



Beginner Beekeeping Class #5

Winter Prep through the Coming Spring



October

- There is not much to learn from hive inspections in October
 - Hives are often broodless – we learn from inspecting brood frames
- Assess the hives winter stores – heft the hive to feel it full
- Finish feeding syrup by the second week of October
- Monitor your Varroa mite count
 - Because hives are broodless it's a good time to apply HopGuard or Oxalic Acid vapor

What's your Varroa mite count?

Monitor your mites all year long

- Economic Thresholds:
- Alcohol shake – 7 mites per 300
 - at 9 you will begin to see symptoms
 - Recommended by the Maine State Apiarist
- Sugar shake – 4 mites per 300 (1/2 cup)



Oxalic Acid

(Savogran® Wood Bleach is 100% Oxalic Acid)

- Great treatment for October
 - also around the winter solstice
- Apply any time the temperature is at least a few degrees above freezing.

- Use 1 gram per deep hive body
- Energize with a 12V auto or marine battery

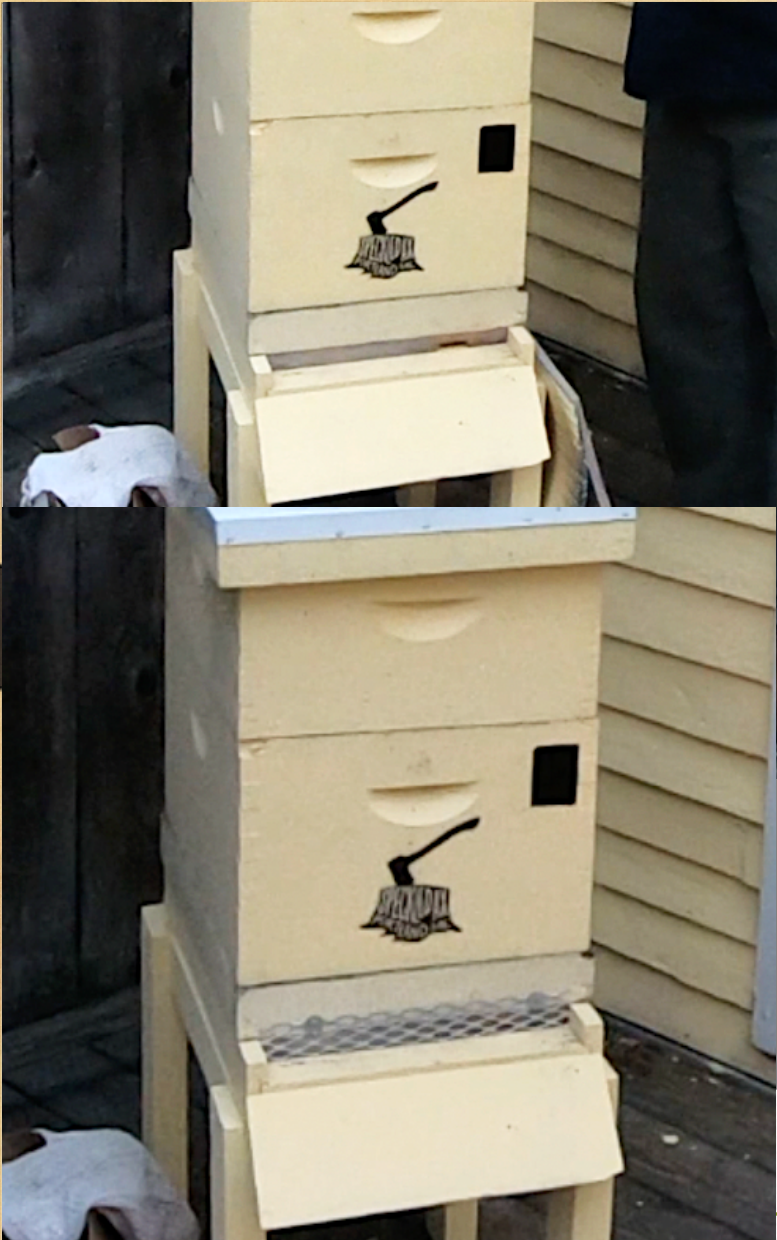


See: [Winterizing a beehive](#)

November

Winterizing your hives





Reduce entrances & add a mouse guard

- ✓ Do this on a mild, sunny day to be sure there isn't a mouse inside already

Add an absorbent cover to the top we like homasote

- Your inner cover dado should be facing up
- This helps the hive ventilate and provides an additional upper bee entrance.

➤ Be sure your telescoping cover is pulled fully forward so that upper entrance is functional.



Wrap hives with insulation

- ✓ 1 1/2" rigid insulation
- ✓ Score with utility knife and snap
- ✓ Duct tape is a beekeeper's best friend



[Bee Cozy](#)

- Strap the hive to the stand



December

Making Candy



- Refined white sugar and water are all you need
- Use 4 lbs. sugar and $\frac{1}{2}$ cup water
 - (1# sugar : 1 oz. water)





Making Candy (continued)

Mix till it is the consistency of wet sand

Making Candy (continued)

- Tape over the inner cover hole
- *Wet the wood with a sprayer or damp sponge*
 - If you don't, it won't stick when you turn it over
- Tamp or roll sugar into cover, being careful to keep it at or below the level of the rim
- Let dry overnight



(I now use masking tape.)



Candy Boards

- Use to feed hives in the freezing weather
- In place of inner cover
 - sugar also acts as an absorbent material
- Bees will reach candy after eating through their honey supply
- Once they are feeding on candy, keep giving it to them
- ✓ Check every 3-4 weeks till nectar flow starts



January

Collect sumac bobs

- Excellent, free smoker fuel
- Purported to reduce varroa mites
- Staghorn sumac is a native plant that grows all over Maine
- It's one of the few red things you'll see in January

What can I do in the winter besides worry?



