



# North Carolina **Bee Buzz**

The Official Magazine of the NCSBA

**Born & Bred Program  
Certified Honey Program  
Verifying Honey Authenticity  
Summer Conference Info  
And Much, Much More...**

**Summer 2018**



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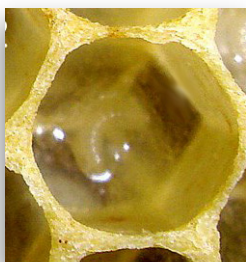
# North Carolina **Bee Buzz** Summer 2018



**North Carolina State Beekeepers Association**

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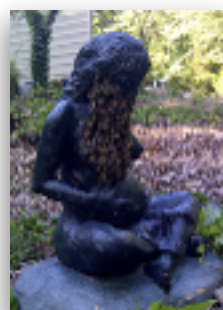
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**Verification of  
Honey Authenticity**

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**ON THE COVER:**

***Afterswarm on Fertility Sculpture in Apiary***

NCSBA State Meeting 2017 Blue Ribbon  
Mark Anthony Powers Photographer, Beekeeper, and Sculptor

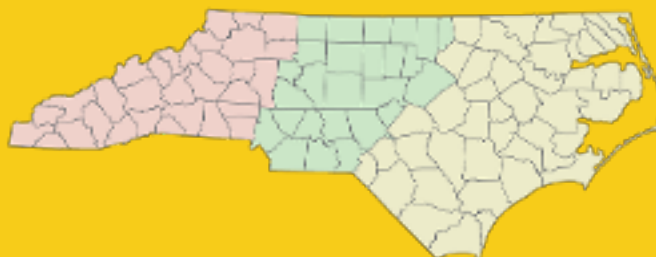
# North Carolina State Beekeepers Association



The mission of the NCSBA is to advance beekeeping in North Carolina through improved communication with members, improved education about beekeeping, and support of science enhancing the knowledge of beekeeping.

## 2018 Executive Committee

**President:** Rick Coor  
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**Membership Secretary:** Todd Walker  
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**Freshman:** *In Transition*

*Contact information for the NCSBA Officers and Regional Directors can be found in your Yellow Book Directory and on the NCSBA website [www.ncbeekeepers.org](http://www.ncbeekeepers.org)*

## From the *Bee Buzz* Editors:

***Bee Buzz* Story Submission Deadlines:** Summer: Mar 21 - Fall: June 21 - Winter: Sept 21

We enthusiastically accept article and photo submissions! Please send us your articles and photos of news and information you'd like to share about your local association's latest events, successes and failures, a biography on a long-standing NCSBA member you would like to honor, or a young beekeeper you'd like to see highlighted. All honey bee-related topics will be considered for publication. While we regret that we cannot always include every submission, we will do our best to print as space permits. Submit your article in .doc or .docx format. Photos should be high quality jpg or tiff format. Please include a caption for photos. Do not embed captions in your photos or photos into your news article, but submit these as separate files. If you do not have access to a computer, we will accept typed or clearly handwritten articles. Mail written submissions to: *Bee Buzz* Submissions PO Box 1771 Pittsboro NC 27312.

***Bee Buzz* Subscriptions:** Please direct subscription questions and address changes to [membership@ncbeekeepers.org](mailto:membership@ncbeekeepers.org)

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## NCSBA Communications - Stay Informed!

Beekeepers, please reference the text portions for the following announcements at [www.ncbeekeepers.org](http://www.ncbeekeepers.org)

- 1/11/18** Updated 2018 Chapter email list; new Membership Secretary; "Black Jar" honey contest
- 1/11/18** Submission deadline for 2017-2018 GAP notebooks; a new GAP guide for 2018-2019
- 1/21/18** Updating NCSBA Chapter contacts, information, and officers for 2018
- 1/30/18** Wolfpacks Waggle
- 1/31/18** Master Beekeeper Program schedule for Spring Conference – New Bern – March 1, 2, & 3rd 2018
- 2/10/18** Master Beekeeper Program Testing & Other Events Schedule at the Spring Meeting & beyond
- 2/27/18** Spring Meeting Silent Auction
- 4/2/18** Summer Meeting Advance Registration Now Open
- 4/4/18** BIP Sentinel Apiary Program for 2018



# Message From The President

by Rick Coor, NCSBA President

**As you read this edition** of the *Bee Buzz*, please pay attention to the information about the Certified Honey Producer Program (CHPP). There is something new: A Certified Honey Producer Locator Map and information about Intertek, a more advanced honey testing resource.

The Certified Honey Producer Locator Map has been posted online and a representation is featured in this edition. One reason the imported, adulterated and ultra-filtered honey still sells well at grocery stores is because often consumers cannot find genuine local honey for sale. With the locator map, prospective customers can find a local source for honey by clicking on a teardrop on the map where they can read contact information about the Certified Honey Producer. Certified Honey Producers can choose how much information to publish. It may be only a name and phone number, a name and website, or a name and physical address. Whether you sell at your own premises, at a business, a festival, over the phone or online, the Certified Honey Producer locator map can help you get more money for your honey. Give it a chance. Selling honey through the US Postal Service or UPS is not difficult or expensive so consider selling online. Some producers only sell online. Read the featured article by CHPP Chairman Kenny Jones or visit the Certified Honey section at the [ncbeekeepers.org](http://ncbeekeepers.org) website to learn how to get on the map.

The recent spring meeting was attended by two gentlemen from Bremen, Germany who represented the international food safety testing firm Intertek, Beat Herrmann and Dr. Diedrich Harms. Dr. Harms presented to us about the testing of honey and issues of the global honey market. Whether we realize it or not, honey from all over the world can be found most everywhere in the United States, even in the grocery stores of your town. It was interesting to learn that the countries of the European Union have much stricter food safety laws pertaining to honey, specifically, that honey which has been processed to remove the pollen can no longer be classified as honey. The USDA has no such rule. The lack of regulation coupled with the situation that no one is checking means that adulterated and processed honey has a free pass in US markets.

Real food safety testing is more than just testing honey to satisfy our curiosity about floral sources.

The science of honey testing is just that, a science.

Check out the article in this issue from Dr. Klaus Beckmann with Intertek and you will find that honey testing in Europe is serious business. The technicians at Intertek can test honey for adulteration with foreign sugars and for botanical and geographical origin; unless of course, the honey has been processed to remove pollen, a process that is more prevalent than we may realize. Further, Intertek can test honey for an array of antibiotics, pesticides and chemicals such as glyphosate. Why is all this significant for us beekeepers?

With access to advanced testing, the beekeepers of North Carolina can prove that their wholesome, home grown honey is just that: free from additives and chemicals and is locally produced. Advanced testing will help market our product. As for honey that we see offered for sale at half or a third of the price as ours, we can not only test it for floral sources (provided that the product contains pollen) but more importantly we can determine whether or not it contains antibiotics, chemicals or foreign sugars. Our customers need to know!

What about mite treatments? The case made for the contamination of honey and wax as a result of the use of miticides has caused many beekeepers to forego varroa mite treatments, and the results have been disappointing. Going forward, NC beekeepers can determine the results for themselves of responsible mite treatments by treating for varroa in accordance to the manufacturer's instructions and then having their honey tested for possible contamination.

The end result of the locator map and advanced testing? The customer can find and purchase local honey that is a genuine product, known to be free of adulteration or chemicals and one that sells for premium price. Thanks for reading-

## Born & Bred Queen Rearing Program Update

The spring of 2018 finds the beekeepers of the Born and Bred Queen Rearing program (B&B) endeavoring to apply some of the information presented to them in the B&B clinics of 2017 and the grafting skills learned during the recent hands-on grafting workshops held in conjunction with the recent Spring Meeting in New Bern.

This edition of the *Bee Buzz* features two articles in the ongoing B&B series. First we will hear from Etienne Nadeau, president of the Beekeepers of the Albemarle and B&B Chairman, who will report to us concerning the recent hands-on grafting workshops. Next, David Arnold, of the 5-County Beekeepers, will update us on the progress his club has made toward their chapter level queen rearing program.

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## In the Apiary: Summer in North Carolina

by Nancy Ruppert, Apiary Inspector, NCDA&CS

**Following a winter** of what seemed like heavier-than-normal colony losses, and the up-and-down temperatures of early spring (which is stressful for bees AND beekeepers), beekeepers in North Carolina look forward to late spring/early summer: our bees are very active and productive if they're healthy, and we get to enjoy some of the fruits of our labors. In most of our state, the heaviest honey production of the year is ready to harvest by late June, while beekeepers in the NC mountains and northern piedmont eagerly await the sourwood honey crop that bees are making during mid-June into July. Those beekeepers who want their choice frames of honey should harvest before the end of August, because the bees will usually start eating their stores by then and they won't know (or care!) which frames of honey the beekeeper planned to harvest. Because colony losses in NC were significant this past winter—unofficial estimate at the time of this writing is 35-40% of managed colonies—the honey crop might be diminished, which will likely push prices higher.

