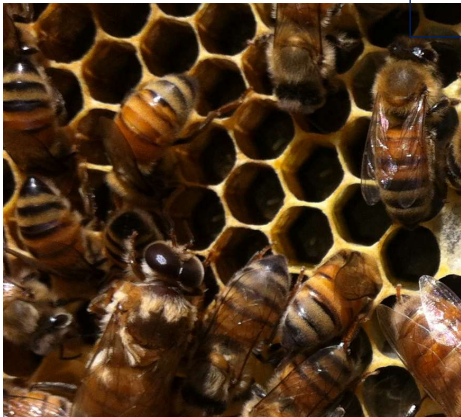


## Welcome from Trish the Beekeeper!

- Started in 2015 with a swarm
- Expanded over time to have ~30 hives
- Use 12.75" tall frames, single brood box
- Around 80% survival
- Honey Sales at Geauga Farmer's Market
- Chickabuzz.com



## Honey Bee Lifeway



Egg :  
day 0 to 3

Eggs = viable hive

Eggs = queen is present TODAY  
Obvious, but basis for beekeeping  
successfully.

1. Key to reading frames
2. Key to knowing what to do  
when.

Egg can become worker or Queen! (as can very tiny larvae)



Egg :  
day 0 to 3



Larvae / open brood:  
day 4 to 9



Capped:  
day 10-21

## 1. Honey Bee Lifeway

2. Inspections

3. Queen Problems

4. Varroa Mite

## From egg to functional

### • Worker life stages:

Egg	Open/ Larva	Capped/ Pupa	Cell Cleaner	in-hive duties	near-hive duties	
0-3d	4-9d	10-21d	0-7d	7-14d	14-21d	

#### Cell Cleaner:

Cleans cells after brood emerges  
Necessary to keep hive hygienic

#### In hive duties:

Feeding brood  
Drawing out new comb  
Receiving nectar & processing it

<p>1. Honey Bee Lifeway</p> <p>2. Inspections</p> <p>3. Queen Problems</p> <p>4. Varroa Mite</p>	<h2>From egg to functional</h2>																					
	<ul style="list-style-type: none"> <li>Worker life stages:</li> </ul> <table border="1"> <tr> <td style="background-color: #8B4513; color: white;">Egg</td> <td style="background-color: #8B4513; color: white;">Open/ Larva</td> <td style="background-color: #8B4513; color: white;">Capped/ Pupa</td> <td style="background-color: #FFD700;">Cell Cleaner</td> <td style="background-color: #FFD700;">in-hive duties</td> <td style="background-color: #FFD700;">near-hive duties</td> <td colspan="2" style="background-color: #4CAF50;"></td> </tr> <tr> <td style="background-color: #8B4513; color: white;">0-3d</td> <td style="background-color: #8B4513; color: white;">4-9d</td> <td style="background-color: #8B4513; color: white;">10-21d</td> <td style="background-color: #FFD700;">0-7d</td> <td style="background-color: #FFD700;">7-14d</td> <td style="background-color: #FFD700;">14-21d</td> <td colspan="2"></td> </tr> </table>							Egg	Open/ Larva	Capped/ Pupa	Cell Cleaner	in-hive duties	near-hive duties			0-3d	4-9d	10-21d	0-7d	7-14d	14-21d	
Egg	Open/ Larva	Capped/ Pupa	Cell Cleaner	in-hive duties	near-hive duties																	
0-3d	4-9d	10-21d	0-7d	7-14d	14-21d																	
							<p><b>Near hive duties:</b> Undertaker bees Guard bees</p> <p><b>Forager bees:</b> Fetch pollen Fetch nectar Fetch water Fetch propolis</p>															

Guard bees hang out at entrance, and front of hive.  
Foragers return or depart, are only briefly at entrance





To fetch water, tree sap-turned-propolis, pollen, or nectar, the foragers must have imprinted on their hive location in the landscape. They retrieve their items out of sight of the hive.



### 1. Honey Bee Lifeway

2. Inspections

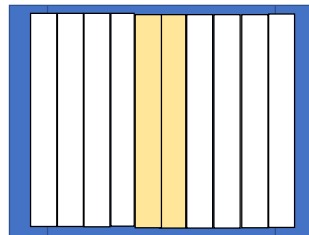
3. Queen Problems

4. Varroa Mite

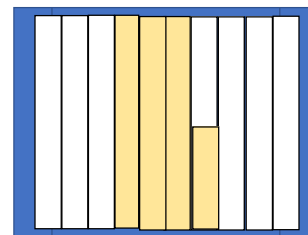
## The Queen: What do we expect?

Week 1

1000 eggs a day



2000 eggs a day





**1. Honey Bee Lifeway**

2. Inspections

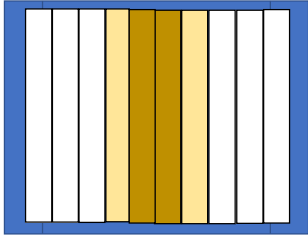
3. Queen Problems

4. Varroa Mite

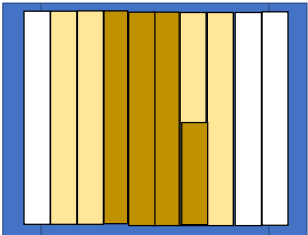
## The Queen: What do we expect?

