North Carolina

The Official Magazine of the NCSBA

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NCSBA Spring Meeting Local Queen Breeding Beekeeping Calendar: Spring

Spring 2024



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Sustainable Beekeeping Through Local Queen Breeding



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NCSBA Spring Meeting

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On the Cover:

Artificial Insemination Photo: Brandon Simmons

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.

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Webmaster Todd Walker webmaster@ncbeekeepers.org

From the Bee Buzz Editors:

Bee Buzz Story Submission Deadlines: Spring : Jan 14 - Summer: Apr 21 - Fall: July 21 - Winter: Oct 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.

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Message From The President

by: Rick Coor, NCSBA President

The late Dr. John Ambrose wrote in *A History of the NCSBA 1917-1997* by James Greene, JR. and John Ambrose that "as of 1978 North Carolina moved from fourth to third place in the number of honey bee colonies in the United States. The top five states are: California-504,000 colonies; Florida-356,000; North Carolina-190,000 colonies; Texas - 185,000 colonies; and south Dakota- 171,000 colonies". A year earlier Ambrose and Greene had worked in conjunction with legislators to pass the NC Bee and Honey Act of 1977. This was done to update an earlier law passed in 1939. Beekeeping was a valuable part of NC agriculture but county governments had received authorization to zone land twenty years earlier therefore sections to protect the honey bee industry were included in the law.

The NC Bee and Honey Act of 1977 is recommended reading for the beekeepers of NC.

The law begins with the words: the General Assembly hereby declares that it is in the public interest to promote and protect the bee and honey industry in North Carolina and authorize the Commissioner of Agriculture and the Board of Agriculture to perform services and conduct activities to promote, improve and enhance the bee and honey industry in North Carolina particularly relative to small beekeepers.

And it concludes with some limitations on local government regulation of hives to state that: with some qualifications, the law does not allow a county to adopt an ordinance or resolution that prohibits any person or entity from owning or possessing five or fewer hives. With some qualifications, a city may adopt an ordinance but must comply with all the following:

1) Any ordinance shall permit up to five hives on a single parcel within the land use planning jurisdiction of the city.

2) Any ordinance shall require that the hive be placed at ground level or securely attached to an anchor or stand. If the hive is securely attached to an anchor or stand, the city may permit the anchor or stand to be permanently attached to a roof surface.

3) An ordinance may include regulation of the placement of the hive on the parcel, including setbacks from the property line and from other hives.

4) Any ordinance may require removal of the hive if the owner no longer maintains the hive or if removal is necessary to protect the health, safety and welfare of the public.

The foresight of Ambrose and Greene in regards to the NC Bee and Honey Act has become a lasting legacy for the hobbyist beekeepers of NC. But it must be understood that the law primarily applies to beekeepers with five or fewer hives. As beneficial as the law is to beekeeping in does not give beekeeping a free pass in every situation; enter urban sprawl, city ordinances, home owner associations and county and city planning boards. Cities and towns have found ways to follow the law but still have rules of their own. Homeowner associations can ban beekeeping altogether. A city or town may require a permit and fee for a beehive and some do. Cities can regulate where a hive can be placed in a person's yard, require a fence or screen or require that a hive be removed altogether if it is deemed a public hazard or nuisance.

When the legislature in 1959 extended zoning powers to counties, it was determined that farming should not be subject to county zoning regulation. But what exactly is "farming" has become subject to debate and regulation. Things change when a beekeeping business (or another type of business) is qualified to gain status as a farm; the process is regulated to say the least. But there are advantages to operating as a farm. Farming allows for tax advantages that are too good to pass up. If you become incorporated as a farm you may have other advantages as well in regards to the permits for construction of farm buildings, grants and low interest loans. But be aware that farms fall into zoning laws as well. Therefore the rules are relatively simple for the small beekeeper with five hives but the rules for beekeeping as a farm are vastly different and constantly changing.

A city opting to adopt restrictions on beekeeping can arise from a single complaint from a citizen about hives near their property. I encourage all members to use their voice and collaborate with local officials and educate them on the benefits of bees, the NC Bee and Honey Act and provide solutions for potential issues with beekeeping in urban areas.