Growing one's apiary can be successfully done by splitting hives, if the bees didn't already split themselves (i.e., swarmed). In most of North Carolina, best results are obtained by splits done between mid-March and mid-August, weather permitting. If you like the genetic traits of any of your hives and want to save money, splitting those high-quality hives and letting them raise their own queens can be very rewarding. Consult your local experienced beekeepers for more tips on successful splits: there are important principles to follow, and I encounter many people

whose split efforts failed because they did not know or follow these important principles. Spring and summer are also the best times in our state to raise high-quality queens, and we now know that productive queens raised here in NC are priceless.

Summer can be challenging for NC beekeepers: pests and parasites like small hive beetles, varroa mites and wax moths are very active; nectar becomes scarce during late summer and some hives will need to be fed carbohydrates to survive; the heat sometimes becomes unbearable and bees (and beekeepers!) can get pretty grumpy. But if we want our colonies to make it through the next winter, we **MUST** prepare the hives during **this summer**, whether we feel like it or not. Bees follow a different calendar than we do, and **they will not wait on us to get the job done!** Managing pests/parasites (especially varroa mites), ensuring adequate nutrition, and confirming the queen's laying ability (and replacing her if she's failing) are critical to be taken care of during the summer—by autumn it might be too late to save the hive if there are serious deficiencies in these areas. Also, honey bees in NC are not enthusiastic about drawing out wax into comb after August, so try to help them accomplish this during the spring/summer by proper placement of frames of foundation and supplementing carbohydrates if incoming nectar is scarce. Proper storage of drawn comb after harvesting honey is key to limiting invasions by wax moths and/or small hive beetles. And last but not least: try to attend the NCSBA Summer Meeting during July 19-21—there is a fantastic lineup of speakers on tap, and the learning/networking opportunities are endless at these events.

Stay alert, stay cool, and Happy Beekeeping!



### NC Varietal Honey Needed

We are looking for varietal honey produced in North Carolina for a flavor profiling project. If you believe you have honey that is at least 50% from any given nectar source, please contact Suzy Spencer at [nchoneytasting@gmail.com](mailto:nchoneytasting@gmail.com). Even if you do not label your honey as a varietal, we want to hear from you if you are confident of the origin. Also let us know if you are interested in serving on the profiling panel. Depending on the response we get from the honey producers and potential profilers, we hope to assemble a panel at some point after the NCSBA Summer Conference.

# CYPRESS HIVES

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## 2016 and 2017 NCSBA Membership Numbers



### See How We've Grown!

The official membership numbers for the year are obtained in October before the processing of new memberships and renewals starts for the following year.

	<u>2016</u>	<u>2017</u>	<u>Net Change</u>
Annual:	4094	4318	+224
Commercial:	35	25	-10
Permanent:	286	338	+52
Life:	26	23	-3
Honorary:	8	8	0
<b>Total:</b>	<b>4449</b>	<b>4712</b>	<b>+263</b>



"Permanent" are lifetime memberships paid for by the member.

"Life" and "Honorary" are lifetime memberships awarded by the NCSBA.

**On February 16 and 17, 2018,** the Bayer Bee Care Center hosted a workshop with over 40 beekeepers from across North Carolina to discuss the hive scale research project, led by Annie Krueger. The project's goal was to use electronic hive scales to gain insight into how the timing and duration of nectar flows vary across the Piedmont, and within different landscapes.

After starting with a just a few beekeepers located in Wake, Johnston, Durham and Orange counties, Annie has recruited 55 beekeepers from 25 counties, and is contacted every week with beekeepers eager to get involved.



**February 16 Workshop at Bayer Bee Care Center**

After a successful pilot year, it was time to convene the participating beekeepers to gain feedback for the project's next steps. Each beekeeper shared their experience with the project and ideas for the future direction. Of course, this started with how every good beekeeping meeting begins: swapping wild stories from the bee yard! After hearing about all the swarms people have caught in different ways, similar to fishermen's retelling of their epic catches, we were ready to start talking about the project. Objectives discussed included data management, hive maintenance records, and communication. Moving forward we are focusing on two main tracks for the project:

### 1) Understanding impacts of management decisions on hive performance

- Multiple scales/apiary
- Detailed management notes required with some level of standardization
- Manipulating variables in the hive to see resulting effects on hive weight

### 2) Comparing nectar availability across landscapes in the state (previously it was only Piedmont but the project is expanding out to almost half the state!)

- One scale/apiary
- Increased diversity in locations (swamp, mountains, different cropland, coastal)
- For those interested, document bloom times for plants near the hives

Although there will be two different focuses for how the data will be applied, the data will all be generated in the same way, housed in the same place and available to everyone in the project. As opportunities arise, other possible opportunities include working with local universities and anyone interested in working with the dataset to dive deeper into both the landscape elements and weight data.



**February 17 Workshop at Bayer Bee Care Center**

It is because of the involvement of dedicated passionate beekeepers that this project can really provide insight to the North Carolina beekeeping movement. It is their feedback that is driving how the project moves forward, and we are lucky to serve as a platform for these innovative minds to provide their take on what is happening with their bees and what the weight data mean to them. And, as we expand to other counties, the hope is that these scale hives and passionate beekeepers can be sentinel hives and messengers for different regions to serve as indicators for when the nectar landscape is changing throughout the season. We will rely on the continued involvement of these folks to help us better understand the changing landscape! Follow the project at <https://tinyurl.com/yc5tzwnq>

# Wolfpack's Waggle: New Grant at NC State Explores Queen and Colony Exposome

by Dr. David Tarpy  
Department of Entomology & Plant Pathology, NC State University



**The grant will support** Joe Milone, a second-year doctoral student in our program, on his research investigating how multiple pesticides simultaneously affect queen- and colony health at multiple levels (individual and colony), and at different timescales.



**Joe Milone**

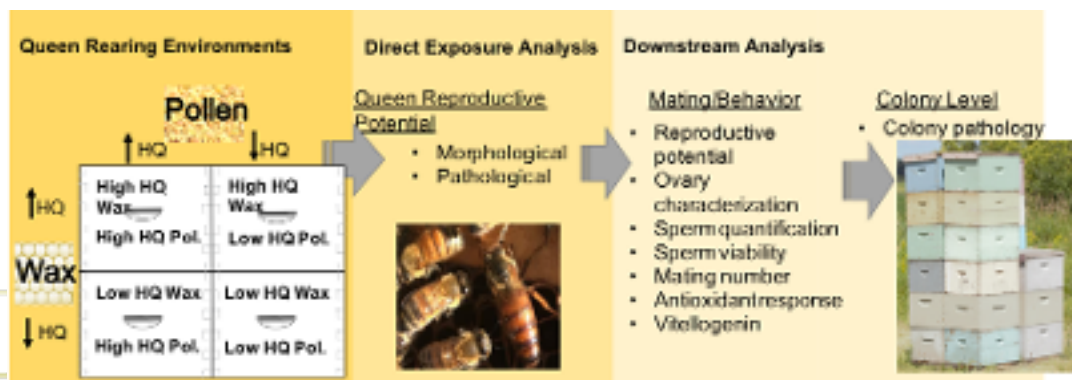
Pollinators are threatened by multiple stressors, including pesticide and disease exposures. A toxicological legacy of single pesticide response studies fails to accurately assess the implications of exposure from multiple chemicals in conjunction with disease. The exposome concept, encompassing the totality of exposures over a lifetime, can be used to provide new insight into pollinator stressor dynamics.

In our new grant from the Foundation for Food and Agriculture Research (FFAR), we propose a new approach to honey bee toxicology which examines the direct and downstream pathological consequences of realistic multiple pesticide exposure. Queens are central to colony survival and can serve as a new tool for studying the aftereffects of exposure. Using previous pesticide residue data from commercial colonies, we will rear queens in contaminated wax and pollen exposure environments. Each chemical combination is based on field relevant hazard quotients, summing total toxicity for each mixture.

Queen breeder colonies will either be fed pollen with or without the pesticide mixture, and queens will be reared on treated or untreated wax inside each colony. Exposed queens will be sampled upon emergence to understand the direct effects of exposure, while other queens will continue on to mating. Following mating, a portion of queens will be sampled to detect changes in reproductive fitness. Lastly, remaining queens will continue on to colony establishment, upon which colony-level disease response will be quantified.

This 1st objective queen exposome study will explore the complete queen life history and will elucidate the impact exposure may have on later established colonies. During queen assessments, we will sample pesticide residues in order to detect pesticide movement through a hive matrix and quantify the role of different pathways. Exposures from pollen and wax will be tracked, and pesticides movement from bee bread to royal jelly will be quantified. Objective 2 will use residue data from Objective 1 in combination with viral profiles from highly varroa infested colonies in order to test multi-stressor exposure tolerance across Conventional Commercial (CC) and Regionally Adapted (RA) within a high throughput in vitro study system. This will inform how intensive management has indirectly impacted selection for exposure tolerance. Viral sampling during this process will also elucidate how specific pathogens may exploit diminished immunocompetence from pesticide exposure.

