

Introduction to Beekeeping



SIX CLASSROOM SESSIONS & THREE FIELD SESSIONS

What you need to know to keep bees successfully!

This class is presented by



MAINE BEE WELLNESS

Buzzing with the bees in Maine



Tonight's Instructor

We've laid some groundwork for keeping bees – now what you do once you have bees.



Are you going to be a **Bee Haver** or a **Bee Keeper**?



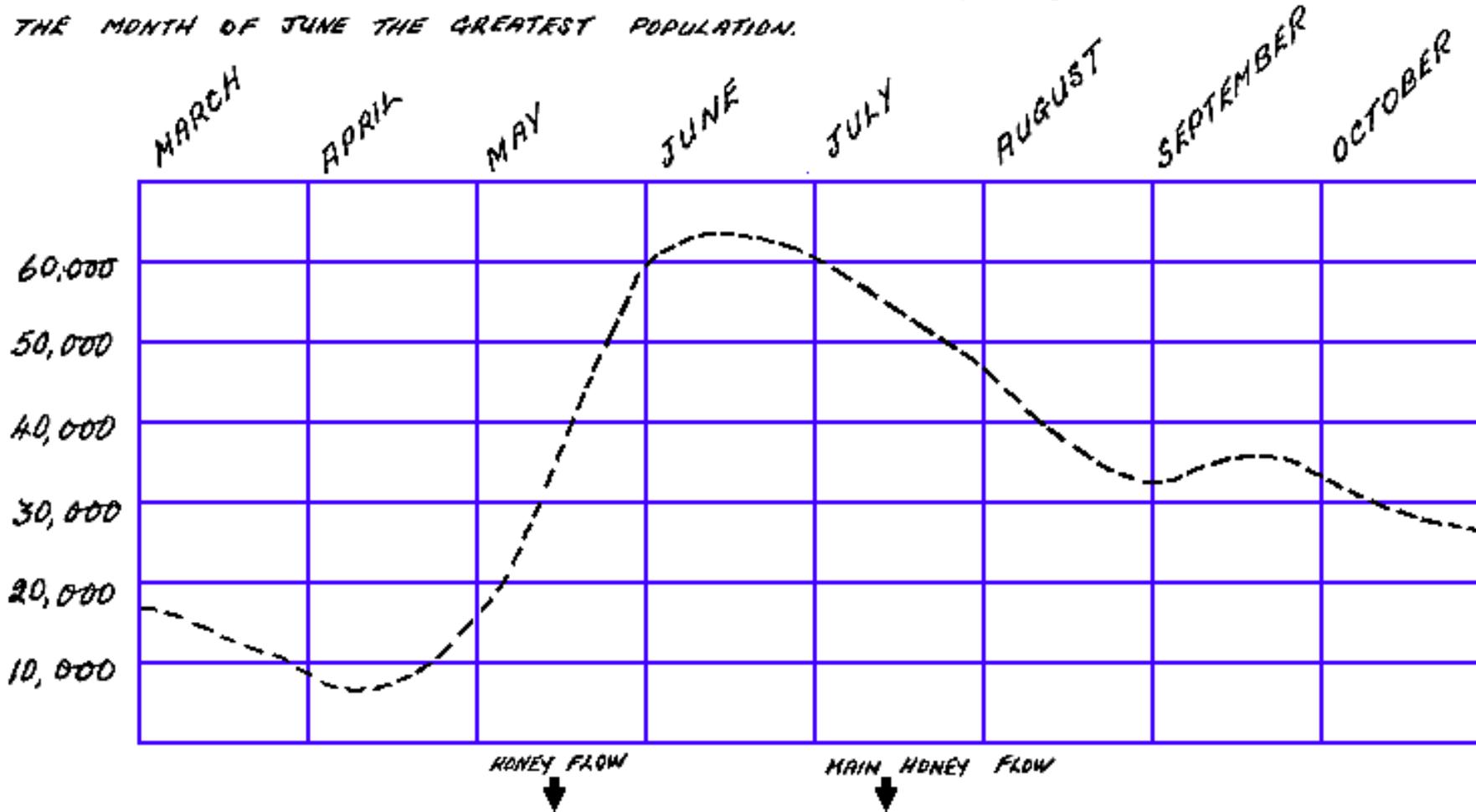
You've got your bees in your hive,
now what?

- Inspections
- Varroa Mites
- Reading Frames
- Installing New Queens

You have bees – congratulations!

PEAK OF POPULATION AT RIGHT TIME

THE CURVED LINE SHOWS THE VARIATION IN COLONY POPULATION THROUGH THE BREEDING SEASON. FIGURES AT LEFT INDICATE APPROXIMATE NUMBER OF BEES THE MONTH OF JUNE THE GREATEST POPULATION.



