Williamson County Area Beekeepers Association

# THE Buzzword

June 2016 Newsletter

*Next Meeting:*
**Thursday, June 23, 2016**

7:00-8:00: Beekeeping 101 / 201
8:00-9:00: Program

First United Methodist Church
Georgetown (MMC bldg.)

Beekeeping 101: Laura Colburn
*"Summer Hive Expectations"*

Beekeeping 201: Chris Doggett
*"Honey Bee Nutrition"*

Program Speaker: Mary Reed from Texas Apiary Inspection Service
*"Integrated Pest Management"*

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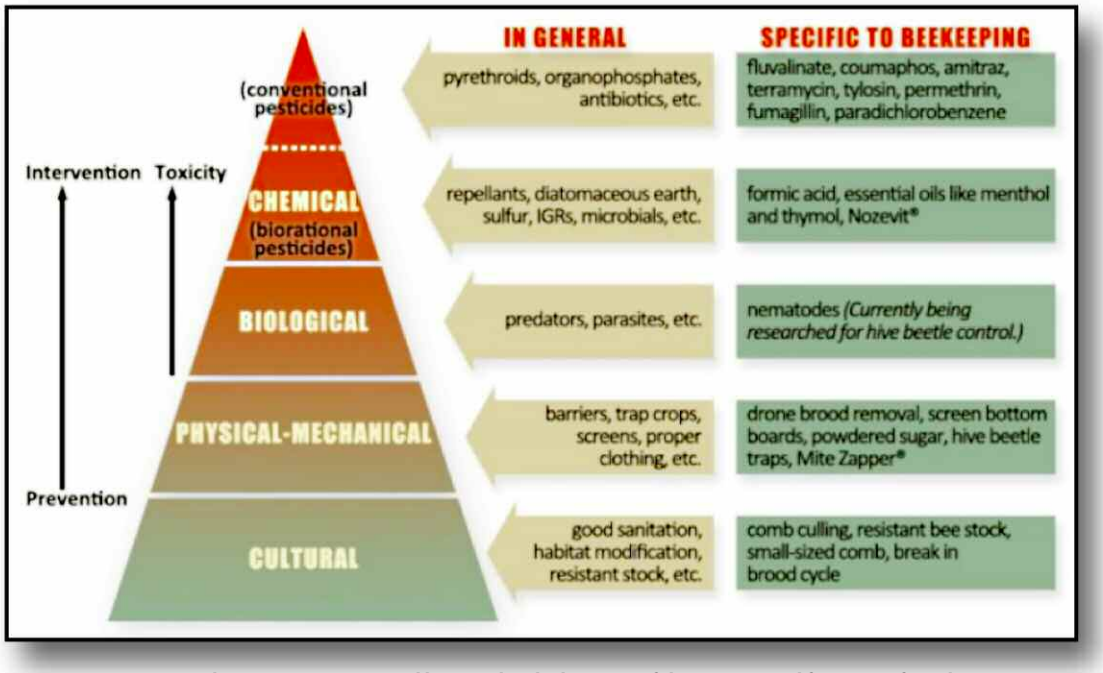
# Varroa, Miticides, and IPM

## for Beginning, Intermediate, and Advanced Beekeepers

***by Liz Walsh*** *(Rangel Honey Bee Lab, Texas A&M University)*




**IPM is "integrated pest management" and here is a lovely depiction of the IPM pyramid from one of Dr. Elina Niño's 2015 newsletters. As you can see, chemical use is the last thing we should be doing to control pests.**

In 1987, varroa mites first made it to the U.S. They caused devastation in the beekeeping industry and general panic. The feral honey bee population has since dropped almost 90%--a loss attributed to varroa mites—and beekeeping, as you will find from talking to any beekeeper from that period, became much harder.