Ultimately the proposed project lays the groundwork for a short-term queen assessment system, which links downstream colony fitness and population exposure tolerance to multi-stressor interactions. This will provide a novel insight into better understanding multiple stressor interactions in honey bees.





# NCSBA Born & Bred Program

**2018 Update**

by: Etienne Nadeau

**Upon the completion** of the initial B&B workshops in 2017, many beekeepers expressed the need for hands-on training. The Born & Bred Program held its first follow-up training with two workshops during the 2018 Spring Conference in New Bern. The workshops were held Saturday afternoon, and offered a hands-on grafting experience for those present. The participants were selected from individuals who had completed the 2017 Born & Bred clinic in Greenville and/or Statesville. A total of 72 members participated, with 36 in each workshop.

The workshop began with a video, made by Barry Cuthbertson and Rick Coor, demonstrating the grafting workstation and proper techniques for grafting. The video also provided an explanation of why a beekeeper should favor raising queens through the art of grafting rather than other varying options available. Upon completion of the video, participants moved to individual workstations for the hands-on portion of the training.

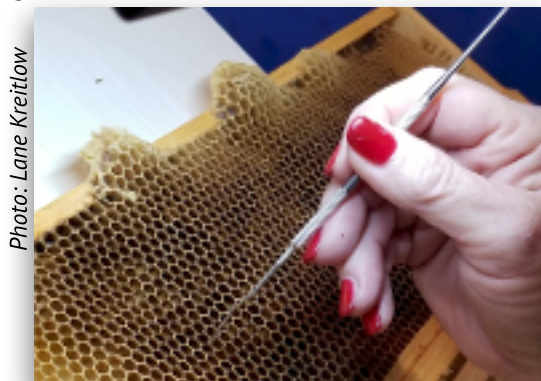


Photo: Lane Kreitlow

## "Hands On" Grafting

The classroom was surrounded by 16 grafting stations built by the new Chairman of Born & Bred, Etienne Nadeau. Each grafting station also had additional lighting, a grafting frame with cell cups, a grafting tool/needle and a frame of eggs and larvae ready for hands-on, practical application. Multiple instructors assisted each workstation to ensure participants were properly grafting the larvae and depositing them into the cell cups. This was an excellent and much needed experience for those involved.

Please keep in mind that the NCSBA Conference was on March 1st. The weather was still sketchy on the eastern part of the state, so finding frames with adequate larvae favorable for grafting was a challenge. A special thanks to Will Johnson and Colin Coor for providing sufficient frames for this workshop to be a

success and ensuring that each workstation had larvae to work with. An additional thank you to the instructors who volunteered their time and offered their expertise at various workstations in order to assist those grafting.

Hopefully with the completion of the Born & Bred clinic in Greenville and/or Statesville, and participation of the follow-up training in New Bern, more and more NCSBA members are choosing to raise North Carolina queens. As beekeepers, we should try to support these micro-breeders through encouragement and the purchase of their queens. North Carolina offers favorable weather for queen-rearing and the production of high-quality local queens adapted to our climate. Plans are being developed for additional follow-up training sessions, as well as another Born & Bred clinic in the future. Therefore, if you missed the 2017 clinic or the workshop in New Bern, be ready for the next opportunity!



Photo: Lane Kreitlow

Born & Bred Grafting Workshop at 2018 Spring Conference

# NCSBA Born & Bred Program

## Getting a Chapter Program Started

by: David Arnold



### 5CBA had six or seven

members who attended the NCSBA Born and Bred Workshops in 2017. When we won the GAP Chapter of the Year last year we decided to use a portion of the project funds awarded to us to purchase equipment that would support a Born and Bred queen rearing project at our chapter. Currently, we have 17 club members that expressed interest in being involved with the project.

Our project plan is to follow the NCSBA Born and Bred Queen Rearing Workshop manual as closely as possible. At the beginning of this year we formed a project committee and got to work.

To date we've accomplished the following:

- A 5CBA Born and Bred Committee organizational meeting was held at the Spring Conference in New Bern. We developed a project timeline, discussed resources that would be needed (equipment, "mass of bees", and people). We also discussed how to involve other 5CBA members, how we would measure success, and how we planned to document the project to share best (and probably some worst) practices with others.
- On March 10th we held an informational meeting with about a dozen project participants attending. The meeting also featured an equipment workday and was held at a member's home and workshop. We started with a 30-minute PowerPoint overview of the Born and Bred program to bring others up to speed on the breadth of the project and the queen rearing method we would be implementing. Then we had a workday to convert medium 10-frame hive bodies into double mating nucs and also assembled some frames. Since the program involves three distinct mating nuc groups, we decided they would be named Larry, Moe and Curly!
- On March 17th we joined the field day being held at the 5CBA club apiary to assess the hives there. One of our biggest concerns right now is ensuring we have resources (medium frames of open brood and open nectar/pollen frames) and a "mass of bees" to kick start our mating nucs. We plan to start with 12 mating nucs, four per group.

On the horizon:

- Have one more field day before our first graft to assess colonies and resources again, and possibly hold a grafting workshop.
- If the weather and resources cooperate, we plan to have our first graft day on Wednesday, April 18th.
- Introduce our first queen cells into mating nucs on Saturday, April 28th
- Rinse, repeat for six weeks to complete two full cycles with the mating nuc groups, which places the project end date near the end of June.

Stay tuned for updates...



Photo: Lane Kreitlow

David Arnold practicing grafting techniques

# BeeFeeders

## North Carolina Pollinator Plants

by: Ulana Stuart, NC State Extension Master Gardener

**Many North Carolina** beekeepers deal with the significant lack of pollen and nectar during July and August by feeding their honey bees. Here are a few plants that can supplement or even replace your bee feeding efforts. All of these plants will do best in full sun for optimal number of blooms.

The first midsummer and long blooming bee feeder plants to consider are mountain-mints (*Pycnanthemum* spp.). They are easy to grow native perennials which are drought tolerant and deer resistant. Mountain-mints are a great source of nectar and pollen when other sources have stopped flowering. Here are three easy-to-find mountain-mint choices:



**Silverleaf mountain-mint (*Pycnanthemum incanum*)**

**Silverleaf mountain-mint (*Pycnanthemum incanum*)** grows 2-4 feet tall, with evergreen basal leafy shoots and smells wonderful. It can spread aggressively by rhizomes and will seed around but both are readily pulled out without the use of garden tools. You should plant silverleaf where there is room for it to spread.

**Slender mountain-mint (*Pycnanthemum tenuifolium*)** grows 12-18 inches tall with aromatic needle-like leaves and is much less aggressive than silverleaf. It adds a nice texture and has many tiny white-pink flower heads that bloom profusely in the garden.

**Short-toothed mountain-mint (*Pycnanthemum muticum*)** grows 3-4 feet tall. It is a much tamer cousin to the silverleaf, with blooms that are white to violet. This one is my favorite. It prefers somewhat wetter conditions than its cousins.

**Buttonbush (*Cephalanthus occidentalis*)** is a large 6-8-foot green clump-forming native shrub that tolerates both swampy and well-drained conditions. The wonderful round 2-inch white clusters bloom profusely

for a long time and attract all kinds of pollinators besides bees, especially butterflies. It is easy to grow and is high in nectar and pollen. The only challenge is that deer will happily browse on this bush, so you will need to restrict their access.

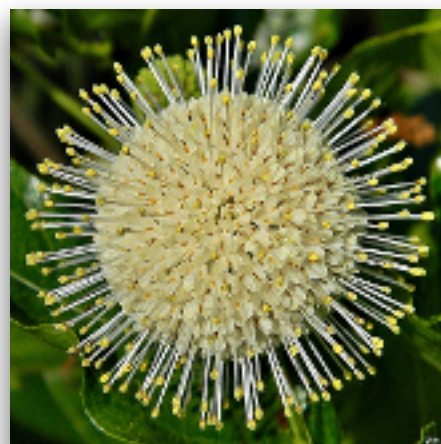


Photo: Bob Peterson

**Buttonbush (*Cephalanthus occidentalis*)**

**Hercules' club or Devil's walking stick (*Aralia spinosa*)** is a 10-20 feet tall shrub with a spreading, rhizomatous-suckering root which needs room to spread. It tolerates wet to dry soil conditions and blooms in late July or August in the Piedmont. I have seen an amazing number of bees feeding on this plant for several weeks. The flowers are small, white clusters that appear like clouds at the top of the large crown. The most curious features of Hercules' club are the stout spines that occur along the trunk and branches. These spines give this plant significant resistance to deer browsing. The only challenge may be finding a specimen to plant, though it is not rare at all. Check with your favorite plant nursery that carries a good selection of native plants, or online.



Photo: plants.ces.ncsu.edu

**Hercules' club or Devil's walking stick (*Aralia spinosa*)**

Continued on Next Page

**Milkweeds (*Asclepias* spp)** are native perennials that are high in nectar and provide a good amount of pollen. *All parts of milkweed plants have poison characteristics. They are toxic only if large quantities are eaten.*

Here are some easy-to-find *Asclepias* varieties:



**Butterfly weed (*Asclepias tuberosa*)**

**Butterfly weed (*Asclepias tuberosa*)** is drought tolerant with bright orange, red, or yellow blooms. If you cut them back (plus water them in a drought) they can

grow back and even bloom again. They do require good drainage and are about 2-3 feet tall with full sun.