Your goal: *Have your bees thrive during the coming winter*

Your bees' goal: *pass on colony genetics*

You've seen this graphic before. It can help to remember that the bees are cycling too.

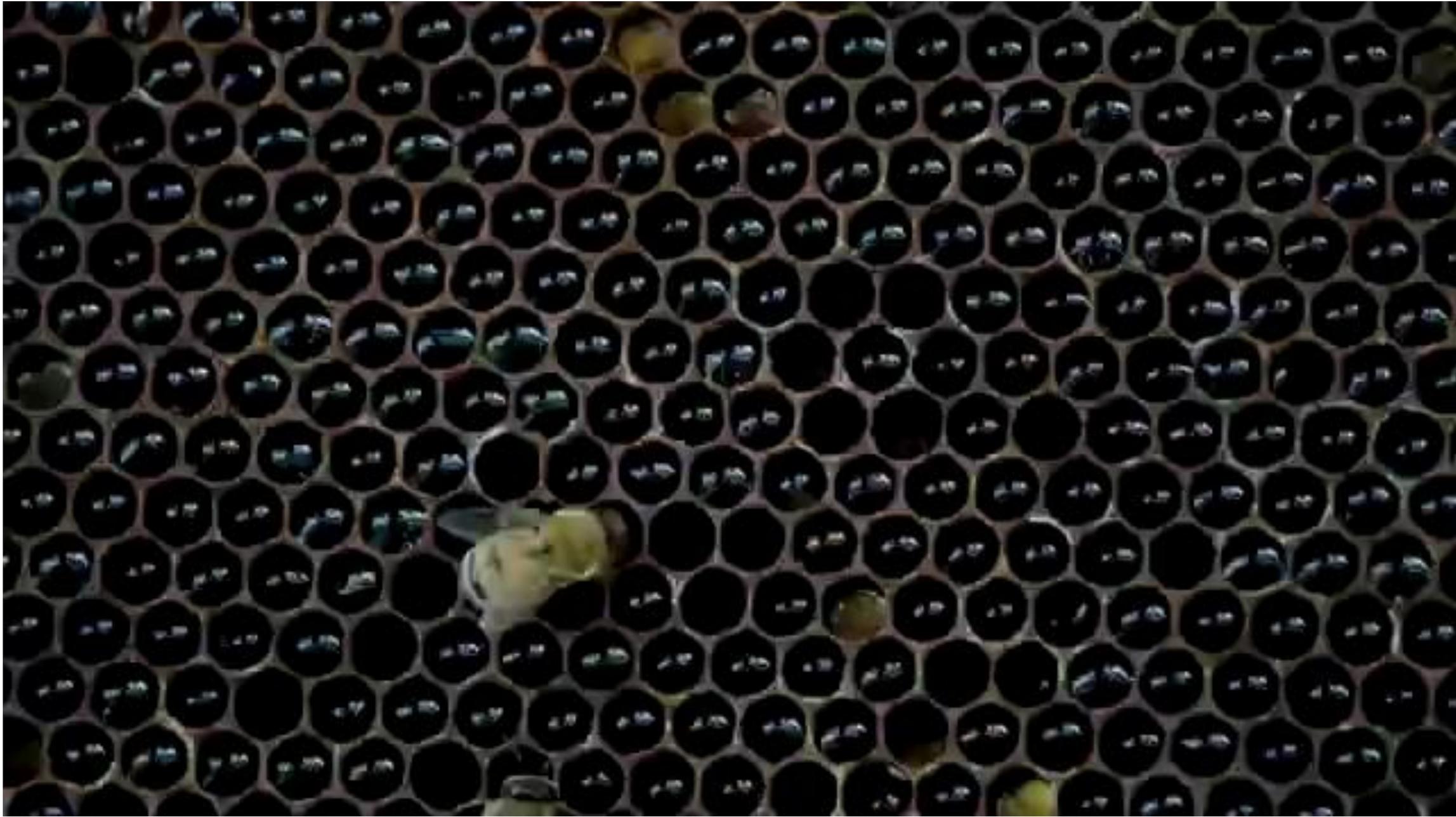
Inspections

We'll see a video about inspections from the University of Guelph in a moment



- Have a purpose
- Always check food reserves
- Always check colony health
- Always check for brood in all stages

- Blow a little smoke in the entrance and under the cover
- Turn the cover upside down when you take it off
- Remove a frame from the box you are examining to give yourself some room



Queens and Quiet Boxes

In the video, Paul leaned the frame with the queen on it against the front of the hive. His objective is to stash the queen out of the way so that he can continue his inspection without worrying about inadvertently injuring the queen. Another method is to set the queen, still on her frame into what is known as a quiet box.