It is no surprise that we, as a community, want our honey bees sans varroa mites. In the initial effort to kill varroa mites, we used fluvalinate—trade named Mavrik or Apistan—as our miticide of choice. While we initially illegally used this product, it did eventually become the first legal miticide under a Section 18 Emergency Ag Exemption. While fluvalinate was initially highly successful in controlling varroa mites, the mite quickly developed a resistance to it and by 1994 it had largely fallen out of favor in the beekeeping community. This may have actually been a good thing in the long run, as fluvalinate has since been shown to cause lower numbers of sperm inside of queen spermathecae (the queen sperm storage organ) among other problems.

Then beekeepers began to use coumaphos, an organophosphate. Coumaphos was the second miticide to be legally used by the beekeeping industry after it was also granted a Section 18 Emergency Ag Exemption in 1999. Coumaphos, tradename Checkmite+, killed varroa by inhibiting nerve signaling and function, causing tremors—or T-syndrome—in the mites and paralysis which eventually lead to death. Coumaphos also has a half life of 5 years when in beeswax. Varroa quickly developed a tolerance and eventual resistance to coumaphos as early as 2001. As with fluvalinate, this may have been a blessing in disguise. Honey bees can tolerate some exposure to coumaphos, but it has individually been shown to cause queens to be of smaller size and cause higher queen mortality.

It's important to note that the years I'm reporting here are what the academic literature reports. Beekeepers have given me different numbers when I've spoken to them, and I'm sure many of you will have different numbers as well, but these are the numbers that the government and academia has chosen to publish, so they are what I am using.

## Varroa, Miticides, and IPM *(continued)*

Now, with both fluvalinate and coumaphos out of commission, the beekeeping community began doing things it shouldn't have. There was always some illegal use of miticides—using ones which weren't legal, not buying miticides mixed for honey bee use, etc.—but when both fluvalinate and coumaphos stopped working very well, we seem to have completely lost our sense. We started doubling the amount of each product in hopes that higher levels of the product would give us the varroa kills it initially did, we started using both fluvalinate and coumaphos simultaneously in honey bee colonies, and we did other off-label and illegal use of other products. Eventually, other miticides were developed, most notably amitraz, formic acid, thymol, and oxalic acid. We used these products before they were legal in relatively high dosages and then were surprised when they didn't work as well as anticipated at legal levels later on.

This is the point where it's important to note that the law is not always right. That said, products are illegal for livestock and food product use for a reason. You shouldn't use off-label miticides. It's illegal to do so. These are not two exclusive things. I would recommend legal beekeeping not to avoid illegal activities, but because of the reasons those activities are illegal. If the EPA or FDA, two agencies that I do not necessarily think highly of, say it's not safe to use a product when they said it was safe to use DDT, when they say that organophosphates are a necessary evil, when …I could keep going. The point is that if the EPA or FDA has finally said that something is too dangerous to be used, then that makes me sit up and take notice because they are ok with a lot of products that seem dangerous to me. (To people who want to tell me how soft or non-harmful the product they are illegally using is, I would like to preemptively ask: say what studies? Say what experts? How do you know what you say you know?)

This cycle, of miticide use, varroa resistance to a miticide, miticide misuse, emergency exemptions, etc. collectively puts us, as an industry, on the "chemical treadmill." The chemical treadmill is one that is difficult to get off of. We can't completely stop miticide use, as that would mean colossal colony loss to varroa mites. We shouldn't keep prophylactically treating for mites either, as we'll just be continuing to breed a "super mite." This is a difficult situation with no easy answers, but perhaps the best place to start would be to admit that we have a problem. After admitting we have a problem, maybe we should seriously wonder if we are ever going to find the silver bullet for varroa mites. After all, it is a silver bullet that we are looking for, right? I've only been a beekeeper for 8 or 9 years and in that time I've seen how excited we all were about amitraz, formic acid, oxalic acid, etc. We think that the next best miticide is going to solve all of our varroa problems.