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by: Ulana Stuart, NC State Extension Master Gardener Volunteer

Honey bees have two compound eyes

that each contain blue, green and ultraviolet photoreceptors. These photoreceptors allow honey bees to see yellow, blue, green and ultraviolet (UV) scale. What does this mean and why should BeeFeeders pay attention? Honey bee vision determines how they see and which flowers they are attracted to. For example, blue, violet, purple and white flowers are easily seen by bees which makes them especially attractive. Honey bees also distinguish orange blooms, but the color red looks black to a bee making red flowers unappealing. The outer edges of some flower petals reflect UV light while the nectar-rich centers absorb UV. That dark center surrounded by a bright outline is an advertisement directing bees to the food source they are seeking.



A dandelion as a human sees it (left) and as a honey bee sees it through UV light (right).

Below are a few plants with attractive flowers for honey bees:

Virginia creeper (*Parthenocissus quinquefolia*) is a woody, deciduous climbing native vine. It grows rapidly up to 20 feet in length climbing with tendrils that have sucker disks and roots. It grows throughout the Southeast in USDA zones 4-10 in moist to dry soils that are fairly well drained. It grows well in part shade to sun. It can be used on heavy arbors, pillars and posts even brick-and-mortar walls as it can attach to broad

flat surfaces with its sucker disk tendrils. Virginia creeper is a double-duty plant that can also be used as a ground cover in a woodland garden. The greenish flowers are tiny and appear in flat topped clusters. They bloom in early to mid- summer for seven to ten days producing ¼ inch grapelike blue-black berries that are readily eaten by birds. This plant provides a good amount of pollen and nectar. The pollen pellets are light green. Finally, the striking fall color of Virginia creeper is the best of any vine with its yellow-red-purple leaflets.

Virginia creeper can be confused with poison ivy which has three shiny leaflets. To be safe, keep this short poem in mind, "Leaves of three, let it be; leaves of five, let it thrive."



Virginia creeper (Parthenocissus quinquefolia)

Virgin's bower aka Devil's darning needles (*Clematis virginiana*) is a native deciduous vine that produces clusters of small white flowers with each flower about an inch wide. Male and female flowers appear on separate plants blooming in late summer. This prolific plant is very effective for late-summer flowering. It is best to keep this vine in check by pruning it in late winter so it doesn't overwhelm supporting vegetation. Virgin's bower grows throughout the Southeast in USDA Zones 4-9 in moist soils and well drained areas

but tolerates seasonal flooding. Thrives in part sun to sun. You can grow these plants on supports or other low growing shrubs. This plant is a good pollen source and provides some nectar. The pollen pellets are dark yellow.

American wisteria (*Wisteria frutescens*) is a deciduous, twining native vine that grows in USDA zones 5-9 throughout the Southeast. It grows 20 to 25 feet long in moist, but well drained soils and tolerates some seasonal flooding. It grows well in part shade to full sun. Native wisteria grows vigorously and blooms after the first year. The pealike blue-purple flowers are fragrant and are densely arranged on the tips of short new branches that last about 7-10 days.They typically bloom in late spring but can also bloom sporadically later in the summer. Wisteria should be pruned in late winter for more blooms and/or to better fit into your landscape. This plant provides both pollen and nectar. The pollen pellets are creamy white.



American wisteria (Wisteria frutescens)

Note: American wisteria is NOT the highly invasive *Wisteria sinensis* (from China) which can kill trees and change the structure of a forest.

For more information on gardening use the North Carolina Extension Gardener Plant Toolbox at plants.ces.ncsu.edu



Spring Beekeeping in North Carolina



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In the Apiary: Spring 2024

by Lewis Cauble Apiary Inspector, NCDA&CS

Spring is near and I hope everyone has

enjoyed a little downtime over the winter to catch up on their reading and think about how they will improve their beekeeping in 2024. We are approaching the exciting start to a brand new bee year, as winter passes and spring moves in. Let's go over a few basic points that I hope you will pay attention to as your colonies head towards explosive growth.

"90 to 95% of the issues that I see are related to only three things"

As an Apiary Inspector I get to look at plenty of colonies, both good and bad, throughout the year. 90 to 95% of the issues that I see are related to only three things: Mites, feeding, and queen events that went sideways (mostly swarming). Let's look at these issues through the lens of early season management.