**Purple milkweed (*Asclepias purpurascens*)** has very pretty balls of rich pink-purple that will form a spreading colony. They flower at the top of stems that are 2-3 feet tall, plus the leaves have an attractive red vein going down the middle of them.

For those of you with poor drainage do not despair! **Swamp milkweed (*Asclepias incarnata*)** is a very popular plant with medium-pink flowers that bloom at the top of the stems and is easy to grow. They are fragrant, especially when the sun is shining directly on them, and grow to 2-4 feet tall.

**Common milkweed (*Asclepias syriaca*)** has pink flowers that are sweet smelling, but it is a coarse plant that spreads very aggressively. It should not be in a typical garden but really would be best in a meadow where there is plenty of room for it to grow by rhizomes which go off in all directions. In that setting, I have seen them just bustling with activity including the Monarch butterflies. A word of caution: deer love browsing on these plants!

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## Master Beekeeper Program

by Doug Galloway Master Beekeeper Committee Member

**By the time this article appears** in the Summer 2018 issue of the *Bee Buzz*, the Spring Conference in New Bern will be a distant memory, and all eyes will be focused on the upcoming Summer Conference at Blue Ridge Community College in the Flat Rock/Hendersonville area. Still, I want to reflect on the excellent meeting we just attended and thank all those who volunteered to make it a big success!

The Master Beekeeper Program (MBP) had its share of volunteers, and thanks for all that you did. We had about 55 candidates take either Certified, Journeyman or Master written tests, and that many also took some portion of the Journeyman/Master practical test. Considering that 4 sections of the Journeyman/Master practical takes about 30 minutes to complete, this service to our members could not have been accomplished without many Master Beekeepers contributing their time to administer the tests.

At this writing, all of the tests have been graded and the candidates have been notified of their scores. Some achieved their goals, others have a bit more studying to do. Regardless of your test scores, the more you know as a beekeeper the better equipped you are to effectively manage your honey bees. A beekeeper approached me after the Spring Meeting and questioned if the Certified Beekeeper test was intentionally being made more difficult. My reply was “no”, and in fact, no effort has been made to make the

test more challenging. Reflecting on that question since the meeting, it occurred to me that the test *is* likely getting more challenging, just as keeping bees continues to become more challenging. With the ball always in motion as to how, when and what should be used to treat varroa mites, facing the many virus our bees must deal with, and consideration for herbicides and pesticides impacting our bees, it seems that the beginning beekeeper, to have a chance at successfully stewarding a colony of bees, must know a whole lot more than he or she did just a few years ago.

That same beekeeper suggested that, “We don’t want to scare our new beekeepers off!” I agree with that completely, but if they aren’t successful at keeping their bees alive, will they continue to purchase packages and nucs year after year, only to see them die?

The MBP Committee’s goal, like the mission statement of the NCSBA, is to educate. Our chapters annually offer beginning beekeeper classes to initiate beekeepers both new to beekeeping, and those looking for direction in difficult times. They are to be commended. Additionally, some of the best, most profitable beekeeping knowledge I have received has been in very small groups, 2, 3 or 4 beekeepers, talking about their issues, challenges and successes. Oftentimes, these conversations were and are impromptu meetings at the bee supply store, but many were over coffee or other libations at the local watering hole. I encourage you to explore every avenue, read periodicals, continue to attend and support your local chapters, share your knowledge and experiences, and we will all benefit.



### Get Ready for the 2018 Bee Bowl!

Start studying! The Bee Bowl will continue at the summer conference in Flat Rock in July. All chapters in NCSBA can enter a team consisting of 3 members and 1 alternate (optional) but must have 3 during the competition. All team members must be members of the NCSBA and registered for the conference. All team members must be listed by name, NCSBA membership number, telephone, and email. Must be a member in local chapter as of January 2018.

Teams will be randomly drawn and numbered 1 thru 8 for the competition. Number 9 and 10 will be selected as alternates in the case of a team withdrawing. Drawing for teams will be made at noon July 19, 2018.

To enter a team or ask questions call Danny Jaynes (919) 656-8714 email: [djaynes101@gmail.com](mailto:djaynes101@gmail.com) or Paul Newbold (252) 312-4629 email: [beefarmer1349@gmail.com](mailto:beefarmer1349@gmail.com)



**Innocence & Wonder** My granddaughter walked with me near my apiary. She saw a honey bee crawling slowly on the grass. "Why is this bee crawling on the grass?" she asked. "I think she is at the end of her life," I replied softly. "Ohhhhh, poor bee!" she said as she sat down on the grass and picked up the little bee on her finger to get a better look. I took this photo because it showed the wonder we all have when watching a tiny helpless creature that is quite a force in its youth and not so much at the end. Maybe my granddaughter wondered what the bee was feeling, or maybe she was trying to sort out what she was feeling in this fragile moment for them both. --**May Markoff**

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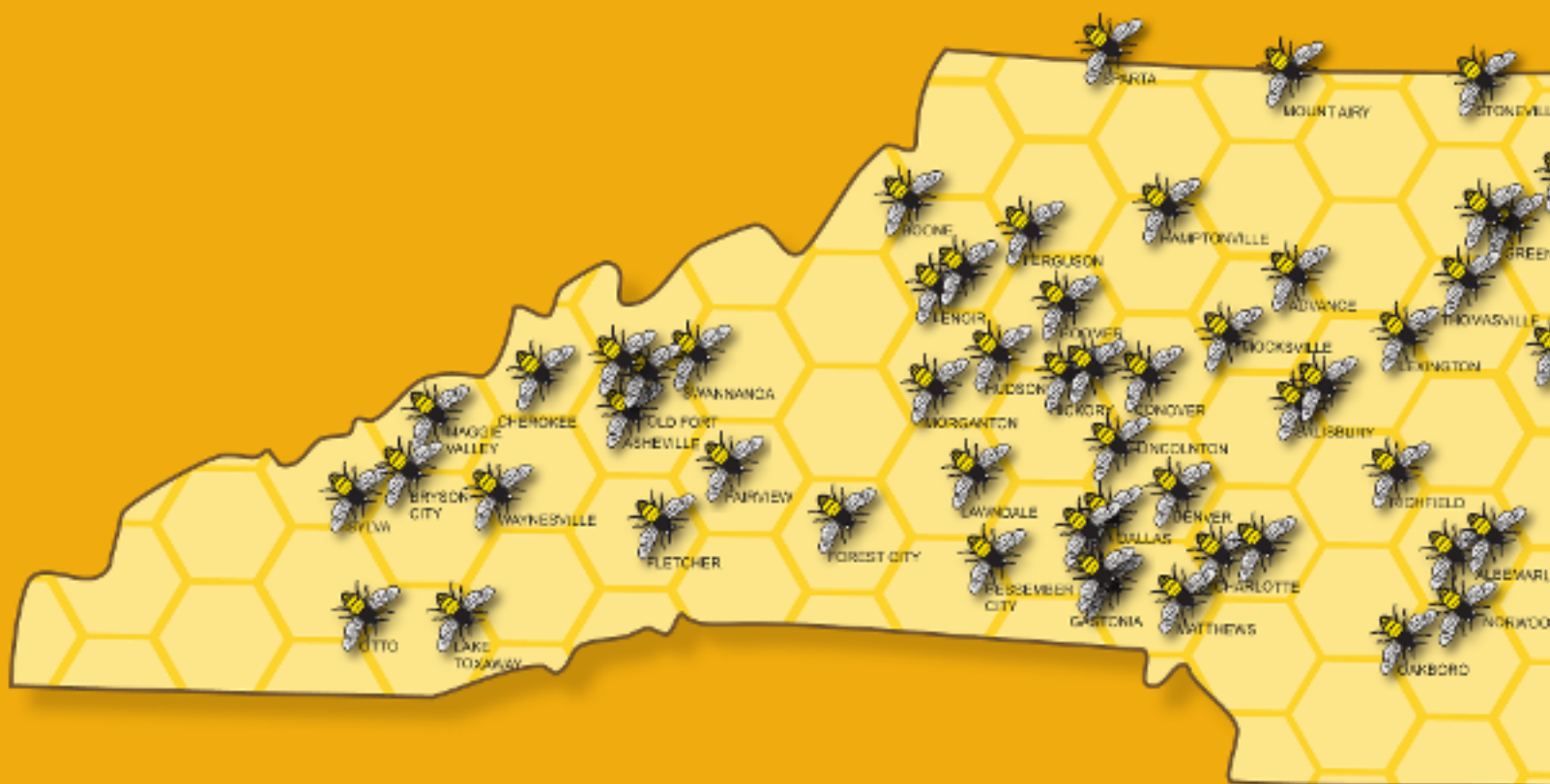
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# Certified Honey Producer Program

by Kenny Jones



**The newest addition** to the Certified Honey Producer Program (CHPP) of North Carolina has arrived! Visit [RealNCHoney.com](http://RealNCHoney.com) to find an NCSBA Certified Honey Producer in your area. There is a very strong demand for local honey. We are providing consumers with a way to find our producers not only through our registry, but also with our new Honey Locator Map.