*That just isn't realistic.*

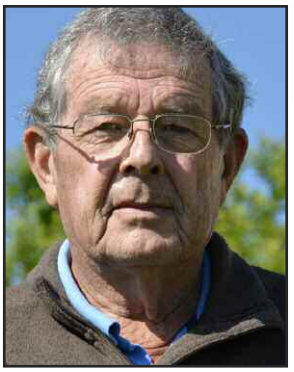
It seems to me that, instead of continuing to look for a silver bullet, we should instead work on our IPM strategy. IPM is "integrated pest management" (see the lovely depiction of the IPM pyramid from one of Dr. Elina Niño's 2015 newsletters at the beginning of this article). As you can see, chemical use is the last thing we should be doing to control pests. We should first start with cultural controls (rearing hygienic bees, breaking up the brood cycle by caging the queen or splitting, etc.) Then we move up the pyramid. We try screened bottom boards, drone frames, etc. Then we try biological controls—where we try to look for a varroa mite's natural enemy. This step is easier said than done, but universities nationally and internationally are looking for biological controls for varroa mites. Only after all of these options are exhausted should we be turning to soft chemicals and only after those should we be turning to hard chemicals. It is vital to note that you should only move on to the next step of the pyramid if your varroa levels exceed your economic thresholds, something that you can only discover by sampling. Break out your ether rolls, powdered sugar rolls, screened bottom board trays, etc. You need to sample often and accurately to determine if you need to use additional varroa control methods or not. As a side note, if you are not sampling or exhausting other options before using chemicals, then you are not practicing IPM and I and those other beekeepers who do practice IPM would appreciate it if you didn't say you were. If you willfully choose not to practice IPM because it is "cheaper," "more efficient," etc., then I would like to state that I believe you are part of the problem. Yes, you are saving dollars in the short term, but you are also killing everyone's bees in the long term.

We should also notice that we've been going about varroa control backwards. We started with the hard chemicals (fluvalinate, coumaphos, etc.) and then we worked our way down the pyramid. This is partly why we struggle so much with the varroa mite. We've bred it to be a very difficult pest to control. We've also destroyed the quality of our beeswax in the process. Studies have shown that the majority of honey bee colonies in the United States exhibit contaminated beeswax, some of which contain alarming levels of these acaricides. Mullin et al. (2010) did a survey of commercial honey bee colonies across the U.S. and found 87 different pesticides and their metabolites in 259 wax samples and the most contaminated sample had 39 different pesticides and their metabolites. The average wax sample had 8 different pesticide residues in it, with almost half (49.9%) containing one or more systemic pesticides. The miticides fluvalinate and coumaphos were primarily found in conjunction with each other and were in 77.7% of all the bee, pollen, or wax samples surveyed, while amitraz, or its metabolites DMPF or DMA, were in the top ten most ubiquitously present wax contaminates. Beekeepers of all ages had contaminated wax, even if they had never used fluvalinate or coumaphos in their own operations. This is likely due to buying foundation that was pre-contaminated with wax companies bought from beekeepers who did use these products. Please note the year this study was done, 2010. It is possible that a similar survey would have slightly different findings now.

As an industry and a community, perhaps we should take a long and hard look at our own operations before complaining about others. Unless you sample for varroa often, unless you utilize the IPM pyramid from the bottom up, then please don't complain about the farmer next door and their chemical use, a lack of chemical-free bee forage, or other things of that nature. It doesn't make sense to hold others to higher standards than we are holding ourselves to. That said, if you are not practicing IPM please let me know why. I won't ridicule you, but no one has given me a solid reason not to practice IPM yet and I'm curious if one exists.

**Guest speaker, Liz Walsh, from Rangel Honey Bee Lab, Texas A&M University.**

## Letter from the President



Chris Doggett, WCABA President

There is honey in my hives, which is much better than last year when there was very little. So don't forget to add supers as you fill 7 – 9 frames in each box. The honey flow should continue for a few more weeks after which there are a number of things to do:

- Rob the hives of honey
- Extract the honey and return the supers to the hive (the bees will clean up the wax far better than we can)
- Prepare to feed during the summer dearth – the bees will need 1 – 1 sugar water during late July and August, depending on how much honey you have left in the hive.

