pet**

We've all grown up around house pets, and we understand the rules: "Dogs have masters, and cats have servants." With that understanding, a good diet, lots of exercise, and annual trips to the vet, most of us can do well. But bees are different. A honeybee will not curl up in your lap, lick your face, or platy fetch. To honeybees, we are neither masters or servants. Instead, we are predators to be dealt with as needed.

### **The learning curve is steep and long**

You don't learn to bee keep in a season, or a year, or fifty years. A true beekeeper never stops learning and never stops being surprised and curious. If you think you will know the ropes in a few months, you have a big disappointment ahead.

### **Beekeeping is more expensive than you imagined**

First comes the complete beginners kit, something that is reasonably priced. But then it's the bees, shipping cage(s), replacement queens, hive stand, sugar, feeders, a better hive tool, books, magazines, all the wooden ware that didn't come with the hive package, and a second bee suit that fits better or one for your spouse or children or grandchildren.

Next you find that a better screwdriver, new hammer, carpenter's square, some paint, a pneumatic Nailer are all things that would be nice to have to help with your beekeeping tasks. Or maybe you decide to have a specialty hive, or an extractor, or you find you're allergic to bee stings and need an EpiPen. It all just keeps adding up.

And later you may want to invest in swarm traps, a nuc box, sieves, honey gate, jars, lids, labels. Don't forget the pollen supplement or robbing screens, insulation or hive wraps, and mouse guards. You may also need to invest in mite treatments, an oxalic acid vaporizer, and the safety equipment that accompanies it. You think it might be nice to have temperature, humidity, and weight sensors for your hive, so you can remotely monitor your "investment". Finally, maybe an infrared camera would be a great idea.

On the other hand, you'll never lack for things to put on your wish list for birthdays and holidays 😊

### **Spring build-up is the easiest part of beekeeping**

Spring, the early season, is when beginners begin. After a couple of months of massive population growth and furious foraging, complacency sets in. Beekeeping is easy, or so it seems. But the new

beekeeper hasn't yet faced winter – a “horse of a different color” as they say. Your mettle as a beekeeper isn't tested by spring but by winter.

### **It's more work than you imagined**

You need to use tools, you need to lift, you need to actually do things inside the hive. You cannot set up a hive and forget it.

Then too, there are things that must get done and must be done on time. You cannot be late with feeding, late with splitting, or late with mite treatments. You can't be late putting on your honey supers or taking them off. Late is too late. Once you become a beekeeper, you work on the bee's schedule, not yours.

### **Expectations of honey production are not realistic**

Before your first bees arrive, you promise honey to your mother, your spouse, your kids, your boss, your neighbors, your partner or friends. Maybe you even rent a stall at the county fair or farmers market so you can sell honey and candles and “save the bees” posters. But when the time comes, not only are your honey supers empty, but you need to feed your bees just to keep them alive. How do you explain this everyone who's waiting?

### **Bee stings are no fun**

Many beginners actually believe they won't get stung. No beekeeper ever has avoided a sting. And you never get stung when you're expecting it, but when you're taking off your bee suit, putting equipment away, watering the lawn, or just minding your own business.

### **Pressure from Unhappy neighbors**

You may think honeybees are the coolest thing ever, but there are many who don't agree. Panicky neighbors who fear for their children (it's always the children and never themselves) can raise all kinds of trouble. They may even have their lawyers draft blizzards of paperwork. You may have remembered to check your local ordinances, but did you review any neighborhood policies?

### **It's easy to underestimate the varroa problem**

You can't fix it and forget it. One of the most disheartening aspects of beekeeping is the realization that varroa mites take up most of your management time. Regardless of how you decide to test and treat, they are a major part of beekeeping now.

### **Beekeeping is about the environment**

Many of the problems bees face are outside the hive and not within the beekeeper's control. Environmental issues like weather, bloom times, pesticide use by others, pollutants, land use, predators, and even other beekeepers in the area can all influence your success. So even if you student and make good decisions, outside influences can wreak havoc on your colonies.

## **Thinking of times gone by**

It is surprising the 20% of beekeepers who do make it past their first 2 years. They are the ones, typically, who are quiet and listen more than talk, and absorb everything people have to say and the journals offer to read.

It is easy to question the time, the expense, the heavy lifting and down-right hard work and frustration of beekeeping. Is there something else to be doing with your life? It can be downright frustrating sometime to be a beekeeper.

## **If I get so frustrated, why do I do it?**

On the other side of beekeeping, the part that keeps beekeepers energized from year to year, is the overwhelming assault on your senses when you open a hive; the smells of honey – wax – and pollen, the vibrations of the buzzing bees, the flurry of bee activity – all with unique purpose. It is mesmerizing, and as a beekeeper you have a glimpse into this fascinating world of the honeybee.

How about the taste of honey straight from the hive...still warm and clouded with pollen particles? Or the sound of a healthy hive. The hum that only a beekeeper knows. There are not many other hobbies that are so overwhelming to the senses. The stickiness of the honey, the tackiness of the propolis, the silken texture of beeswax, the slippery feel of royal jelly. The muscle-tearing weight of a full brood box. The burning heat of a sting. Only beekeepers know that sensation.