We have come a long way since 2010, when Dr. John Ambrose prepared documentation titled "The North Carolina Honey Standard". It was presented to the NCSBA and adopted in 2010 in the absence of a federal honey standard. The footer on the last page quoted the former NCSU Apiculturist, Dr. Ambrose, as saying, "A great deal more sourwood honey has been sold in North Carolina than has actually been produced here. We hope the adoption of this standard will remedy that situation." There was no doubt that action needed to be taken, in order to serve and protect not only our North Carolina beekeepers who produce authentic North Carolina honey, but also the consumers of their product. The Certified Honey Producer Program is the NCSBA's answer.

The CHPP is the official honey marketing program of the NCSBA. The goals of the program are simple. We promote genuine local North Carolina honey that is produced by the beekeepers of the NCSBA. We also connect beekeepers with consumers who are looking to purchase local honey.

In the Fall of 2016, we announced a "Discover the Goodness" label and a new focus for the future of the program. Since then, we've had a 68% increase in participation from our producers. That is fantastic! We want more of you to join us.

Our focus is to promote the goodness of our North Carolina honey and its producers. Our producers are honest individuals dedicated to providing consumers with authentic North Carolina honey. This is a relationship of trust between the NCSBA, NCSBA Certified Honey Producers, and the consumers. We believe in getting to know your beekeeper. We are helping producers and consumers find each other.

Those interested in becoming a Certified Honey Producer must complete an application, available online under the Programs tab of the [ncbeekeepers.org](http://ncbeekeepers.org) website. The application requires a reference from a Certified Honey Producer, NCSBA Master Beekeeper,

Officer or member of the Executive Board of the NCSBA, or President of their local Chapter. All references must be in good standing with the NCSBA. Once certified, our producers are provided with a certificate that is effective for two years at a cost of twenty-five dollars, after which certification may be renewed. All new applicants will receive a "Discover the Goodness" license tag and samples of our "Certified by the NC State Beekeepers Association" oval stickers. Producers are then granted access to our selection of labels that are available through the NCSBA online store. Our oval yellow "Certified" stickers sell honey. They are identifiable and a sign to our consumers that we are committed to truth in labeling. Anyone can purchase a "Discover the Goodness" t-shirt or license plate. Support of the program and our producers is greatly appreciated!

*Kenny Jones is the chairman of the CHPP committee. For questions, email [certifiedhoney@ncbeekeepers.org](mailto:certifiedhoney@ncbeekeepers.org).*



Photo: Amy Gordon

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# Make it Stop!

by Randall Austin



*"You ought to have finished," said the King. "When did you begin?"*

*The Hatter looked at the March Hare, who had followed him into the court, arm-in-arm with the Dormouse.*

*"Fourteenth of March, I think it was," he said.*

*"Fifteenth," said the March Hare.*

*"Sixteenth," said the Dormouse.*

*"Write that down," the King said to the jury; and the jury eagerly wrote down all three dates on their slates, and then added them up, and reduced the answer to shillings and pence.*

*--- Lewis Carroll, Alice's Adventures in Wonderland*

## I read with great amusement a

recent *American Bee Journal* article where the author matter-of-factly advised new beekeepers that they should expect to have to feed their new bees "for at least a week." I think I've been fairly successful in convincing my beekeeping students that if they want their bees to survive (and hopefully thrive) in Piedmont North Carolina they must feed a whole lot more than that. Twenty... thirty... forty pounds of sugar can easily be provided to a new colony as it tries desperately to get its feet on the ground. But gee whiz, at 40 cents per pound, 40 pounds of sugar would cost us a whopping \$16! Is it worth it? Maybe we can let the measly population of bees in that package fend for themselves and if it doesn't work out we can start over next spring with another \$130 package. Hmm. That's a lot of math... where's my calculator....

I think many people have the misconception that our honey bees are wildlife, like butterflies or chipmunks, and so supposedly are in-tune with nature and shouldn't need any care. They don't understand that honey bees are not native to North Carolina (or anywhere else in the New World) and therefore there is no inherent expectation that they are at-one with the environment. In fact all grizzled old beekeepers around here know that Piedmont North Carolina is, relatively, a terrible place for honey bees compared to many other areas in the US. We only have one large and (mostly) reliable nectar flow in spring, a long, dry summer dearth, then a hit-or-miss small flow in fall. Piedmont beekeepers who don't feed sugar during hard times don't stay beekeepers for long.

When I explain all of this, most reasonable folks sign up with the program and become faithful sugar feeders. But then they say, "Randall, I've been feeding like you told me to. When can I stop?" I've even had people ask me this as they go into their second spring and have already put honey supers on their hives. The short answer to this question is, "Why are you feeding sugar to your bees in the first place? Like everything else you do in the bee yard, it should be for a reason. Have you met your goals? If so, then stop feeding!"

So what are we trying to accomplish by feeding sugar to our bees? There are at least three reasons to feed, each with its own rules, which we'll discuss in turn.

### Reason 1: Prevent starvation

This is obvious but it bears repeating. Buckets-full of nectar don't drip from our flowers year-round. Even if they did, honey bees cannot forage effectively when the temperature is too cold (below the low 50s). This is why the industrious honey bee prepares for food shortages by filling the pantry with carbohydrates that she has dried and chemically altered to give them a long shelf life.

If the cupboard is bare and a strong nectar flow isn't in progress, the hive is at risk of starving. It is important to realize that honey bees are pure Marxists: they operate on the principle of "from each according to ability, to each according to need." As such, we don't see half a hive starve; it is all or none. The risk of starvation is high when a colony has just been established (a new package or nuc) and has no stores; when the population is growing rapidly but the nectar flow suddenly slacks off (as happens in mid March); the summer dearth (July and August); and of course winter.

What are the signs that you need to boost a colony's stores? In the spring and summer, I like to see at least three or four full deep frames of honey or nectar at all times. Even if abundant nectar is coming in, a rainy day can disrupt the supply. I check periodically to ensure the bees are staying ahead of their consumption.

In fall, I like to see a 10-frame deep full of capped honey. This should be more than enough to hold a hive over until spring. If a hive is light, it is best to feed early and beef it up before cold weather sets in. Bees in winter cluster cannot collect and properly cure syrup.

### Reason 2: Stimulate comb building

The wax that is used for comb building comes from the bees' abdominal wax glands. It takes a lot of energy

in the form of carbohydrates to fuel the wax glands' production. It is said that it takes a frame of honey to produce a frame of wax.

Bees won't create wax unless there is a strong nectar flow going on, either natural or artificial. The best time to expect comb-building is during April and May. Any other time, you'll need to feed thin syrup (1 part sugar to 1 part water, or even a bit thinner) to try to coax the bees to make comb. Even in April and May, you'll want to feed small colonies (e.g. packages and nucs) that don't have large enough workforces to both forage and create lots of wax at the same time. We can't give them a hand with the wax creation but, by feeding, we can help them find abundant and easily obtainable sugar.

New colonies need to draw comb on the equivalent of 20 deep frames before the end of the season in order to have space to hold winter stores plus space for the queen to lay. If they don't have a full complement of comb completed by the end of the spring nectar flow (July 1st at the very latest), it can be a real challenge to get them to finish it off in time for winter. Feeding will be required.

Once a full complement of comb is drawn, this goal is complete.

### Reason 3: Stimulate brood rearing

A well-behaved hive will adjust brood rearing depending on the strength of the nectar flow and pollen availability. This is exactly what we want: we need lots of bees in the spring as a honey-producing workforce, but most of us don't want to have to support lots of deadbeat, do-nothing bees during times of nectar dearth.

However there are times when beekeepers may want to stimulate brood rearing ahead of schedule. These include building up hives in very early spring to pollinate early-flowering crops such as blueberries. Or we may want to create nucs for sale or apiary expansion so we need lots of bees early in the season for splits.

If you do have a need for lots of early bees, you must ensure that the hive has abundant nectar/syrup and pollen. You must supply both; they go hand-in-hand. Feed thin syrup (1-to-1 or thinner) and supplemental pollen. If you feed a pollen substitute rather than genuine pollen, make sure the bees are actually eating it rather than just dumping it out as trash. Note that small hive beetles love pollen too so don't feed more at a time than the bees can consume in a few days.

If you feed to stimulate brood production, you must keep it up until the natural nectar flow begins in earnest. Otherwise you'll be creating an unnaturally large population at risk of starving. You must also take

proactive measures to prevent swarming.

Most of us (including me) don't need to stimulate pre-season brood rearing in order to meet our beekeeping goals. Don't do it "just because" or you'll be creating issues that you aren't prepared for.