Our Association has two sets of extraction equipment which are kept at the Bost Farm. Call Mary at (512) 863-3656 to arrange to pick up equipment. Please make sure you return everything on time and clean, which will be most appreciated.

Our meeting this month is on the 23rd of June – the 4th Thursday as usual – and I look forward to seeing you there.

## *New Members and Membership Renewals*

**Welcome to our new members:**
Robert McCammon, Georgetown;
Jean Flahive, Georgetown;
Kevin Ueckert, Georgetown;
Steve Schiller, Coupland

**Renewing members are:**
Kay Freund, Georgetown

# Honey Extracting Workshop

There will be hands on experience in setting up and using the equipment. Anyone who has not used the club's extracting equipment before would find it beneficial to attend.

**Where:** **Bost Farm**
**4355 C.R. 110, SE of Georgetown**
**When:** **Saturday, June 25th from 10 to 2 pm.**

## Use of the Club Extracting Equipment

WCABA has 2 extractors with equipment for our members to use, if needed, for extracting honey. If you would like to schedule a date for using one of the extractors & equipment, call Mary Bost (512-863-3656) or email her at *bostbees@gmail.com* to schedule your preferred date. Be sure to have an optional date in mind in case both sets are already booked. Also, the equipment is now stored in the garage area, not where it used to be.

If you have not previously used the extracting equipment, you will then need to contact Jimmie Oakley (512-507-3009) to arrange an appointed time to meet him at the Bost farm in order for him to meet you there and demonstrate the proper procedure for checking it out and using it.

We are requesting that users make a voluntary contribution to WCABA of either a money donation or a container of honey to be sold at the upcoming Fair. These donations will benefit our Ed Wolfe/Robert Bost Scholarship program.

**"Thank You!" to our Refreshment Hosts:**
Laura Colburn
Linda Potts
Phil Ainslie

# Swarm Season

***by Elise Gardner*** *(WCABA Honey Princess & Apprentice Master Beekeeper)*

Swarming is the hive's form of reproduction. When the bees don't have enough space in the hive, due to overcrowding, they will often try to swarm. This is especially common in the spring. When this happens the bees will rear a new queen to stay with the hive and the old queen will leave, taking 60% of the bees with her.

**My hive on the left is just beginning to swarm. You can see bees starting to beard on the front of the hive before they flew off.**

Now something that confuses a lot of people is whether or not a queen cell in their hive is a *swarm cell* or a *supersedure cell*. When your queen dies or is not producing the way she should be, the worker bees will make a supersedure queen cell to replace her. These cells are typically located in the middle of a frame of comb. When your hive is trying to swarm, the queen cell will be located at the bottom of the frame of comb. This is one way to tell, early on, if your hive is going to swarm and you can then try to prevent that by removing the extra queen cells and adding a super on top of the hive to create more room.

If you didn't notice in time to take preemptive measures, and your hive has already swarmed (as recently happened to me), there are ways that you can re-capture that swarm if you are lucky enough to see it! Of course you can call someone who is a trained swarm capture specialist (Jim Colbert has a list of members willing to help with this) or you could try to do it yourself, like I did, though I was unsuccessful this time! My bees swarmed up into the top of a very tall oak tree, so even our tallest ladder was not tall enough to reach them, so I had to research other methods of capturing swarms.

**My bees swarmed into the top of a very tall oak tree. They hung out here for 3 days before they moved on.**

I'm going to share with you one way I found, that can be an effective DIY swarm capture method. If you take a nucleus box and place it somewhere near the spot the swarm is (if you can spot them), and place a cotton ball with a few drops of lemongrass oil in the nuc, you may be able to attract those bees to that box, and hopefully have them move into it. Lemongrass helps to mimic the homing pheromone that bees produce and, therefore, naturally attracts bees. When I tried this at home, a number of the bees were attracted and did stop by to have a look at my nuc, but for whatever reason, the swarm did not end up moving in. My neighbor a few houses down spotted a swarm on her property that had moved into a hollow tree - perhaps my bees, who knows!