You don't need to find the queen every time you do an inspection. Instead look for signs that she is there. Remember Bee Math.

If you do happen to see her, make sure she stays safe!

International Queen Marking Colors

find the queen easier – know how old she is

Color	White	Yellow	Red	Green	Blue
Year Ends In	1 or 6	2 or 7	3 or 8	4 or 9	5 or 0

Will You Rear Good Bees?
Wow, You've Really Got Bees!
Will Yellow Roses Grow Best?

The Queen Color for 2019 is
GREEN

"Uh, Houston, we've had a problem."

Actually, we've still got problems, we just learned how to better roll with the punches.

The most significant of them is a parasitic mite, Varroa destructor



The picture to the left makes the Varroa mite look big – they're not – and by the time you see them, your colony is most probably past the point of saving.

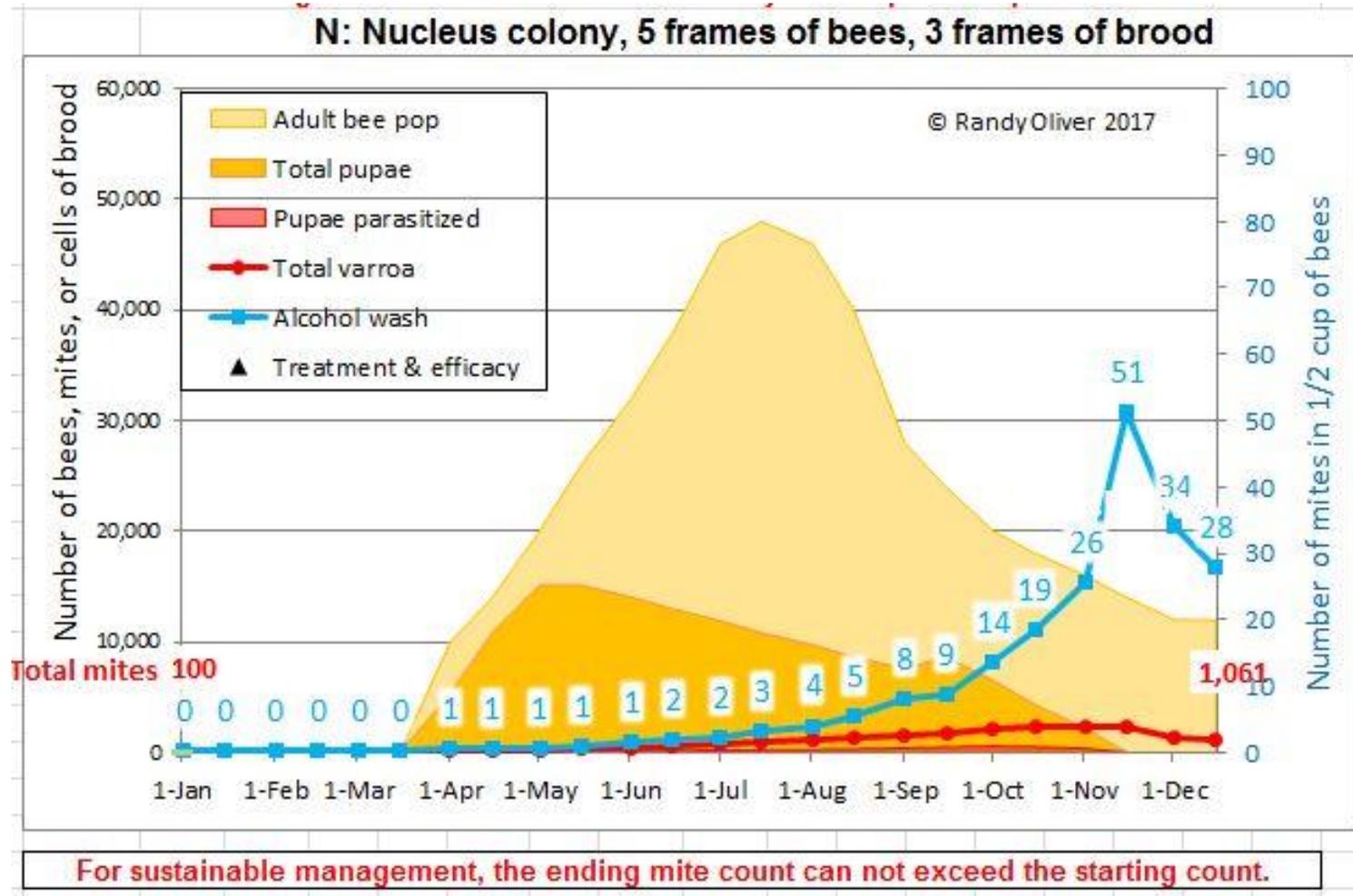
Varroa develop along with bee larvae inside capped brood, where the Varroa munches on the bee pupa.