Photo: Randall Austin

**Carbohydrates (sugar) are the fuel for a honey bee colony's productive "engines." If circumstances are such that the amount of available carbohydrates is a limiting factor in a colony's growth or long-term outlook, wise beekeepers provide sugar to them.**

### How much is too much?

Can you feed too much syrup? Yes! If all the available cells are filled with nectar/honey/ syrup, brood or pollen, the queen will have no place to lay eggs. In spring, this will likely cause the hive to swarm. Other times of year, if the hive doesn't swarm, lack of space to lay will inevitably result in a dwindling population and a disproportionate number of aging bees.

So how much feeding is too much? I like to see three or so frames worth of completely empty comb (no eggs, brood, nectar/honey/ syrup, pollen) at all times as available space. If there are too many frames of honey/syrup, it is easy to fix the situation: take those frames out of the hive and replace them with empty comb or, in the spring, frames with foundation. Put the full frames in the freezer and save them for later when the bees' cupboard is bare.

### What should we feed?

Honey bees need sugar. They can make use of it in many raw forms; that's what they do for a living! Their sense of taste selects for gradients of "sweet"; they don't care where the "sweet" comes from. Bees are not food snobs.

Most hobbyists feed sugar syrup made from sucrose (table sugar) mixed with water. The traditional fall/winter mix is two parts sugar to one part water; it is difficult to get more sugar than that to stay in solution. Spring feeding is typically one part sugar to one part water, which is similar to the concentration in typical nectars. Thin syrup stimulates brood rearing and comb building.

Note that these proportions are not part of the US Constitution. They are only general guidelines. Close enough is close enough. The measurements work out roughly the same whether using pounds of water versus pounds of sugar or quarts versus quarts. If you cross the measurement units, 1-to-1 roughly means 10 pounds of sugar to 5 quarts of water.

The complex sugar sucrose is broken down into the simple sugars glucose and fructose by the enzyme invertase while the sugar is in the bees' honey stomachs. Some rich beekeepers buy very expensive invert sugar which is already broken down. Since the bees are perfectly equipped to do this themselves, I do not understand why they need help. I don't want somebody digesting my food before I eat it. Why would a bee?

High fructose corn syrup (HFCS) is commonly used by commercial beekeepers to feed their bees. They buy it by the tanker load and it is very convenient for them to use. Mixing thousands of gallons of table sugar into solution is a big chore; HFCS is already bee-ready.

Debate over HFCS versus sucrose sugar syrup pops up every few years, with the opinion about which is "best" changing as frequently as the weather. Who cares? It is all sugar, and that's what the bees need. As with just about everything else in beekeeping, the deciding factor should be, "What is more convenient for the beekeeper?"

Some beekeepers claim that real honey is the best supplemental food for their bees. Clearly we can feed our own bees' honey to those same bees, but it simply

isn't true that this is hands-down better than the alternatives. Issues with honey include:

1. Honey is a major vector for spreading diseases between hives, particularly American Foulbrood. If you do feed honey, only feed honey collected from your own apiary.
2. Honey contains many impurities, e.g. ash, which bees cannot digest. Too much ash in over-wintering hives can result in dysentery. Sucrose syrup, on the other hand, is pure sugar without any undesirable extras.
3. Educated beekeepers know that honey is only as good or bad as its nectar source. Titi and jasmine honey are toxic to bees. Goldenrod honey has a high ash content. The bee colonies a mile from my county waste-collection site enthusiastically collect sweet stuff from household garbage. When people say "honey is best", which honey are they specifically talking about?
4. Ironically, the purity of sucrose syrup is sometimes criticized by saying that it doesn't contain vitamins and minerals which bees need. However these are only present in minute, trace amounts in honey. Bees rely on pollen, not honey, as their primary source of vitamins and minerals.
5. Finally, the retail price of sugar is less than 50 cents per pound. The retail price of local honey is \$10 or more per pound. Need I say more?

### **Final word**

So when should you feed? Whenever you need to do so with respect to your goals. When should you stop? Whenever you have reached those goals. Study your hives and take it from there.

*Randall Austin is a NC Master Beekeeper who keeps a few honey bee hives in northern Orange County. He can be reached at [s.randall.austin@gmail.com](mailto:s.randall.austin@gmail.com).*



## **NCSBA Library Update**

Spring! Swarms and dead-outs and weak hives and hives that are jam packed full of bees- what are you going to do? Check out the NCSBA DVD collection, where we have an assortment of helpful information to help you at: <https://www.waynecc.edu/library/ncsba-beekeeping/>

Also, please keep your eyes open for any DVDs that would make a good addition to the collection. Let me know, and we will snap them up!

**Bob Kemper** NCSBA Librarian  
[Kemper27530@gmail.com](mailto:Kemper27530@gmail.com)  
919-731-2146

# Black Jar Honey Contest Report

## 2018 Spring Conference - New Bern

The inaugural NCSBA Black Jar Honey Contest (organized by Suzy Spencer) was a great success! Judging was open to all registered attendees. There were 43 honey entries, which required establishing ranges of 10-11 honeys to be judged by any given person. There were 15 judges per range in the preliminary round in the morning. The top three honeys from each range (total of 12) made it into the final round in the afternoon. Over 90 people judged the final round to arrive at the top three winners, who were presented ribbons. The winners and the counties in

which the honey was produced were: James Arnold (Craven County) - 1st place; Doug Galloway (Caldwell County) - 2nd place; and Mark Heuser (Rowan County) - 3rd place. Thanks to all who entered honeys and especially those who judged. Based on comments received, everyone enjoyed this, and we will try to have it again at a future Spring Conference. However, the Summer Conference features the regular honey contests. Check the NCSBA website at <https://tinyurl.com/ybdbqcgu> for the categories and rules and plan to enter.



(L to R) James Arnold (Craven County) - 1st place; Doug Galloway (Caldwell County) - 2nd place; and Mark Heuser (Rowan County) - 3rd place - Congratulations!



There were 43 entries from across NC in the contest. Over 90 people participated in judging for the final round.

## Bee Hive Thermal Industries, Breaking News, Saving Honey Bees Organically

*An organic and noninvasive solution in targeting and killing Varroa Mite infestations, that are killing honey bees, was developed by the joined forces of, Bee Hive Thermal Industries ([www.beehivethermalindustries.com](http://www.beehivethermalindustries.com)) and OVEN Industries ([www.ovenind.com](http://www.ovenind.com)), experts in temperature control.*

Even if you're not in the bee keeping business, commercially or as a Hobbyist, you may have heard that, "honey bees are in trouble". There are a few main reasons that we could list in this dilemma and most experts will most likely agree that the Varroa Mite is near or at the top of that list. Bee Hive Thermal Industries designed this Thermal System utilizing an industrial grade heater blanket and electronic controls which are easily installed and removed from the hive. The end goal of the product is to raise the temperature of the hive to a programmed temperature, killing the mites & hive beetles without harming the bees based on studies done in Europe & US. To see the game changing product in action, click the link and view the video. <https://youtu.be/D3t4G2Ws91o>

In the fight against today's Varroa Mites, beekeepers are often, if not always, resorting to pesticides as the solution. Bees have many other predators and hardships to endure, including weather related issues such as cold temperatures, moisture and diseases. The effect of the Mite on the overall colony is paralyzing to both general activity and honey production within the hive. This revolutionary product is showing positive results in killing and controlling mites and hive beetles, with only a few applications annually. For show listings click here <https://www.beehivethermalindustries.com/events/>

Bee Hive Thermal Industries, located in beautiful Pughland South Carolina, is to be recognized as a global leader in the design, development and distribution of organically suitable products for the bee industry globally. The company strives daily to provide unique and safe solutions for bee keepers everywhere, providing them with high quality, value and reliability. Caring for our bees is very important to the mission of Bee Hive Thermal Industries. Visit our website at [www.beehivethermalindustries.com](http://www.beehivethermalindustries.com)



# Greetings From Gold Star Honeybees!

by: Christy Hemenway

**First, let me tell you** how grateful I am to the NCSBA for the warm greeting extended to Gold Star Honeybees while we relocated from Maine to WNC in late 2017. We established a state membership, formulated an advertising plan to reach out to all of you, and were welcomed as vendors to the NCSBA state meeting held in New Bern March 1-3. Deepest thanks to everybody who was so supportive and helpful as we made the move. Migrating lock, stock, barrel and business from one state with the honeybee as the state insect to another with the same was challenging, but it was also fun and we documented the transition in our email newsletter as we learned about living in the mountains of WNC, and slowly revealed our initial new location, currently in Spruce Pine, NC. Look for updates in the future as we get our bearings and choose a permanent home.

Photo: Courtesy Gold Star Honeybees



*The most important thing about a top bar hive... is what goes on inside.*

Gold Star Honeybees has been an advocate for top bar beekeeping from our beginnings in 2007. So just what is it about top bar hives? The most important aspect of top bar beekeeping is simple: Let the bees make their own natural beeswax combs. That means there is no “one-size fits all” foundation being used and the bees do what they would do in the case of a wild natural hive found in a tree. And while that sounds like a simple thing, the ramifications are many. We call them the 3 C’s of top bar beekeeping:

- **Cell Size**
- **Comb Shape**
- **Chemical Contamination**

## About Cell Size:

When the bees are in charge of making their own wax, the bees determine the cell size. This allows them free rein and control over what is going on in the hive. When they need worker bees, they make worker-sized cells; when they need drones, they make drone-sized cells; and when they swarm, they are more easily able to make queen cells on the natural edge of the comb. This supports the genetic diversity provided by drones, as well as the natural reproductive method of bees.