**Here I am putting lemongrass oil on a cotton ball to place in the nuc.**

If you are more successful than me, and manage to capture a swarm, you can leave it in the nuc for a while in order to establish a new hive using the bees you captured!

Good Luck!

**Here is one of my bees checking out the nuc. They were very curious about the lemongrass odor, so I think this method has potential!**

**Buzzwords:**

**• Swarm •**

bees that emigrate from a hive and fly off together, accompanied by a queen, to start a new colony

**• Supersedure •**

the replacement of an old or inferior queen bee by a young or superior queen

Busy Bee Chic

WCABA Honey Princess, Elise Gardner, has started a bee blog. Check it out at: **www.BusyBeeChic.com**

## Honey Lemon Chicken Lettuce Wraps

**Ingredients:**

1 Tbsp coconut oil
2 Cloves garlic, finely chopped
2 Chicken breasts, finely diced
2 Tbsp soy sauce
Zest of 1 lemon
3 Tbsp Real Texas Honey
1/2 tsp Poppyseeds
6 Butter lettuce leaves
1 cup Julienned carrots
1/4 cup Microgreens or cilantro
1 1/2 cups cooked jasmine or sticky rice (optional)

**Instructions:**

1. In a large skillet over medium-high heat, melt coconut oil.
2. Add garlic and cook until aromatic, about 30-45 seconds.
3. Add diced chicken and soy sauce to the pan, saute just until chicken is barely pink.
4. Add lemon zest and honey, turn heat to medium and cook just until honey is caramelized.
5. Toss in poppyseeds.
6. Serve in lettuce leaves (with rice, if desired). Top with julienned carrots, a fresh squeeze of lemon juice and microgreens as garnish.
7. Enjoy!

**Recipe courtesy of Get In My Belly. http://getinmybelly.com/honey-lemon-chicken-lettuce-wraps/**

## WCABA MEETING MINUTES

May 26, 2016

1. **Opening the Meeting:** President Chris Doggett opened the meeting.

2. **Beekeeping 101:** Laura Colburn discussed "Merging and Splitting Hives". She also led a dynamic question and answer session after her talk.

3. **Beekeeping 201:** Liz Walsh discussed "Queen Rearing" with this group.

4. **Announcements:**

- Texas Beekeepers Association will have a Summer Clinic on Saturday, June 18, at the Lone Star Convention & Expo Center, 9055 Airport Road, Conroe, TX 77303. Classes will be available for all levels of beekeeping. Register at texasbeekeepers.org. The fee is $50 per person, $90 per couple, $25 for age 15 and under. The fee includes lunch. Russ Conrad will be the major speaker.
- The WCABA is selling the exemption labels for beekeepers at $5.00 a roll.
- For new beekeepers, the Texas Beekeepers Association offers free one-year memberships. Contact Shirley Doggett for the form you will need to fill out.
- Jim Colbert reminded everyone about the mentoring program and also mentioned he is in charge of the club's swarm list. He asked for members to sign up for either or both.

5. **Guest Speaker:** Liz Walsh was our guest speaker. Liz is a Ph.D. student at the Texas A&M Department of Entomology. She has received multiple honors and awards for her studies of bees and the study of the effects of in-hive miticides on queens. Liz spoke to the group about the "IPM Pyramid".

6. **Meeting Attendance:** 87 present

7. **Meeting Adjourned:** President Chris Doggett adjourned the meeting.

8. **Date for Next Meeting:** Our next meeting will be on June 23, 2016.

*- Ginny Stubblefield, Secretary, WCABA*

## Swarming Season

**if you (or a friend/neighbor) have a swarm**

**Contact Jim Colbert 512-863-7183**

**who has replaced Mary Bost with this responsibility**

## Swarm List

If a member would like to be on the list to collect swarms, contact Jim to be sure he has your name, phone number, and the areas you would be able to serve. If you are willing to retrieve swarms that have nested in places difficult to reach (called "cut-outs"), be sure to let Jim know that.