Week 2

1000 eggs a day



2000 eggs a day



**1. Honey Bee Lifeway**

2. Inspections

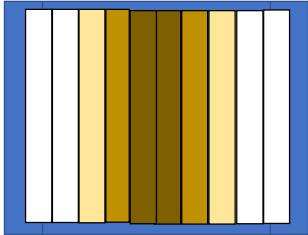
3. Queen Problems

4. Varroa Mite

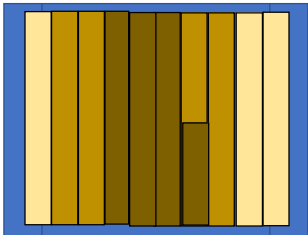
## The Queen: What do we expect?

Week 3

1000 eggs a day



2000 eggs a day



5

1. Honey Bee Lifeway

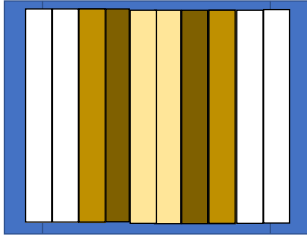
2. Inspections

3. Queen Problems

4. Varroa Mite

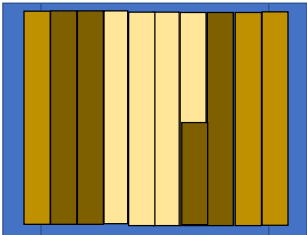
## The Queen: What do we expect?

1000 eggs a day



Week 4 –  
the first  
frames  
laid up  
are now  
open,  
since the  
brood  
emerged

2000 eggs a day



1. Honey Bee Lifeway

2. Inspections

3. Queen Problems

4. Varroa Mite



## The Queen: What do we expect?


She will be laying at max capacity if:

- There is comb to lay in
- There is a pollen flow
- There is a nectar flow
- She is well mated

Max capacity is at least 8 frames of capped brood.

Don't Forget: In 2 weeks, that's 16 more frames of bees!!!!

<p><b>1. How to Open Hive</b></p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p> 	<h2 style="text-align: center;">How to Open Hive</h2> <ol style="list-style-type: none"> <li>How to Open a Hive       <ul style="list-style-type: none"> <li>Though the lid, inner cover, boxes and frames can be tightly glued due to the bees' coating any cracks or openings with propolis... your options to pry these apart are limited.</li> <li>Do not bang.</li> <li>Do not scrape.</li> <li>Prying is fine.</li> <li>Slow movements.</li> </ul> </li> </ol> <div style="text-align: center;">  <p><b>No Bears Allowed</b></p> </div>
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<p><b>1. How to Open Hive</b></p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p> 	<h2 style="text-align: center;">How to Open Hive</h2> <ol style="list-style-type: none"> <li>How to Open a Hive       <ul style="list-style-type: none"> <li>Get Inspection Sheet out!</li> <li>Before you even lift the lid, get the inspection sheet out to remind yourself of the steps you'll take.</li> <li>It's also a good time to review what you saw the time before.</li> <li>If the hive is supposed to be drawing comb on empty frames, then you can gauge their progress better if you know what was drawn out last week.</li> <li>If you have a new queen who just started laying, then the outermost frame which HAS brood should be pushed outward.</li> <li>If you added a new box recently, knowing what things looked like the time before will help in assessing if their has been progress in getting comb made.</li> </ul> </li> </ol>
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## 1. How to Open Hive

2. Reading the Frames

3. Inspection Missions

4. Solving Problems



# How to Open Hive

1. How to Open a Hive
  - Lift lid, and place upside-down slightly behind hive. It will be the base for any boxes with bees you need to remove, and should not be next to the hive to avoid a “double vision” effect. Twin hives where once there were one will confuse the foragers and lead to bees hovering, which is unpleasant for all.
  - Smoke? If getting the lid resulted in any crushed bees, or any excessive scraping or banging.



1. Your view after popping off the lid.

## 1. How to Open Hive

2. Reading the Frames

3. Inspection Missions

4. Solving Problems



# How to Open Hive

1. How to Open a Hive
  - Lift lid, and place upside-down. Smoke?
  - Lift inner cover ¼" slowly but steadily (and quietly) until all but one corner are up.
  - Avoid having the inner cover come up and down, because bees will start to use the opening you create to exit the hive, and could get crushed.
  - Set the inner cover leaning against the side of the hive. Any bees on it will eventually crawl to the entrance and go back in.
  - Do not set the inner cover in a place that alters how the entrance looks.
  - Smoke?
  - And get ready to make a note....

1. A possible view after lifting the lid – maybe your first box, or your next one. Note typically the drawn comb will be in the center of the box. This one is weird for some reason.



1. Or you may see 7 frames covered with bees (left) or all 10!  
You'll want to make a note of this number...



1. How to Open Hive

2. Reading the  
Frames

3. Inspection  
Missions

4. Solving Problems

## Reading the Frames

2. How to Pull Frames – first one  
Pick easy side for first frame to pull.  
Loosen all points of contact. Smoke...  
Slowly and gently pull.  
Set on side leaning against side of hive.  
This is the only frame that will be set outside the hive.







Mudsongs.org

What you might see:  
Partially drawn or  
undrawn frames  
Wonky comb



BeverlyBees.com



Mudsongs.org

What you might see:  
Frame with honey!  
Frame with honey and  
small bit of capped







What you generally  
WON'T see on outer  
frame:  
Frame with fresh eggs

1. How to Open Hive

**2. Reading the  
Frames**


3. Inspection  
Missions



4. Solving Problems



## Reading the Frames

2. How to Pull Frames – the rest
  - Separate each point of contact with adjacent frame.
  - You can use a twisting movement at a point 2-3 inches from where frame is against sideways; it's easier sometimes than slicing between the propolis glueing frames together.
  - Pull the frame of interest slowly out of the box, check for eggs/larvae if needed, replace snuggled up against the opposite side of the box.
  - As you check the next frame, it also goes snuggled up against the opposite side the frame was pulled from.
  - Every time you snuggle frames together, you could crush bees. Go very slowly...this will give them time to move.
  - Remember, you're not going to need to pull EVERY frame... more on that later...
  - And take notes after every 2 frames you can see!