## **Overwhelmed by wonder**

So, at the end of the day, many beekeepers are enraptured by the sheer wonder of honeybees. Their cooperation and coordination. An open hive's window into an alien world that fascinates, surprises, and fills a beekeeper's heart and mind with wonder. So the question is will you push through the darker beekeeping days to reach the warm glow of a truly magnificent hobby?

# **Bee Keeping Online Resources**

•American Bee Journal - Beekeeping Resources, Research and Articles - <https://americanbeejournal.com/>

•American Beekeeping Federation - Membership Organization with great resources and educational opportunities - <https://abfnet.org/resources-for-beekeepers/>

•Auburn University Extension - Agriculture and Beekeeping related webinars and resources - <https://www.facebook.com/LawrenceCountyextension/>

•At Home Beekeepers Series - Auburn University Extension Service - <https://www.aces.edu/blog/topics/bees-pollinators/at-home-beekeeping-series/>

•Bee Conservancy - Resources for beekeepers & supporting Pollinators - <https://thebeeconservancy.org/10-ways-to-save-the-bees/>

•BeeCounted website accesses all the broodminder data (you don't need the sensors) rolling in so you can see nectar flow in your geography <https://beecounted.org/map>

•BetterBee Beekeeping supply vendor with some nice "how to videos and resources- <https://www.betterbee.com/instructions-and-resources/home.asp>

•Bee Informed Partnership Beekeeping Blog - <https://beeinformed.org/blog>

•Cornell University Beekeeping Courses and Resources - <https://ecornell.cornell.edu/certificates/beekeeping/>

•Dadant Beekeeping supply vendor with some nice "how to videos and resources- <https://www.dadant.com/learn/>  
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•Eastern Apicultural Society -

Membership organization for beekeepers in the Eastern United States - resources, education, conferences and research for beekeepers - <https://easternapiculture.org/>

•Harbo Bee Company - A supplier of VSH Queens, this link is to their handbook on how to test queens for VSH traits - [Click Here](#)

•Honeybee Health Coalition - resources and education for beekeepers - <https://honeybeehealthcoalition.org/focus-on-forage/>

•Honeybee Net - a great resource presented by NASA at the Goddard Space Flight Center website - <https://honeybeenet.gsfc.nasa.gov/Honeybees.htm>

•Honey Bee Suite - a neat online resources of articles, blog posts and - <https://www.honeybeesuite.com/>

•Mann Lake Blog news, information, and beekeeping techniques - many product related - <https://www.mannlakeltd.com/blog/>

•Massachusetts Apiary Program, hive inspections, information, support - <https://www.mass.gov/apiary-program-honey-bees>

•Massachusetts Beekeepers Association - Resources and Programming for MA Beekeepers - NCBA is part of the state organization - <https://www.massbee.org/>

•Norfolk County Beekeepers Association - <https://www.norfolkbees.org/>

•North Carolina State University Apiculture Program - Resources, Educational Opportunities and Data to inform your beekeeping <https://www.ncsuapiculture.net/>

•North Carolina State University Apiary Lab Beekeeping resources, videos, and more- <https://www.ncsuapiculture.net/>

•Northeastern Integrated Pest Management Center - Hosts monthly Zoom workshops on a variety of topics on pest management in beekeeping - <https://www.northeastipm.org/ipm-in-action/the-ipm-toolbox/bee-breeding-and-ipm-for-better-pollinator-health/>

•PennState Extension - Beekeeper and Pollinator Resources - <https://extension.psu.edu/insects-pests-and-diseases/pollinators/beekeeping>

•Planet Bee.org - Resources about pollinators, pollen providers, and bee friendly plantings - <https://beescape.psu.edu>

•Pollinator.org is a resource for ecoregional planting guides for pollinators - <https://www.pollinator.org/guides>

•Randy Oliver's Scientific Beekeeping website - research, resources, and data to inform better beekeeping - <https://scientificbeekeeping.com/>

•University of Massachusetts Bee Lab - Pollinator Resources - <https://ag.umass.edu/resources/pollinators>

•University of Minnesota Bee Lab - featuring the work of Marla Spivak and others - data and research to inform your beekeeping - <https://beelab.umn.edu/>

•USDA Bee Disease Diagnosis 60+ page PDF - <https://www.ars.usda.gov/is/np/honeybeediseases/honeybeediseases.pdf>

•USDA Bee Disease Diagnosis Service - <https://www.ars.usda.gov/northeast-area/beltsville-md-barc/beltsville-agricultural-research-center/bee-research-laboratory/docs/bee-disease-diagnosis-service/>

•USDA National Agricultural Library Apiculture and Beekeeping resources - <https://www.nal.usda.gov/animal-health-and-welfare/beekeeping>

•Washington State University Honeybee and Pollinator Program - Resources and new research for beekeepers - <https://bees.wsu.edu/>