- Take a stick and clear out dead bees from the bottom board
- Slide in the inspection tray for a few days
 - Look for debris and you'll know the horizontal position and size of the cluster
 - Pale cappings are from honey, brown cappings mean bees are emerging from brood cells
- Look with an infrared camera or borescope
- Heft the hive

- Dead bees outside of the hive are a good sign in winter
 - They were taken out by live bees
- Bees take cleansing flights on days above $\sim 45^{\circ}\text{F}$
 - Bee poop should be yellow or amber
 - Significant dark brown or black poop can indicate dysentery





February

Empty combs should have 48 hours of freeze to kill wax moth larvae

[Do you need to order bees for spring?](#)



A common “Dead Out” - small cluster: starved and/or chilled



If you're sure
a hive is dead,
open it up and
perform an
autopsy:

- Does the hive seem wet? Is there excessive moisture on the inner cover and walls of the hive? Is there white or green fluffy mold in the hive?
- Is there a cluster of dead bees in the hive or are they all scattered throughout the hive? If there is a single cluster, how small is it?
- Is the dead cluster in a hive devoid of honey? Is the cluster separated from honey stores? Did the bees die with their heads in the cell, abdomens sticking out?
- Are there brown or yellow stains on the outside of the hive, around the hive opening, and/or inside the hive?
- Are there varroa on the bottom board or on brood removed from cells? Do you see white crystals stuck to the cell walls of empty comb?
- Do the dead bees look healthy or are they deformed with short abdomens and stubby wings? Are the bees hairless or greasy and black looking?
- Are the dead bees on the bottom board intact or are they ripped apart? Are there large sections of comb missing or damaged?
- Sunken cappings, black scale in bottom of comb, glue or fish odor – American Foulbrood -- HAVE AN EXPERT TAKE A LOOK AT YOUR HIVE

Monitoring your mite levels

- You can perform an alcohol wash on a sample of 300 (1/2 cup) dead bees
- The method and threshold numbers are the same as with a live sample
- The state apiarist estimates ~75% of the hives that die in Maine die from Varroa mites





March

Worry less – the bees have been coping with winter for millions of years

- Don't mess with your bees in the winter.
 - Disturbances cause them to break the cluster, consume more of their stores, and need to defecate.
- Avoid taking off the cover whenever possible and work quickly if necessary

- ✓ Wait until the silver maples bloom to unwrap hives
- ✓ Wait until a warm day after St. Patrick's Day (3/17) to inspect



March

- ✓ Get your water source ready before your bees discover the neighbor's pool

Round Dance:
For food or water within
80 meters of the hive





Waggle Dance

communicates food sources farther than 80 meters away, for up to 5 miles



- Returning foragers will waggle facing a direction in relation to the sun in the 12:00 position
- The duration of her dance tells the distance (~1,000 meters per second of dancing.)

First inspection of the year – time to cull bad frames



COMB ROTATION PROGRAM:

- **REMOVE TWO FRAMES FROM EACH BOX PER YEAR IN SPRING**
- **AT THE BEGINNING OF APRIL**
 - Combs older than 5 years
 - If you got a nuc, you're a part of somebody else's comb rotation
 - Anything damaged, too droney, or broken
 - Don't remove frames with brood – move them to the outside
- **AT THE DANDELION BLOOM**
 - Extra pollen or capped honey from last year
 - Store them in the freezer and use them to make nucs, or to feed a hive that needs it



Feeding hives in Spring: *Why* are we feeding?

- When to feed
 - Feed a new hive
 - Feed a weak hive
 - Feed a hive low on stores

 - Don't just feed because the calendar says feed
 - Don't just feed because everybody in the Google chat is feeding
 - *Decide whether your hive needs to be fed.*
- What to feed
 - 1:1 in spring
 - REFINED WHITE SUGAR

Recommended Reading List:

(these books are available at [the Honey Exchange](#))

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- [The Beekeeper's Handbook, Diane Sammataro and Alphonse Avitabile](#)
 - This should be on every beekeeper's bookshelf; it's an outstanding resource
 - [Bee-sentials and Increase Essentials by Dr. Lawrence Connor](#)
 - [The Hive and Honey Bee Revisited, Roger Hoopingarner](#)
 - From the original master text by Reverend Langstroth, thorough and encompassing
 - [Bee Culture Magazine, Kim Flottum ed.](#)
 - Keep learning throughout the year – it arrives every month
 - [Natural Beekeeping, Ross Conrad](#)
 - An excellent text for working toward chemical-free beekeeping
 - [The Buzz About Bees, Jürgen Tautz](#)
 - Filled with amazing photos and the up-to-date research on the hive superorganism.
 - [Honeybee Democracy, Thomas Seeley](#)
 - Proof that a book can be both dull and fascinating. Learn about group decision making.
 - [Swarm Essentials, Stephen Repasky](#)
 - Learning about the whys and hows of swarming will teach a lot about the hive
 - [Honeybee Biology and Beekeeping, Dewey Caron](#)
 - If you really want to dig down into learning about the insects
 - [Following the Wild Bees, Tom Seeley](#)
 - Fascinating glimpse into the pastime of Bee-lining with lots of hive biology along the way
 - [The Dancing Bees, Tania Munz](#)
 - Story of Karl Von Frisch who decoded dance communication – fascinating bit of history
 - [The Secret Life of Bees](#)
 - Fiction, but it puts words to the passion and love of beekeeping, and it's a fantastic story

The End

- ✓ We'll see you at open hives this summer
- ✓ We'll see you next year for Sophomore Beekeeping