<p>1. How to Open Hive</p> <p><b>2. Reading the Frames</b></p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2 style="text-align: center;">Reading the Frames</h2>
	<p>What you might see on an inner-hive frame:</p> <ul style="list-style-type: none"> <li>Comb with capped brood, larvae</li> <li>Comb with capped brood, eggs</li> <li>Comb with eggs, larvae</li> </ul> <p>Nectar/pollen on top third of frames</p> <p>Nectar section next to egg section for new frames ONLY</p>

<p>1. How to Open Hive</p> <p><b>2. Reading the Frames</b></p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2 style="text-align: center;">Reading the Frames</h2>
	<p>Usually there will not be nectar in the center of the frames that are in the middle of the hive – but this is a newly drawn frame in the last few days. The bees often draw comb and fill with nectar, then move the nectar as more comb is drawn...</p> <div style="display: flex; align-items: center;">  </div>

Example of notes you might take when the outermost two frames are undrawn...

N	N	Nec H	Nec e	CWB lv						
---	---	----------	----------	-----------	--	--	--	--	--	--

MT – empty comb, DRAWN  
 N – new UNDRAWN  
 ½ - half drawn  
 H - honey  
 P - pollen  
 Nec - nectar  
 e – eggs (0-3)  
 Lv – larvae (4-9)  
 CWB – capped worker brood (10-21)

Worker Bees: eggs 0-3d, open brood 4-9d, **capped brood 10-21d**, foraging at 42d  
 Queen: QC open 0-8d, **QC capped 9-16d**, flying 20-23d, laying 23-28d

Feeding Bees –  
how and why

Your New Hive

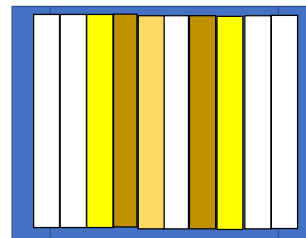
**Your Growing  
Hive**

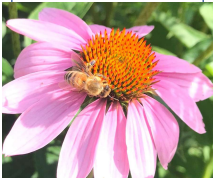
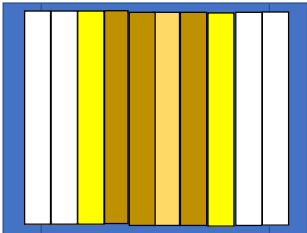



## Your Growing Hive

To illustrate what you would see on which frames in a typical hive...


- When installing the nuc, or after inspecting a package installation some weeks later, this is how the box will be configured... with an undrawn frame in the center of the box (because YOU put it there!)





<p>Feeding Bees – how and why</p> <p>Your New Hive</p> <p><b>Your Growing Hive</b></p>	<h2>Your Growing Hive</h2>
	<p>1 week later: That center frame might be half nectar and half eggs, but the nectar WILL NOT be fully processed to become honey!</p> 


<p>1. How to Open Hive</p> <p><b>2. Reading the Frames</b></p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2>Reading the Frames</h2>
	<p>What you wont see on an inner-hive frame:</p> <ul style="list-style-type: none"> <li>- Undrawn frame (unless they have no incentive to draw comb, no progress from the week before)</li> <li>- Honey frame (unless the queen is not laying, or you put it there the week before)</li> <li>- Only pollen or nectar (unless the queen is not laying, or you put it there the week before)</li> </ul> <p>Hive wants the following configuration:</p> <ul style="list-style-type: none"> <li>Outer frames are stores (pollen, honey)</li> <li>Center frames are brood (some pollen/honey/nectar at tops or edges)</li> </ul> <p>These rules apply to the Queen's Quarters, not the honey supers.</p>







<p>1. How to Open Hive</p> <p><b>2. Reading the Frames</b></p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2>Reading the Frames</h2>
	<p>Tip for seeing eggs: Finding the Egg Frame!</p> <p>Frame with <math>\frac{1}{2}</math> or more new comb</p> <p>Frame that “looks empty”</p> <p>Center of frame</p> <p>Or bottom/sides if larvae in middle</p>

<p>1. How to Open Hive</p> <p><b>2. Reading the Frames</b></p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2>Reading the Frames</h2>
	<p>Tip for seeing eggs: Seeing the Eggs!</p> <p>Hold frame over hive</p> <p>Light coming from behind</p> <p>Tilt rapidly...</p> <p>Wear your bifocals.</p>

<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p><b>3. Inspection Missions</b></p> <p>4. Solving Problems</p>	<h2 style="text-align: center;">Inspection Missions</h2>
	<p>How many frames to pull? Depends on your mission.</p> <ol style="list-style-type: none"> <li>1. Confirm Queen OK</li> <li>2. Supervise comb construction</li> </ol> <p>Might have both missions your first few months.</p> <p>If all your comb is drawn out but there is a newly installed package or swarm...no need to check comb construction.</p> <p>If you're feeding, or there is a nectar flow, you're always checking the queen is laying.</p>

<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p><b>3. Inspection Missions</b></p> <p>4. Solving Problems</p>	<h2 style="text-align: center;">Inspection Missions: Queen</h2>
	<p>Queen Check when...</p> <ul style="list-style-type: none"> <li>- Within 2 months of install</li> <li>- While feeding</li> <li>- Every 7-10 days</li> <li>- <b><i>Even if 3 boxes+, and they are heavy!</i></b></li> </ul>

<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2 style="text-align: center;">Reading the Frames</h2>
	<p>Queen check: How?</p> <p>Recall the hive wants the following configuration for the queen':</p> <ul style="list-style-type: none"> <li>Outer frames are stores (pollen, honey)</li> <li>Center frames are brood</li> </ul> <p>Recall the eggs were laid 0-3 days ago, while capped brood was laid at least 11 days ago, probably before you inspected the week before...</p>

		
<p>Egg : day 0 to 3</p>	<p>Larvae / open brood: day 4 to 9</p>	<p>Capped: day 10-21</p>

## Inspection Missions: Queen

Queen check: How?  
This far in, we know the queen WAS there 11-21 days ago...