# MEMBERSHIP APPLICATION

**WILLIAMSON COUNTY AREA BEEKEEPERS ASSOCIATION**
Dues $15.00 per year - individual or family membership

New Member / Renewing Member (circle one) Date:_____

Name: _____ Amount: $ _____

Address: _____

City/State/Zip _____

Phone: ( ) _____ e-mail: _____
(please print)

To save postage cost, may we send your Newsletter via e-mail? Yes[ ] No[ ]

Instructions: print, fill out, and bring to club meeting, or mail with check to Membership:
Mrs. Shirley Doggett - 400 C. R. 440 - Thrall, TX 76578

## Support TBAs "Real Texas Honey" Program

It has become increasingly important for us to support our local honey producers due to the growing problems consumers face of not knowing what they are getting when they grab a bottle of honey off the grocery store shelf. Honey imported from China has been found to be contaminated with heavy metals and antibiotics; "ultra-purified" honey has all its beneficial ingredients filtered out, including pollen (which is the only absolute way to identify where the honey comes from); and you will even come across fake honey, a blend of honey and other sweeteners like cheap corn syrup and artificial sweeteners. It truly is a case of "you get what you pay for" with honey, so go ahead and spring for the artisanal brand, or better yet, find a local beekeeper to support!

**We are selling t-shirts at our WCABA meetings to help support the "Real Texas Honey" Program.**

TBA has launched a "Real Texas Honey" program with the goal of connecting consumers with real local beekeepers. They are currently trying to get Texas beekeepers to sign up, so if you sell honey, make sure to visit the website and register, and if you want to take advantage of the health benefits of buying local honey, log on to find a beekeeper near you. The more participants the better the program will work!
Visit ***RealTexasHoney.com*** for more information.

# Merging and Splitting Hives

*by Laura Colburn*

## Merging Hives: Why and How?

There are several reasons a beekeeper may want or need to merge two hives. Probably the two most common reasons are an unexpected queenlessness and combining weak hives. The approach to both is the same: combine a queenless hive with a queenright hive. That's an important component of merging: one of the hives must be queenless. Don't try to merge two queenright hives and let the queens fight it out. You may not end with the better of the two queens, or worse they both die. Better to plan ahead and choose which queen to keep if both hives are queenright. Merging weak hives before winter will help both hives overwinter and increase their chances of survival into the next season.

**Here is an example of a paper merge.**

Merging is very simple: staple paper to the bottom of an empty brood box or to the top of the host hive. Poke three or four rows of very small holes using a pen or pencil tip. Avoid tearing the paper or making holes large enough for a bee to pass through. Then put the queenless hive on top, transferring frames if you stapled paper to the bottom of an empty box. Close up the hive and let the bees do the rest of the work. Within a few days, bees from both sides will have chewed through the paper, providing a slow introduction of the two hives.

Splitting hives is a little more involved and several approaches can be used, depending on why you want to split. It's important that a hive be strong enough before you consider splitting, with no less than six full frames of brood/larva, two frames of pollen, and two of honey. It's also important to realize that a split hive will produce less honey because their focus will shift from production to population increase. Plan accordingly and leave enough honey stores for their overwintering needs: at least 30 pounds for our area.

## Overnight Split and Walk-Away Split

Start both of these methods by moving a frame each of pollen and honey from the host hive to an empty brood box. You will also select at least three frames of brood in various stages: eggs, open larva, and capped brood. Check each frame for the queen before proceeding.

This is where the methods diverge.

In an overnight split, you'll shake all the bees back into the host hive before moving the frames. Look carefully for the queen so you don't shake her. Place the prepared split above a queen excluder over the host hive. Over the next few hours, nurse bees will crawl up through the excluder to care for the brood. The next day, move the prepared brood box to a bottom board.

In the walk-away method, you can look for the queen, but it's not essential that you find her. Move at least three frames of brood in various stages. It's a good idea to shake an extra frame of nurse bees into your split so there will be plenty of bees to care for the brood. Nurse bees will be primarily on open larva. In a few days, check both hives for queen cells as an indication of which part of the split kept the queen. All the foragers that were moved in the split will return to their home hive.

