**Advanced Beekeeping:**

I’m Brenda Renfroe. I’ve been a beekeeper for over 7 years.  I started backyard beekeeping because I love to garden, and for years I never saw a honeybee in my yard. I did some research and started by reading **Beekeeping for Dummies**, by Howland Blackiston.  I purchased my first package of bees from **Bee Commerce** in Newtown, owned by Leslie Huston. Leslie is a master beekeeper and has been beekeeping for over 20 years.  I worked at her shop for 4 years during the busiest beekeeping time and gained incredible insights into beekeeping.   When Howland updated his book 2 years ago to the 5th edition, I was part of his research team.

I am also a participant in the **Penn State University EPIQ program**. The goal of the program is to foster beekeepers to rear strong queens and bees that can thrive in the environment of the Northeast, mostly through instrumental insemination. The program leaders are Penn State Extension Educator Dr. Robyn Underwood, and Center for Pollinator Research Apiarist Kate Anton.

I mentor new beekeepers in the area, but joining a local Beekeeping club usually puts you in contact with Mentors in your area. These clubs also offer Bee schools where you can learn beekeeping at different levels. Membership is usually inexpensive.

**Splits**: Bees overwinter and in the Spring: April – May

When to split: when you see drones or what are called purple eye drones (pupae). I like to see drones in the hive before I split them. When I see lots of brace comb, I believe the hive is working on swarming.

* Walk away split – split the colony and create a new colony, letting them make their own queen. Try to move the original queen to a new hive with open brood and lots of bees to a new hive. Foragers will return to the original hive and that hive may be the strongest.
* New Queen split - Split them and in the new colony, add a local queen that has been mated. That may be later in the season, depending on when queens are available in the northeast. Some shops will get queens from Georgia or California and have them ready to sell.

In the hive without the queen, the bees will recognize their queen is missing and within a day, start to make new queens. These are chosen from 1-3 day old larvae, so when you split, be sure to leave eggs behind. It takes about 4 weeks for a colony to make a new queen, takes her mating flight and starts laying. This creates a break in the brood cycle and helps reduce mite load.

**Swarms:**

Chances are if you do not split your colony, they will swarm. It occurs all the time in nature but if they swarm, they may take up residence in your neighbor’s houses. It is better to keep the bees if you can.

A swarm happens when the colony is expanding in the spring with a good nectar flow. They decide they are crowded, urge the queen skinny down and take her and half the colony and fly off to find a new location. It is an amazing site.

\*\* If you inspect your colony and there are CAPPED queen cells there, most likely they have already swarmed unless you can find the queen. DO NOT cut out queen cells unless you find a queen. There will not be any larvae available to make another queen.

Cast swarms happen when your colony made more than 1 queen cell, which is typical. When the queens emerge, sometimes the extra virgin queens will swarm taking part of the colony with them. I have had 2 virgin swarms from one colony.

**Mites:** Most commonly known - Varroa Destructor and there is a new one: Tropilaelaps (tro pee lee laps)

They feed on the bee’s fat body cells, weakening bees to the point where they contract viruses like Deformed Wing Virus, Sacbrood, Paralysis Virus. There is something like 22 + viruses bees can contract.

There are no cures for the viruses so beekeepers are encouraged to use methods to reduce mite infestation and bolster health within the colony.

Good articles to read:

<https://extension.psu.edu/viruses-in-honey-bees>

<https://extension.psu.edu/methods-to-control-varroa-mites-an-integrated-pest-management-approach>

**Types of treatments:**

Formic Pro

Hopguard

Apiquard

Apilifevar

Oxalic acid or vaporizer

Plus others

You should choose what you think is right for your bees. Do lots of research. Some treatments can be used when you have honey supers on and some you cannot.

So, I only treat once a year in mid September. I am not saying I am **right,** but I believe that overtreating may cause the mites become resistant to the treatments.

There are beekeepers who raise mite resistance queens – i.e. Russian hybrids. VSH queens. Instrumentally inseminated queens bred to be mite resistant.

https://www.stevensbeeco.com/single-post/2018/05/30/to-treat-or-not-to-treat-that-is-the-question

**Nutrition:** There are several times a year bees could use some help:

**Springtime**: some beekeepers feed their bees **sugar syrup**. I don’t because there is a strong nectar flow going on. If you feed them sugar syrup, they will pack it away and when you pull your honey, it may have honey made from sugar syrup in it.