N	Nec H	CWB								
1	2	3	4	5	6					

MT – empty comb, DRAWN  
N – new UNDRAWN  
½ - half drawn  
H - honey  
P - pollen  
Nec - nectar  
e – eggs (0-3)  
Lv – larvae (4-9)  
CWB – capped worker brood (10-21)

Worker Bees: eggs 0-3d, open brood 4-9d, **capped brood 10-21d**, foraging at 42d

Queen: QC open 0-8d, **QC capped 9-16d**, flying 20-23d, laying 23-28d

## Inspection Missions: Queen

Queen check: How?  
This far in, we know the queen WAS there 11-21 days ago...  
And now with the next frame, we know she is still laying. Done!  
Unless you need to check frame 6 to see progress with comb building...if you moved an undrawn one there the week before!


N	Nec H	CWB	lv/e							
1	2	3	4	5	6					

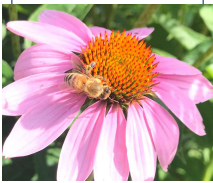
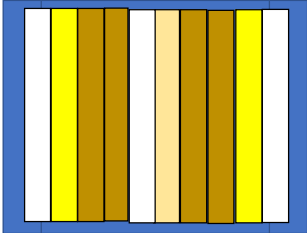
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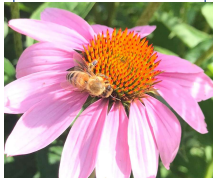
<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p><b>3. Inspection Missions</b></p> <p>4. Solving Problems</p>	<h2 style="text-align: center;">Inspection Missions: Comb</h2>
	<p>Comb Construction Check: How? Actively encouraging comb building.</p> <ol style="list-style-type: none"> <li>Each week, in the lowest brood box, move 1 undrawn frame to the center (maybe 2 if they are last two frames that are undrawn. Place a brood frame between these)</li> <li>Note you might want drone frames. These would stay on the outside positions... until 8 frames are drawn. Then move them to positions 2 and 9. The hive wants drone comb on the outside of the brood nest. Also each week, trim comb that is too fat or not drawn flat on the frame. Some examples are included, but have the equipment for comb trimming with you when you go out. Finally, once 8 frames on the top box in the stack are covered in bees, it is time to add the next box. Honey boxes (without brood) have different rules, not covered in this class...</li> </ol>

<p>Feeding Bees – how and why</p> <p>Your New Hive</p> <p><b>Your Growing Hive</b></p>	<h2 style="text-align: center;">Your Growing Hive</h2>
	<p>Recall that you can place undrawn frames into the center of the brood nest during each inspection. With 3 undrawn frames, just move one.</p> 

Feeding Bees –  
how and why

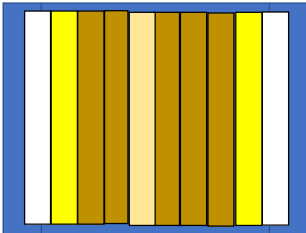
Your New Hive

**Your Growing  
Hive**



## Your Growing Hive

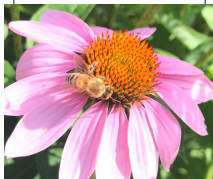
The following visit, you will be adding a new box. If the next box has the same sized frames, you will be moving two drawn frames upwards, and ONE undrawn frame into the center of the bottom box brood nest.



Feeding Bees –  
how and why

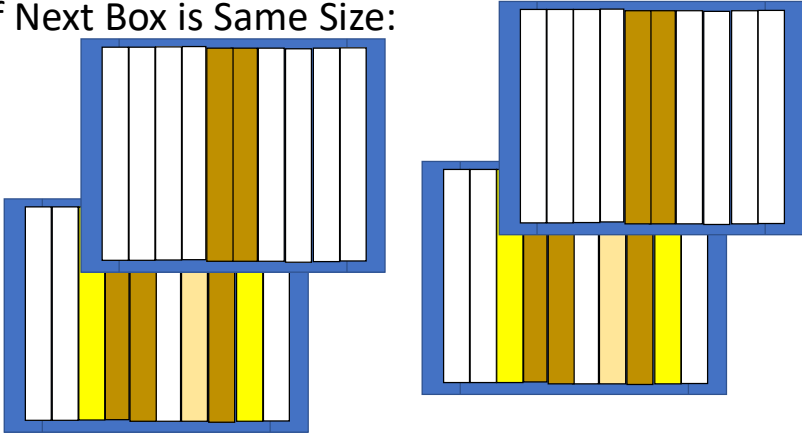
Your New Hive

**Your Growing  
Hive**



## Your Growing Hive

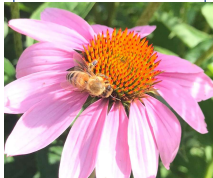
If Next Box is Same Size:



Feeding Bees –  
how and why

Your New Hive

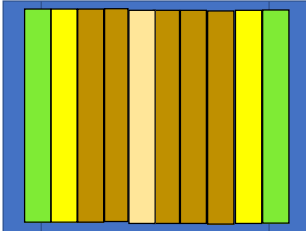
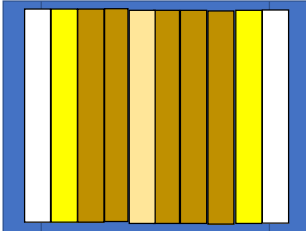
[Your Growing  
Hive](#)



## Your Growing Hive

If you are adding a new box that is NOT the same size, the steps are different.