## Swarm-Control Split

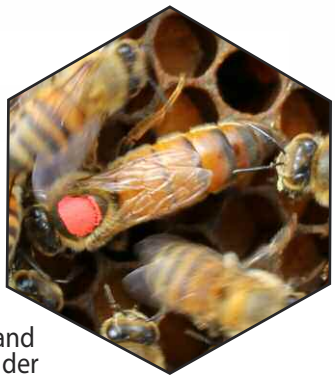
When one of your hives swarms, you lose your valuable queen and may end up with a hive ill-equipped for winter. However, once a hive has initiated swarm preparations, it's very difficult to change their little bee minds. It's too late to simply add more space. If you're positive your queen is still home, you can remove the swarm cells, but that alone will not be enough to stop the instinct. However, you can keep your queen and all the bees that would leave in a swarm by simulating a swarm.

When you see the swarm cells with larva inside, know they will be capped around their 9th or 10th day. When the cells are capped, the bees may either wait until one has hatched or they may swarm before it hatches. This is why you must know if the queen is still there before taking action.

Prepare a brood box by moving a frame of pollen and honey from the host hive. Find the frame with your queen and move it to the new box, then move two or three more frames if using a brood box. Be sure not to move frames with queen cells, or remove any queen cells from frames you want to move. You have now done what the bees wanted to do: reduced the population.

**Here is an example of an overnight split.**

## Merging and Splitting Hives *(continued)*

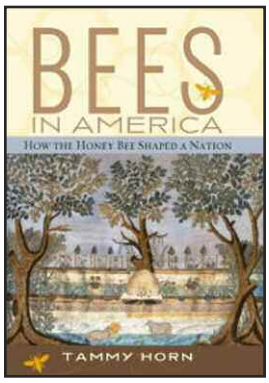


### What about Queens?

Hopefully you planned for splitting if using the overnight or walk-away methods and know when your ordered queens will be shipped or ready for pick up. The queenless hives will use larva moved in the splits to start new queens, but in an emergency situation (which is what they have after a split), they may not select the youngest larva. To produce a good queen, the larva should be only one or two days old. Older larva will be capped sooner and therefore hatch earlier than the better, younger larva. The queen from the older larva will kill those good queens developed from the tiniest larva and you could very well end up with a drone-laying queen. That's not a good place to be. So, plan ahead for this type of split. Make your splits a day or two before receiving your new queens. Before introducing the cages, carefully go through the queenless hive and remove all the queen cells. Otherwise, the bees may not accept the new queen.

In the swarm-control split, the bees have started those queen cells for the specific purpose of raising queens, so the larva was already being prepared on its first day. That means you can decide whether to let the hive raise a new queen or to introduce a purchased queen. You have a little time because after hatching at about day 16, the queen needs to prepare for mating. She will be ready for her mating flights about a week after hatching and should be laying eggs herself about 28 days after her own egg-life began. This gives you a window in which to order a queen, if they're available.

Using an open-mated queen (a queen that mates in the "wilds" of your area) has its benefits as well as risks. In central Texas a significant risk is that the queen will encounter drones with Africanized genetics. If you decide to let the hive raise a queen, pay very close attention to the characteristics of the brood. As nurse bees, they'll be relatively docile, but when they mature to guarding and foraging, if they show signs of defensiveness or outright aggression, replace the queen as soon as possible. Do not allow a hive to grow into a monster you can't approach.




### BOOK NOOK
### by Holly Medina

***Bees in America: How the Honey Bee Shaped a Nation***

Read about how honey bees have quietly influenced American values for centuries and how they provided a livelihood for immigrants looking for new opportunities. Bee hives symbolize a society working together for a common good and became a sign of colonization. This is sort of a history book about bees!



**Williamson County Area Beekeepers Association**
4355 County Road 110
Georgetown, Texas 78626