In addition, when the bees determine the cell size, the cell size shrinks slightly. This makes for a shorter, faster gestation cycle for the bees, which lends a hand toward slowing down the successful reproduction of the varroa mite.

## About Comb Shape:

Before foundation was developed, bees hung down in “chains” and built their wax from the top down. The catenary curve shape of those hanging bees determines the gentle curved shape of the combs. This also causes the combs to hang completely plumb, an important consideration when siting a natural wax hive.



Photo: Courtesy Gold Star Honeybees

*Naturally formed combs from a top bar hive*

## About Chemical Contamination:

We live in a world nowadays where toxic chemicals pervade our environment and the waste products too often end up in landfills. Lots of eco-sustainable habits such as recycling have been put in place to combat the effects of these issues. Who would have thought that recycling could actually make a problem worse? Yet, once we began treating with chemicals for the varroa mite, recycling wax into new foundation meant that the foundation, even when brand new, still contains those same chemicals. This can lead to resistance in mites,

and sublethal effects on the bees themselves. Wax made by bees, for bees, “from scratch”, avoids this pre-contamination in the hive.

### One Last Note:

Foundationless beekeeping, the heart of top bar hive beekeeping, can be accomplished in any style hive – simply by eliminating the use of foundation, so don’t throw out your existing conventional equipment! Beyond that essential feature of the bees making their own wax combs, top bar hives allow for easy hive management for the backyard beekeeper largely because there is no heavy lifting involved – no towers of heavy boxes to lift and stack. For the beekeeper whose back may be saying “No more of this hard, hard work, please!” the ergonomics of standing upright to inspect a hive that stands at kitchen counter height are pretty pleasant.

Originally founded in Bath, Maine, Gold Star Honeybees was a beekeeping service – top bar hives were placed permanently at our client’s locations, and the beekeeper traveled to care for them. This in-depth field-testing of the Gold Star top bar hive design helped us refine the features of our flagship product. Then, in the face of the rising price of gasoline in 2009, the company changed over from being a beekeeping

service to top bar beekeeping equipment manufacturer. Along the path, we’ve offered many Weekend Intensive classes, the two “Thinking Beekeeper” books (*The Thinking Beekeeper* and its sequel, *Advanced Top Bar Beekeeping*) were written, an online class was created, and a TED talk was presented. True to the nature of beekeeping, where there is both a vast global and an intensely local focus – Gold Star Honeybees now also sponsors 60+ Facebook groups, creating a place for top bar beekeepers everywhere to connect, seek out information, and share their knowledge with others. You can catch all this and join your group at the CONNECT page on the website. Gold Star Honeybees has always been an e-commerce store, and you can find us online 24/7 at <https://goldstarhoneybees.com>.

In real time you can also find us “popping up” at events like the NCSBA meeting, the Mother Earth News Fair in Asheville, at Green Festivals – events where sustainability and connectedness is a key focus.

Once again, thank you North Carolina for the warm welcome, and we hope to see you at an event soon!

*Christy Hemenway is the owner/operator of Gold Star Honeybees. She can be reached at [christy@goldstarhoneybees.com](mailto:christy@goldstarhoneybees.com); 828-552-5225, x0. For more information, please visit [goldstarhoneybees.com](https://goldstarhoneybees.com).*



### Cabarrus County Beekeepers Present:

## Kim Flottum Editor, Bee Culture Magazine

When: August 11, 2018 9 AM – 3 PM

Where: Cabarrus Arena & Events Center  
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Parking: \$5.00 (Cash day of event)

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# Letters From Hawley Prindle

**TWO**  
by Hawley Prindle

## Spring was somewhat busy this year.

I was finally able to get Bernice to take a beginning beekeeping class. She and I both took the class – boy, an all-day class sure was a challenge to my derrière! I am trying to adapt to my new state of North Carolina. Bernice thinks I know all about beekeeping but I guess I still have a lot to learn.

We both took the test following the class. Both of us passed, but I left with a big question of my own. Why, after hundreds of years, have we made, *Two* the answer to the question *How many castes are found in a honey bee colony?* So, I started checking bee books to see what they had to say on the topic.

Our class text clearly gives the answer as *Two*. Every book in my book collection including the 1990's version of the Dadant *Hive and Honey Bee* book says *Three*. I then noted in my research that BBKA (that is, the British Beekeeping Association) has an examination board that governs testing for exalted titles in the UK. I guess those European beekeepers need to be able to put letters behind their name to be considered a competent beekeeper. Something like, **Hawley Prindle SRN, SCM, FIEE**. But, back to my missing the answer to the question. The British are the nobility in beekeeping and in 1991 the examination board accepted the zoological definition of *caste*: a form of social insect having a particular function. It has taken awhile for that definition to cross the Atlantic but when Bernice and I attended the Spring Conference in New Bern, I picked up the latest version of Dr. Caron's *Honey Bee Biology* and it now says *Two*.

So, when we take a beekeeping test, the answer to how many castes there are in a honey bee colony is **TWO!** However, those of us that have been around 50 years or more are hard to convince. *Three* has been recognized for over 100 years and I am sure the bees don't really give a d\_\_\_\_. But some people really get

hung up on people keeping bees for 7 or 8 years missing the question, like they don't know nothin'! So, if you take the test, be sure to answer with *Two*. You will be a winner if you do!

New beekeepers really face all kinds of problems before they even get that first package of bees. I had the pleasure of talking to a number of new beekeepers. I am a 10-frame Langstroth guy. The array of beekeeping equipment being displayed at the spring NCSBA conference was staggering. I am very opinionated! Fortunately, I have worked bees in the conventional Langstroth sizes. I understand the advantages and disadvantages of handling heavy boxes. I rather like all deep frames. It sure saves time when one is building equipment! But here I am getting old. It is hard to lift a full deep 10-frame hive body. But that's not the issue.

I saw a \$900.00 beehive at the conference. It looks like a Langstroth hive but with windows in the side of the boxes and frames made of plastic in the 2nd chamber above the brood nest. It comes with a crank- I was told it is used to release the frames holding the capped honey so the honey runs down tubes into jars. A lot of people were interested in it, so it appeared.

My thought was to the value of this hive after a year or so. I have run across beekeepers that get into beekeeping wanting to sell equipment for what they paid for it! (It's like buying a car and then deciding to sell it after you drive it off the lot.) Any beginning beekeeper in my opinion should start with basic equipment. The demand for used equipment depends on how it can fit into other beekeeper's equipment needs. After a year or so, a new beekeeper can then decide to venture into something not so traditional. Beekeeping is a learning experience as I have found out by making a number of mistakes, like missing that question on the test.

## Cooking With Honey Contest Summer Conference July 19-21

Ready, Set, Bake! The ever-popular Cooking with Honey contest will continue its long tradition at the summer conference in Flat Rock in July. Cooks of all abilities can showcase their culinary creations using honey. Entries will be taken in between **9:00 am -10:am on Friday, July 20, 2018**. Winners will be announced at the banquet on Friday night. Please visit [ncbeekeepers.org](http://ncbeekeepers.org) for a complete list of rules or call Elaine Styers at 336-688-4331 with questions

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# The Verification of Honey Authenticity

by Dr. Klaus Beckmann

Intertek Food Services GmbH, Bremen, Germany

## Honey is considered as a natural,

valuable and healthy product, which generates high prices on the market compared to other sweetener products. Beyond that, honey of specific botanical and geographical origins stands out from polyflora honey, as it usually possesses distinct organoleptic properties and can therefore attract an even higher price. In the European Union there is a legal standard which is valid in all member states. The Directive 2001/110/EC of 20th December 2001 relating to honey states that “the product names may be supplemented by information referring to:

- floral or vegetable origin, if the product comes wholly or mainly from the indicated source and possesses the organoleptic, physico-chemical and microscopic characteristics of the source,
- regional, territorial or topographical origin, if the product comes entirely from the indicated source”

In this context, it is crucial to determine the origin of honey in an efficient and reliable way. For decades the main approach to address this has been through microscopical pollen analysis, the so-called *melissopalynology*. This method is standardized and harmonized by the International Honey Commission, an institution that was formed in 1990 to create a world-wide honey standard. In contrast to other laboratory tests for honey, for example to determine quality parameters, residues of antibiotics or admixtures of foreign sugars, *melissopalynology* cannot be automatized and, moreover, requires staff, that are not only trained to perform these analyses, but also have years of experience. The analysis consists of preparing the honey sediment and afterwards the identification of pollen from plants from all over the world as well as other constituents of the sediment. But that is not all. After the identification, hundreds of pollen grains are counted, the percentages must be put into relationship, and only then the final conclusion can be made. Concerning this matter some scientific publications and, furthermore, a specific German guideline exist, where typical characteristics for many monofloral honey types are described. For instance, organoleptic properties, the minimum amount of pollen and the range for the electrical conductivity are laid down.