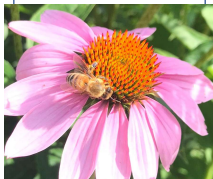
If those outer frames are set up to become drone frames (either they have no foundation, or they have the **special green foundation**), they go inwards one position. Otherwise they go inwards, more centered.

Feeding Bees –  
how and why

Your New Hive

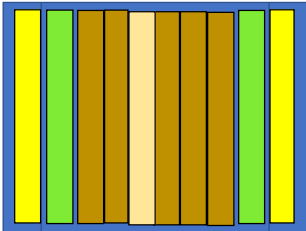
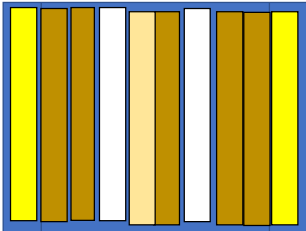
[Your Growing  
Hive](#)



## Your Growing Hive

If you are adding a new box that is NOT the same size, the steps are different.

If those outer frames are set up to become drone frames (either they have no foundation, or they have the **special green foundation**), they go inwards one position. Otherwise they go inwards, more centered.

Feeding Bees –  
how and why

Your New Hive

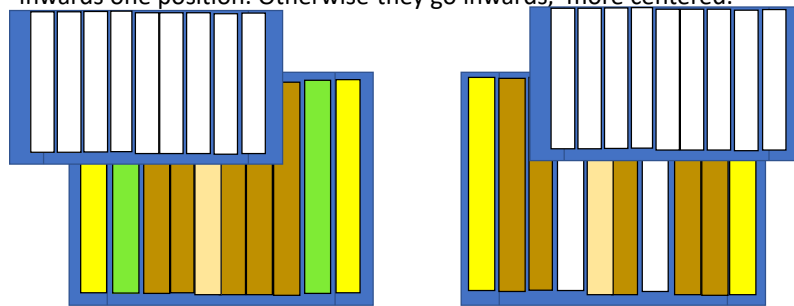
**Your Growing  
Hive**



## Your Growing Hive

If you are adding a new box that is NOT the same size, the steps are different.

If those outer frames are set up to become drone frames (either they have no foundation, or they have the **special green foundation**), they go inwards one position. Otherwise they go inwards, more centered.

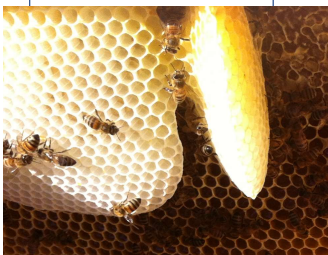


1. How to Open Hive

2. Reading the  
Frames

**3. Inspection  
Missions**

4. Solving Problems



## Inspection Missions: Comb

Comb Construction Check: How?

Actively encouraging comb building


...frame by frame,



...box by box

Correcting flawed construction



<ol style="list-style-type: none"><li>1. How to Open Hive</li><li>2. Reading the Frames</li><li><b>3. Inspection Missions</b></li><li>4. Solving Problems</li></ol>	<h2>Inspection Missions: Comb</h2>
	



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	<p>Comb Construction Check: How?</p> <p>Actively encouraging comb building ...frame by frame, ...box by box</p> <p>Correcting flawed construction – bring a bucket to hold honey/wax, and knife</p> <p>Accurate sense of progress</p>



<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p><b>4. Solving Problems</b></p>	<h2>The Queen: Lifeway</h2>
	<p>Now it's time to talk about detecting and handling queen problems.</p> <p>Queen: Egg d0-d3</p> 






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	<p>Queen: Egg d0-d3 Larv d4-8 These are also called "charged queen cells" or "open queen cells".</p>  <p>They point downwards. This view is the bottom of the frame.</p> <p>Beepods.com</p>


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	<p>Queen: Egg d0-d3 Larv d4-8 Capped d9-d16</p> <p>The capped queen cell does look like a peanut! Since the queen pupae is bigger than worker bees, this is how she is fitted in the hive..</p>  <p>Carolinahoneybee.com</p> <p>Supersedure or emergency queen replacement cells are few in number, but can be anywhere on the frame where eggs were found.</p>


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	<p>Queen: Egg d0-d3 Larv d4-8 Capped d9-d16</p> <p>The queen cells will be positioned where they can be most “downward”. Frame bottom or sides is preferred position. But since they have to use an egg, if that egg is in a regular cell, then the queen cell will be on the frame face.</p>  <p>beekeeping101</p> <p>Swarm cells are plentiful, are mostly on the frame edges or bottom, but can be on the frame face. There is one on this frame, upper right....</p>

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	<p>Queen: Egg d0-d3 Larv d4-8 Capped d9-d16</p> <p>Queen is out d16-d21 after her eggs was laid.</p> <p>Her body has to harden in the hive at that time, so she can then fly for her mating flight.</p> 


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	<p>Queen:</p> <ul style="list-style-type: none"> <li>Egg d0-d3</li> <li>Larv d4-8</li> <li>Capped d9-d16</li> <li>Hardening d16-d21</li> <li>Able to mate d21-d42 (she might have to wait for a nice day if the weather is bad for a long stretch)</li> <li>Laying +3 days after mating flight</li> </ul> 