**Pollen substitute** is a good idea to simulate the queen to lay, you can add that as early as the end of March.

**Early Summer**: I like to give them **ProDFM**  (Bees' immune system deteriorate due to constant exposure to pesticides, fungicides, herbicides, and antibiotics. **ProDFM** restores healthy bacteria, revitalizing their immunity.) I might try a liquid form of **Hive Alive** this year.

**July**: is a good time to check your mite count. There are several methods, most commonly – a powdered sugar roll or an alcohol wash. There is a CO2 method. Most beekeepers will treat for mites if the mite level is high. (3 mites per 300 bees)

https://beeinformed.org/2018/09/26/the-signs-of-mite-damage-how-to-identify-progressed-varroosis/

**End of Summer**: In my area (Danbury) August is not a great month for bees to find a lot of nectar and I typically feed them sugar syrup. Last Summer I had 22 colonies and I put almost 200 gallons of sugar syrup in those hives. You keep feeding them as long as they take it and until it gets below 40 degrees.

**September:**

This time of year, the colony is making winter bees and food is important. You can supplement with winter feed – (i.e.winter patties) carbs and protein. Don’t feed pollen.

I tried a new product called **Hive Alive** fondant (amino acids and protein) I was surprised to find 21 of my colonies alive in January. Usually I have losses before that. I only lost 1 hive because I did not feed them this product.

I treat for mites mid September. I use formic Pro but I might look for other alternatives this year.

**Oct – Feb:**

You can dry feed them Fondant or just plain sugar but it is not that great. Or if you left 60 pounds of Honey in the hive before Winter, they should be happy!

**Over Wintering**:

It is a crap shoot. There are so many variables to the success of over wintering bees. Nutrition, mite count and viruses, size of the colony, weather. A colony can starve even if food is just a few inches away.

**Queen rearing**: 3 methods: no-graft systems, grafting systems, and instrumental insemination.

Queen rearing requires special equipment and some skill and practice. In **grafting**, you introduce 2 – 3 day old larvae in special cups into the hive and they make each of those cups into a queen cell. Not all cells will be accepted. There are a couple of systems out there JZ BZ makes a line of queen rearing products which are used by queen rearers.

A **grafting system** like the NICOT system is where you isolate the queen in a box that allows her to lay eyes in the cells you provide. There are lots of Youtube videos on this process.

**Instrumental insemination** is a method of injecting the queen with drone semen which was collected from strong selected drones. The queen will not take a mating flight and will start laying with a week or so.

**Honey**:

Honey is harvested when there is surplus in your colonies. It is better to take it than let the colony get honey bound forcing them to swarm. Extract the honey and put the frames back in the hive for them to clean and refill.

It is not always the same time in early summer but typically end of June. If there is a strong nectar flow in the fall, you can expect some at the end of Sept.

I have gotten as much as 200 pounds in a summer. I save the cappings from the honey harvest and render the wax to make candles, lip balm and furniture polish.

\*\* So I have learned that more colonies do not produce more honey. There is not an infinite amount of nectar within a 2 mile range. I think by having too many colonies, the area is too saturated with bees for them to produce surplus honey. When I had fewer colonies, I got more honey.

Too many bees: <https://www.nytimes.com/2023/08/19/business/beekeeping-companies-colony-collapse.html>

**Problems:**

Laying workers: this occurs when the hive is queenless for longer than a few weeks and they can’t make a new queen. Workers start laying eggs. You can tell by multiple eggs in cells and in a random pattern. If you see all drone brood (popped up capped cells, the brood is all drones). To correct it, add frames of open brood from other hives every week until they make a new queen or add a queen, but be sure to keep her caged for longer than a few days or they will kill her. There are probably other things to do, some research is required.

**Illnesses:**  viruses caused by mite overload. It is best to ask for help in this situation. If you register your bees with the State of CT CAES department, an inspector is available for this reason. https://portal.ct.gov/caes

Questions: you can contact Ashley for equipment needs. Other questions you can email me at [Brhbuzz@gmail.com](mailto:Brhbuzz@gmail.com) or visit my website: briarridgehoney.com