Additionally, the microscopical investigation is

combined with an organoleptic test. This organoleptic test, which is also conducted by the pollen specialists, is a very important criterion to check if the pollen spectrum matches with the appearance, odor and taste of a sample.

At Intertek Food Services in Germany, we have a strong team of experts working on honey pollen testing. A distinction is made between the determination of the geographical and of the floral origin, because latter is associated with a greater analytical effort. In particular cases with inconclusive results these findings are discussed inside the team.

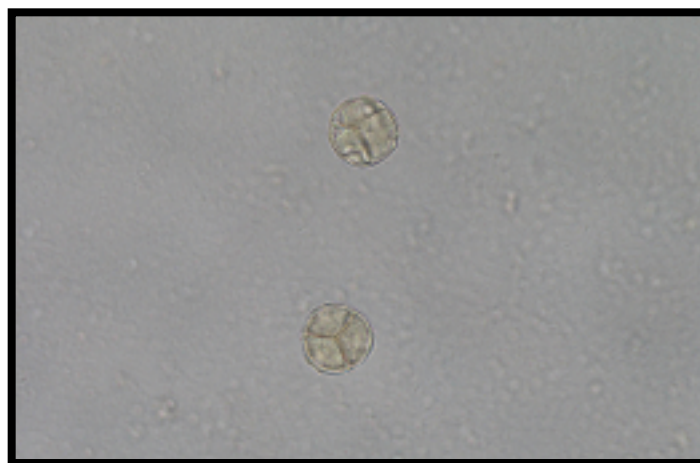


Photo: Courtesy Klaus Beckmann

**Example: Sourwood (*Oxydendron*) pollen, magnified 400 times**

But what about honey filtration? Some honey types tend to crystallize, hampering technological processing and leading to a turbidity of the product. The period when honey begins to crystallize depends on several factors, including the fructose/glucose-ratio or the concentration of certain sugars.

In the United States, honey is often treated in a way that crystallization nuclei are removed, due to its higher customer acceptance. In European law, filtration is also permitted since 2001, but such products must be clearly labelled as “filtered honey”. Nonetheless it has to be stated that filtered honey does not have any market significance in Europe.

The filtration process is usually carried out by heating the honey to about 80 °C (176 °F), the addition of filter aids and then pressing the honey through membranes, followed by cooling down the product to bottling temperature.

Of course, the determination of the geographical and botanical origin is hardly possible after such treatment. Most of the pollen is removed, as it does not pass the filtration membranes. This was one of the reasons why the European honey directive was much discussed when released in 2001, as unfiltered honey of high quality can be mixed up with filtered low-quality honey. This is, of course, not allowed, but cannot be detected with microscopical or other approaches.

When talking about honey adulteration, the main topic is the presence of foreign sugars. This problem exists for many years. External carbohydrates can be present in honey due to intentional admixtures of syrups as well as excessive bee feeding, whereby traces of the bee feeding material get into the honey.

It is fundamental to ensure that honey available on the market does not contain foreign saccharides. On the one hand, this is a question of maintaining good beekeeping practices, while on the other hand, additions of sweeteners are mainly conducted by third parties.

Nevertheless, if originating from feeding or blending, honey must not contain foreign sugars. The European honey directive defines that "honey shall not have added to it any food ingredient, including food additives, nor shall any other additions be made other than honey", when placed on the market.

Typical syrups added to honey are usually produced by hydrolyzing starch (originating from corn, rice or wheat, for example) or inverted sucrose (originating from sugar beet or sugar cane).

Intertek Food Services is experienced in honey adulteration testing for many years and has developed testing methods which are applied today as worldwide-standards.

When analyzing honey in regard to adulteration, there are several sophisticated approaches, which are able to screen for a large spectrum of possible adulterants, such as Nuclear Magnetic Resonance (NMR) or Carbon Isotope Ratio Mass-Spectrometry (IRMS). Moreover, specific methods are also offered, targeting for example honey-foreign enzymes, used for hydrolyzation, or untypical sugars.

As all these techniques represent an impenetrable jungle, Intertek customers are usually advised by our experts which methods are suitable for their samples, depending on the honey's origins and our expertise.

Nevertheless, there is still work to be done, as the honey world is facing new challenges concerning counterfeit honey every day. For this reason, Intertek as well as other institutes are still actively conducting research for new testing methods in order to verify the authenticity of this treasured product.



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# NCSBA 2018 SUMMER CONFERENCE

July 19 - 21



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**180 W Campus Dr, Flat Rock, NC 28731**

Make plans now to join your fellow beekeepers for the summer meeting to be held at a spacious and beautiful, green space venue in the Blue Ridge Mountains near Flat Rock, Hendersonville and Asheville. Experience three days of excellent beekeeping presenters, participate in informative workshops, meet and shop with the major purveyors of beekeeping equipment and supplies, and enjoy the company of old friends and make new ones.

## Featured Speakers



**Tom Seeley**- Cornell University- Author of *Honeybee Ecology* (1985), *The Wisdom of the Hive* (1996), and *Honeybee Democracy* (2010). Dr. Seeley's research focus is the social behavior of the honey bee.

**Frederique Keller**- President of the American Apitherapy Society- leading acupuncturist, medical herbalist will present programs on apitherapy which utilize bee venom therapy, honey, pollen, propolis, and royal jelly



**David Tarpy**- NCSU- Outstanding professor and researcher, NCSU Cooperative Extension State Apiculturist. Dr. Tarpy will present on his current research at NCSU and beekeeping issues in NC.

**Phil Craft**- *Bee Culture* magazine, author of "Ask Phil"



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**Cooking With Honey**

**Honey, Photography, & Products from the Hive Judging**

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# ADVANCE REGISTRATION FORM

## NCSBA SUMMER MEETING

Blue Ridge Community College, 180 W Campus Dr, Flat Rock, NC 28731

**JULY 19 – 21, 2018**

Please Print Clearly and Complete Items 1-9

**Mail-In Advance Registration Deadline: 11:59 pm Friday, July 6, 2018**

1. Member Name \_\_\_\_\_ Member ID # \_\_\_\_\_  
(Last) (First)
2. Spouse Name \_\_\_\_\_ Spouse Member ID # \_\_\_\_\_  
(Last) (First)
- Children (if attending) \_\_\_\_\_
3. Address \_\_\_\_\_  
(Street) (City) (State) (Zip)
4. Local Chapter \_\_\_\_\_ Phone ( ) - \_\_\_\_\_
5. Email \_\_\_\_\_ County of Residence \_\_\_\_\_

You may also register online at <http://www.ncbeekeepers.org>

### ADVANCE REGISTRATION FEES:

(WALK-IN registration fees at the Summer Meeting will be an additional **\$10.00** for Individual and Family registrations.)  
Registration fees are **non-refundable** after **July 6, 2018**.

		Amount Paid
6. Individual Registration (NCSBA member)	\$50.00	\$ _____
Family† Registration (NCSBA member)	\$85.00	\$ _____
*NON-NCSBA Member Registration	\$65.00	\$ _____
*NON-NCSBA Family† Registration	\$100.00	\$ _____
7. Donation to the Apiculture Program at NCSU (Optional)		\$ _____
8. Friday Night Festivity 6:30pm Qty: BBQ _____ Vegetarian _____ \$20.00 per person		\$ _____
9. TOTAL AMOUNT ENCLOSED (Check Made Payable to NCSBA)		\$ _____

Mail registration form and check to: **NCSBA, PO Box 99, Hurdle Mills, NC 27541**

\*Includes 2018 Annual NCSBA membership for the **primary** registrant. **South Carolina & Virginia Beekeepers** do not need to join the NCSBA to attend the 2017 Summer Meeting but are welcome to do so. If you are a SC or VA member and do not wish to join the NCSBA, select the NCSBA Member rate.

†Family registrations include 2 adults and their children under age 18 all living in the same household.

**NCSBA Members:** If you have **NOT** paid your 2018 Annual Dues (\$15.00), you may do so during registration and receive the NCSBA Membership price. You may register as an active NCSBA Member by providing your membership card or number when registering for the Summer Meeting. 2018 Annual Commercial Memberships are \$30.00.

**Attendees are responsible for hotel reservations. When registering give NC Beekeepers Group Code listed below.**

### Lodging Suggestions

Fairfield Inn & Suites Flat Rock	1.828.513.5100	Group code: BKAS	Rate: \$129	valid through 6/21/2018
Mountain Inn and Suites	1.828.692.7772	Group code: NCBA	Rate: \$121 – 155	valid through 6/20/2018
Mountain Lodge and Conference Ctr	1.844.220.0562	No code	Rate: \$116 – 161	valid through 6/20/2018
Quality Hotel and Suites	1.520.433.4616	Group code: UMAN	Rate: \$145	valid through 6/19/2018
Holiday Inn Express*	1.828.698.8999	Group code: NCB	Rate: \$178	valid through 5/19/2018

\*This hotel is closest to the college with little traffic

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