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	<ul style="list-style-type: none"> <li>• If the queen is gone, can still have signs of brood for 3 weeks.</li> <li>• If there is a <b>capped</b> queen cell, there is not a queen (usually – 90% of the time)</li> <li>• If there is no longer any capped worker brood, there might be a new laying queen – or a virgin queen – or maybe not.</li> <li>• It is very common for a package installation to supersede their queen. You can't stop it, but you can guide it. Leave ONE supersedure cell...make notes... follow subsequent steps IF you have two hives, one with a laying queen.</li> <li>• It is somewhat common for a nuc installation to swarm. Again you won't be able to stop it without removing the queen, who generally can't be found in a strong hive... Leave ONE queen cell, follow subsequent steps if you have two hives.</li> </ul>


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	<ul style="list-style-type: none"> <li>• Top Recurring Problem: Do I have a laying queen? I can't find eggs/larvae! There isn't much capped brood!       <ul style="list-style-type: none"> <li>• Is there room to lay?           <ul style="list-style-type: none"> <li>• If there is a lot of nectar and not much comb, answer could be NO!</li> </ul> </li> <li>• Are the bees able to feed her (and brood)?           <ul style="list-style-type: none"> <li>• No incoming nectar and no incoming pollen: minimal egg production.</li> <li>• If the temps are very chilly, the bees can't suck down much sugar syrup, and can't forage for pollen.</li> <li>• Once we hit mid July and August, often the nectar flow shuts off and the queen will also slow way down.</li> </ul> </li> </ul> </li> <li>• Or... she was crushed last visit, or she is in the process of being superseded.</li> </ul>




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	<p>You inspect, and don't see eggs/young larvae, or only a couple frames of CWB.</p> <ul style="list-style-type: none"> <li>• Did she go missing? Maybe there is little/no pollen and nectar coming in.</li> <li>• Did she go missing? True if...             <ul style="list-style-type: none"> <li>• Do you only see CWB, but plenty of nectar? Original queen was there 11+ days ago, but not now. Could be a daughter coming on...</li> <li>• No CWB? Original queen gone 21+ days ago. But a daughter queen could be coming on...</li> </ul> </li> <li>• Solution if you do not have a hive:             <ul style="list-style-type: none"> <li>• If you see no CWB this week, yes last week, no eggs... buy a queen. But the bees may reject her because they have one... there goes \$35 or more.</li> </ul> </li> </ul>


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	<ul style="list-style-type: none"> <li>• Solution (if you do not have another hive) to fix missing queen: Gambling on a new one.             <ul style="list-style-type: none"> <li>• If you see no CWB this week, yes last week, no eggs... buy a queen. But the bees may reject her because they have one... there goes \$35 or more.</li> <li>• If you wait too long past when CWB has matured out, then the bees will reject a new queen (might be too old to feed brood? My guessing). Or they will have started to become laying workers, and will also reject a queen.</li> </ul> </li> </ul>






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	<p>Or, you went looking for eggs and found a QUEEN CELL! That marks your Day 0.</p> <ul style="list-style-type: none"> <li>- Maybe she was crushed or lost last time...</li> <li>- Maybe they swarmed</li> <li>- Maybe she was needing superseded...</li> <li>- It happens at some point to us all, and they WILL NOT change their mind.</li> </ul> <div style="border: 1px solid black; padding: 10px; text-align: center; margin: 10px auto; width: 100px;"> <p>QC Now What?</p> </div>	


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	<ul style="list-style-type: none"> <li>• Next most common problem: Why aren't they drawing out the frames?!?!</li> <li>• Drawing Comb: Must have a reason       <ul style="list-style-type: none"> <li>• Boss is Home! (there is a laying queen)</li> <li>• Extra Money Available (there is nectar coming in, sufficiently)</li> <li>• Have a "gap" to fill (you are placing undrawn frames effectively)</li> </ul> </li> </ul> <p>Otherwise, they won't draw comb.</p> <p>* When add next box, it is more effective to place above where the queen is laying. If you already have 2 boxes... this will mean BETWEEN the top and bottom box, if the honey is on top and the queen is below.</p>