Aside from weakening the developing bee, Varroa inoculates the bee with viruses, further sickening the bee.

A good primer on Varroa by Dr. Jamie Ellis is on YouTube at <https://youtu.be/S5vVrAy6CEU>. Dr. Ellis will be the featured speaker at the MSBA's Annual Meeting later this year.

Varroa is an all year long problem

For most of the year, bee population stays ahead of Varroa. But then fall comes.



Introduction to the bee parasitic mite *Varroa destructor*



Bee Biosecurity Video Series

Our last words about Varroa, for tonight.

Varroa is a parasite out of balance with their host!

Left unchecked, Varroa and Varroa associated viruses, kill most colonies within a year or two.

Dealing with Varroa is work – not fun – something beekeepers do in order to continue keeping bees. We'll talk about strategies and tactics for beekeeping in the age of Varroa next week.



So back to inspections

Before you remove the top with the intention of removing and examining frames, keep a few things in mind:

- Bees start to cluster at 57F° Hold off on invasive inspections until it is 60° or warmer.
- In the early afternoon on a warm sunny day, you can expect the foragers to be out.
 - As a hobbyist, you have the option of putting the top back on.
- Inspections are a way for you to determine what is going on in the colony.



- Have **at least a veil on** and your smoker going.



Every Inspection, No matter the season

You'll be checking:

- That the queen is there and doing her job!
- That there is adequate room for the Queen to lay.



- That there are gradually increasing stores in preparation for winter.
- That the hive looks healthy.



You may want to look for additional things seasonally:



- Are the bees making swarm cells?
- Where is the cluster located?
- Are more boxes needed?

These are in addition to questions you will have like has that new queen been released?



You're learning to read the hive
and the frames.



Reading Frames

What does it mean?

- NO eggs or uncapped larvae
- Peanut shaped object in middle of a patch of brood

The bees are in the process of creating an emergency, replacement queen. What happened to the old queen is unknown.

The bees have taken what was to be a worker larvae and fed it the special Royal Jelly that will cause it to turn into a queen.

Once born, the new queen need to go on a mating flight before she starts laying.



Reading Frames

What does it mean?



Eggs and uncapped larvae may or may not be seen.

This is a cup that the bees can use to make themselves a new queen.

The beekeeper needs to inspect the cup closely to see if there is Royal Jelly and a larvae inside. Some types of bees keep lots of queen cups around just in case – most of the time the cells are torn down unused.

This type of cell is used when the bees determine there is something wrong with the current queen, and that she needs to be replaced.

Reading Frames/Reading Hives

What does it mean?



In this case you didn't need to open the hive to see something was going on – in this case the bees had removed “chalkbrood mummies” from cells and the mummies have been removed from the hive.

Chalkbrood is a spore forming fungal disease that occurs primarily when the bees are already stressed. It is spread when brood food fed to developing larvae is contaminated with spores.

While chalkbrood rarely kills a colony, there are no known medicines for it. Moving the colony to a drier location sometimes helps.

Reading Frames

What does it mean?

Here we have a colony making preparations to swarm. The queen has laid eggs in what will become swarm cells. The one on the left has been capped over. The bees can leave behind a dozen or more so called “swarm cells.” These cells are often on the bottom bar, and unlike the supercedure cells, don’t have a bend.

In a swarm roughly half the bees and the current queen leave the hive to find/make another nest. In the wild, swarms survive the coming winter roughly 28% of the time.

The bees the were left behind are left with a queen that still needs to mate and about half the population. Bees that swarm very often do not produce much if any surplus honey.



Replacing your Queen

Replacing the queen can solve a host of ills. This is for those who aren't content to let nature run its course.

All queens and queen cells must be eliminated from your hive or your fancy new queen **will** be killed.