1. How to Open Hive

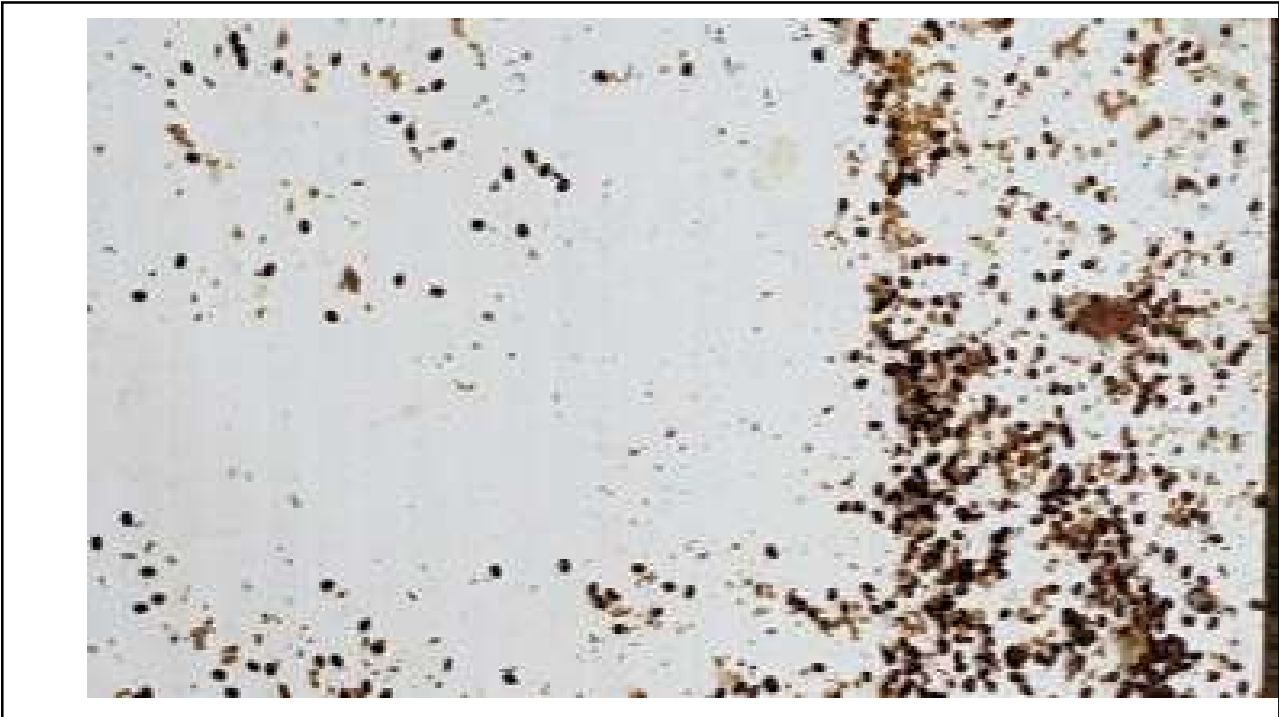
2. Reading the Frames

3. Inspection Missions

4. Solving Problems

# Varroa Mites: Know Your Enemy





1. How to Open Hive

2. Reading the Frames

3. Inspection Missions

4. Solving Problems



## Varroa Mites: Know Your Enemy

### Varroa Lifecycle:

1. Adult mite enters bee brood cell just before it is capped
2. Mite feeds on bee pupae, lays 1-4 offspring
3. 2+ mites emerge when bee brood emerges, ready to party
4. Adult mite can also HITCH-HIKE in on adult bees!



4:20 / 41:24

**Effective use of Oxalic Acid to suppress Varroa with Marion Ellis**

BrushyMtnBeeFarm

**Subscribe** 10K

24,880 views

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118

7

Published on Mar 18, 2016

With its high efficacy and low risk of contamination, many beekeepers are looking to use Oxalic Acid this year. We have brought in an expert panelist, Marion Ellis Ph.D, to better explain the use of Oxalic Acid. As an entomologist, his research into the effects of varroa and other parasites on honey bee colonies have given beekeepers insight into better hive management.

SHOW MORE





1. How to Open Hive

2. Reading the  
Frames

3. Inspection  
Missions


4. Solving  
Problems

## Varroa Mites: Know Your Enemy

How do mites kill hives?


1. Home-grown
2. Imported



<ol style="list-style-type: none"> <li>1. How to Open Hive</li> <li>2. Reading the Frames</li> <li>3. Inspection Missions</li> <li>4. Solving Problems</li> </ol>	<h2>Varroa Mites: Know Your Enemy</h2>
	<p>Home-Grown: How Mites Kill</p> <ol style="list-style-type: none"> <li>1. Compromise bees that are fed upon</li> <li>2. Introduce viruses to whole hive</li> <li>3. Increase numbers exponentially</li> </ol>

<ol style="list-style-type: none"> <li>1. How to Open Hive</li> <li>2. Reading the Frames</li> <li>3. Inspection Missions</li> <li>4. Solving Problems</li> </ol>	<h2>Varroa Mites: Know Your Enemy</h2>														
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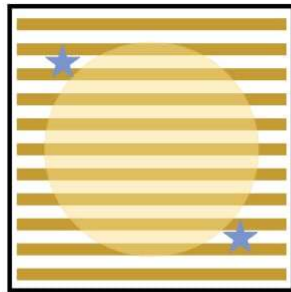
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<p>The Queen</p> <p>Problems and solutions</p> <p>Varroa Mites</p> <p>Hot Bees?</p>	<h2>Varroa Mites: Have a Plan!</h2>
	<p>Solution to Home Grown: Clean Slate!</p> <ol style="list-style-type: none"> <li>1. Treat Upon Arrival             <ol style="list-style-type: none"> <li>1. Apivar (2 strips)</li> <li>2. Oxalic Acid Dribble (30 ml)</li> <li>3. Oxalic Acid Vaporization</li> </ol> </li> </ol>

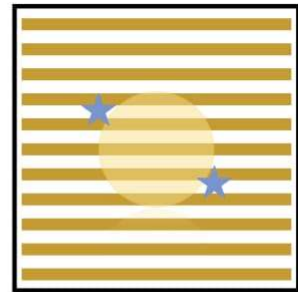
# Apivar Strips



# Apivar Strips



Mid-August



Mid/late-September

## Apivar Strips

- 4 strips/2 deeps
- 6 weeks in hive
- Only exposed mites will die
- Cannot sell honey when strips in brood nest

1. How to Open Hive

2. Reading the Frames

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## Varroa Mites: Have a Plan!

Solution to Home Grown: Clean Slate!

1. Treat Upon Arrival
  1. Apivar (2 strips/1 deep)
  2. Oxalic Acid Dribble (30 ml)
  3. Oxalic Acid Vaporization

## Oxalic Acid

- Dribble



- Vaporization



## Oxalic Acid

- Dribble
- \$20/10 treatments?
- 5 min treat/ 3 days effective
- Only exposed mites will die
- Every 6 months



- Vaporization
- \$120-180 for infinite treat
- 5 min treat/ 3 days effective
- Only exposed mites will die
- Every 7 days is fine
- Even with honey supers

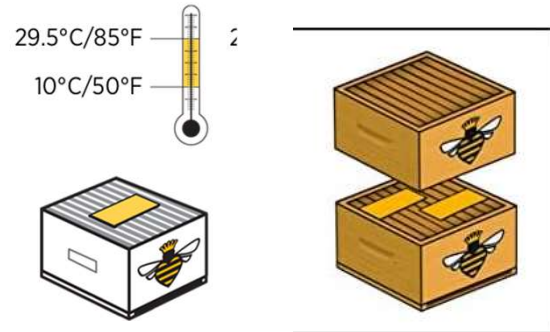
Apivar Strips	Oxalic Acid
<ul style="list-style-type: none"> <li>• 4 strips/2 deeps</li> <li>• \$35/10 strips</li> <li>• 6 weeks in hive</li> <li>• Only exposed mites will die</li> <li>• Cannot sell honey when strips in brood nest</li> </ul>	<ul style="list-style-type: none"> <li>• Dribble / OAVapor</li> <li>• \$20 / \$160</li> <li>• 5 min / 3 days</li> <li>• Only exposed mites will die</li> </ul>

<ol style="list-style-type: none"> <li>1. How to Open Hive</li> <li>2. Reading the Frames</li> <li>3. Inspection Missions</li> <li>4. Solving Problems</li> </ol>	<h2>Varroa Mites: Have a Plan!</h2>
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## Formic Pro

- 2 weeks
- Temperature sensitive
- Kills mites INSIDE brood
- OK with honey supers
- Hard on queen?



## Oxalic Acid





- Dribble
- \$20/10 treatments?
- 5 min treat/ 3 days effective
- Only exposed mites will die
- Every 6 months

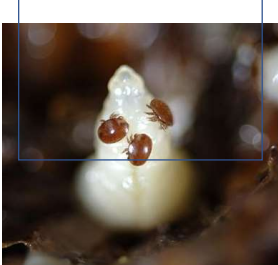
Not an option in summer if did in spring


- Vaporization
- \$120-180 for infinite treat
- 5 min treat/ 3 days effective
- Treat 3 times, 7 days apart


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	<p><b>Solution to Home Grown: Clean Slate!</b></p> <ol style="list-style-type: none"> <li>1. Treat Upon Arrival</li> <li>2. Treat in Summer</li> <li>3. Treat in Fall             <ol style="list-style-type: none"> <li>1. Apivar in Oct, then Oxalic Dribble in Dec</li> <li>2. Oxalic Acid Vaporization 3 times, every 2-3 weeks.</li> </ol> </li> </ol>

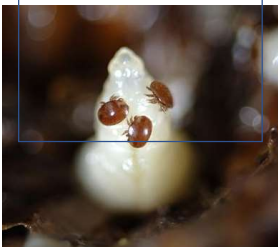
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	<p>Home Grown: solved. But the bees can still die of mites! How?!?!?!</p> <ul style="list-style-type: none"> <li>• When a hive weakens from mites, <b>your</b> hive will come rob it!</li> <li>• 1 mile radius</li> <li>• Possibly 10,000-20,000 mites incoming</li> <li>• Can happen any time, most likely in fall.</li> </ul>

<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2>Varroa Mites: Revised Plan!</h2>
	<p>Home Grown: solved. But the bees can still die of mites! How?!?!?!</p> <p>Solution: Assume mites being imported, treat accordingly.</p> <p>Thanks to John Rose for testing this strategy out!</p>

<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2>Varroa Mites: Revised Plan!</h2>
	<p>John Rose Miteproof Treatment Plan:</p> <ul style="list-style-type: none"> <li>• Treat new hive – Apivar or OAD or OAV</li> <li>• July or early Aug – Formic Acid</li> <li>• Sep or early Oct – Formic Acid (or OAV 3x)</li> <li>• Nov – Apivar, then OAD (or OAV 3x)</li> <li>• Feb/March – Apivar (or OAV 1x)</li> <li>• May – Formic Acid</li> </ul>

<p>1. How to Open Hive</p> <p>2. Reading the Frames</p> <p>3. Inspection Missions</p> <p>4. Solving Problems</p>	<h2>Varroa Mites: Revised Plan!</h2>
	<p>Required steps for successful mite management:</p> <ol style="list-style-type: none"> <li>1. Believe the mites are in your hive</li> <li>2. Believe that their numbers increase exponentially</li> <li>3. Believe that at any time you may have incoming mites from dying hive</li> </ol>



<ul style="list-style-type: none"> <li>1. How to Open Hive</li> <li>2. Reading the Frames</li> <li>3. Inspection Missions</li> <li>4. Solving Problems</li> </ul>	<h2 style="text-align: center;">Varroa Mites: Know Your Enemy</h2>
	<p>Randy Oliver Mite Model!  <a href="http://Chickabuzz.com/model.html">Chickabuzz.com/model.html</a></p>

<ul style="list-style-type: none"> <li>1. How to Open Hive</li> <li>2. Reading the Frames</li> <li>3. Inspection Missions</li> <li>4. Solving Problems</li> </ul>	<h2 style="text-align: center;">Happy Bee Watching!</h2>
	<p>Inspect: Forewarned is Forearmed!        (and don't be a bear)</p> <p>Queen: Trust, but Verify!        Take notes, understand her lifecycle.</p> <p>Mites: Have a Plan, stick with it!        Buy mite management stuff before get bees.</p> <p>It's that simple!</p>