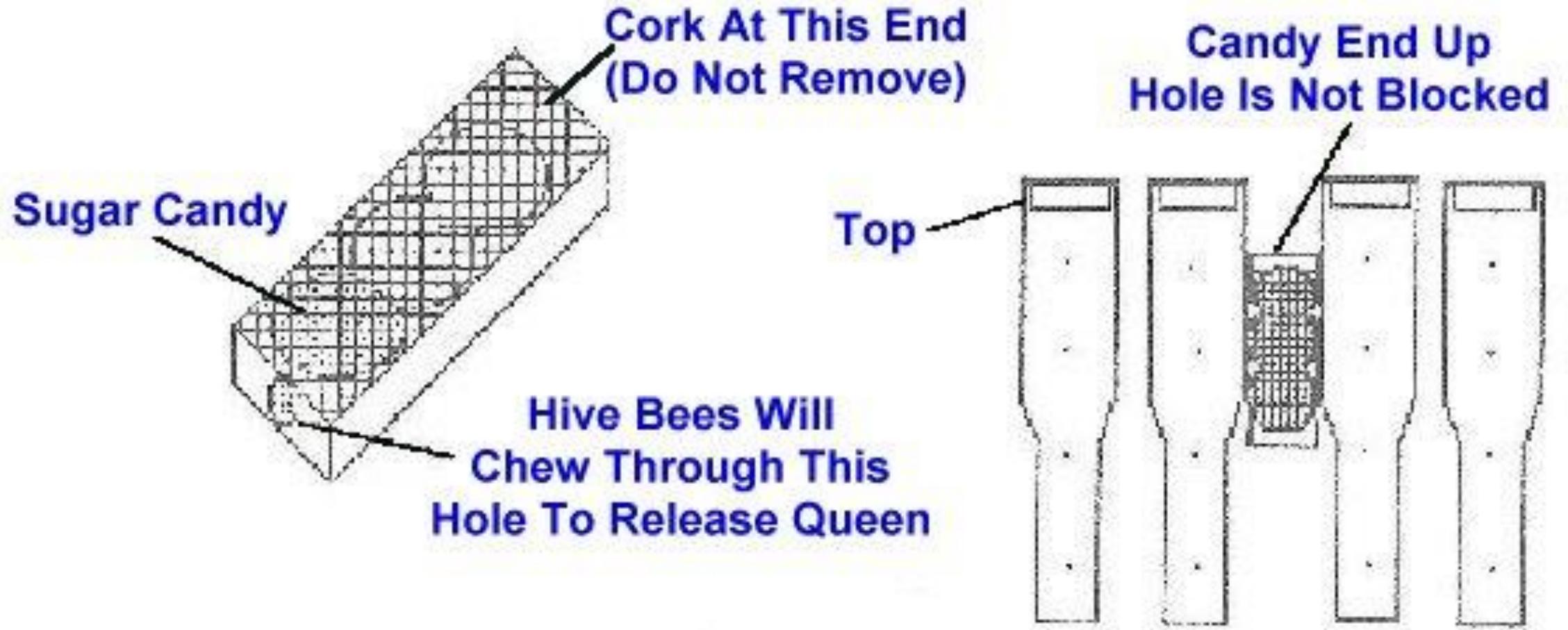


Do your Bee Math
The queen will be the mother of all workers in the hive within 50 days of being installed

Many beekeepers prefer queens that are raised locally. Keep in mind that the purchase of mated queens depends on warm good flying weather. Local mated queens may not be available before June. The queen rearing season often end in early August.

When a queen is purchased, the beekeeper is exercising control over the genetics of the colony. Are you after gentleness, hygienic behavior, ability to fight off Varroa?

Queen Cage Installation



Installing queens sounds easy

Unfortunately, not all new queens are accepted. There are a variety of strategies to improve the odds.

A new queen should be successfully installed about 80% of the time.

There are 3 queen cages in common use today.



The traditional Benton or 3 Hole Cage



JZ-BZ Cage



California-Mini Cage

Raising Queens

It is beyond the scope of this course to go into queen rearing in detail.

Most generally, the task is to trick the bees into doing the work. Young larvae are placed in special cells and hives where the bees feed them lots of Queen Jelly and draw out the cells. Once hatched out, virgin queens are placed in special mating nucs so they can go on traditional mating flights OR they are artificially inseminated. Once they are mated and have started laying worker brood, they are harvested and placed in a queen cage – sometimes with attendant bees, sometimes not.



- Queen Bees can be shipped for Express Delivery – usually by the Post Office and UPS.
- They can be shipped from anywhere in the US – or with an expensive veterinary health certificate, from Canada.
- Shipping may not be good for the new queen – both too hot and too cold are bad for bees.
- Pickup at your local dealer or breeder where you can see what you are buying is good!

Questions?

*Reading frames is detective work,
though with practice it becomes 2nd
nature.*

*Your homework is to read chapter 8
“Taking the Crop” in your text.*

*The first part of the next class will be
on overwintering hives – the second
will be on harvesting.*