In my travels I notice that feeding is the biggest challenge as we move from winter to spring. I see problems with feeding too little resulting in starvation but more often I see folks, especially new beekeepers, feeding entirely too much. They are so concerned that their bees may starve to death that they overfeed. I also hear folks give the advice "Feed until they quit taking it". The problem with this is that feeding sugar syrup is not simply just adding calories to the colony. Sugar syrup very much stimulates the gueen to lay and for the bees to build brood. This is not necessarily a bad thing if you understand what is going on and you are needing to build brood to make early splits. Many folks are blindly feeding heavy coming out of winter (or even all the way through winter) causing the colonies to build up much earlier than needed. This early build-up can result in early swarms. Swarms can be risky for colonies. When a colony swarms, we expect the parent colony to successfully make a new gueen about 60 to 70% of the time. Not bad odds but that does mean that 30 to 40% of the time the parent colony fails to make a new queen. Many new beekeepers do not yet have the skills to manage these gueen events that have gone sideways and find themselves with laying worker colonies around late June or so. Finding that "Goldilocks spot" (not too much but not too little) can be a challenge and can take several years of practice to dial in. Of course, Mother Nature is always a wild card as well. In 2023, January was unseasonably warm, and our bees built up early. February and March were cooler than we might expect



and a season like this can lead to problems as well. Those colonies that built up nicely in January found themselves with many mouths to feed and not much nectar coming in the front door during February and March. They burned through food stores fast. Beekeepers needed to be attentive to hit the right spot (not too much and not too little). Always a challenge but for me it is what makes beekeeping fun! If you find that your bees have been swarming in mid-February, you may want to ease up on the late winter feed. In beekeeping we are always trying to find that sweet spot. We need a good population of bees in our colony to make a good honey crop but if we have too many bees in our colony, they will swarm during honey production. Don't let your bees starve but don't feed them so much that they are ready to swarm right when the nectar kicks in. The phrase Easier Said than Done comes to mind here.

That is a quick run down on feeding and queen events. The third item is varroa mites. Far too many beekeepers think of mites as something to worry about in August or September. I want everyone to know that mites are an all-season thing, and you need to be monitoring for them early in the season and continue that through late in the season. For me in the foothills at 900 feet of elevation I like to start my monitoring program in March. I monitor all my colonies at least four times per year. Many times, I have a hard time finding mites at that first monitoring in March but some years I will find that mites are already out of control in 10% of my colonies. Colonies out of control in March are going to be big problems later in the season if not identified and dealt with early in the season. Make varroa monitoring an integral part of colony management. It will pay dividends. If you are having trouble getting your bees to survive the winter, I would encourage you to double down on varroa monitoring. Start at population increase in spring and continue monitoring every colony about every six weeks until you put them to bed in October or November. You need good information to make good management decisions and good colony inspections that include varroa monitoring is how you get that information.

If you want to up your varroa monitoring game (and you should) contact your NCDA&CS Apiary Inspector. We are happy to help you dial in your monitoring program or help you troubleshoot other management issues. Call on us!

Visit **https://www.ncbeekeepers.org/** to find the Apiary Inspector assigned to your area.

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First, I want to thank the NCSBA

leadership for the opportunity to be involved in the Master Beekeeper Program.

The NCSBA Master Beekeeper Program (MBP) was established by the late Dr. John Ambrose in 1982 to improve beekeeping statewide and to provide valuable information to beekeepers and the public through outreach. The local chapters of the NCSBA are the backbone for teaching and mentoring, offering guidance, encouragement, and camaraderie through beginning to advanced beekeeping courses. The purpose of MBP is, and always has been, to educate beekeepers and the general public.

The first step in the program is the Certified level. Over the years chapters have developed and taught beginner's courses based on what chapter volunteers, or a committee, thought needed to be taught. This was often done without being familiar with the information that the student would be tested on as some other committee (the MBP Committee) was developing the test, based on what they thought needed to be taught. This has resulted in a total disconnect between the instruction and the evaluation and it is the beginner beekeeper who too often loses out in the end.

A recent survey by the NCSBA included questions concerning last year's beginner beekeeper courses and the number of new Certified beekeepers that resulted from the chapters' efforts.

The survey was sent to the contact emails provided by the chapter leaders but for various reasons only 48 of 83 chapters submitted a response. Of those that did, some offered no beginner course at all and others taught just a one-day class. There are many chapters that are doing a fantastic job of teaching beginner bee schools. Some chapters who did teach a bee school didn't follow through and offer a practical exam for the students to complete the Certified level and prepare to move on to the Journeyman level.

Realizing that not every beekeeper that is willing to volunteer to teach a bee school will have the time or resources to produce a program with PowerPoints and instructional materials, especially since the tests are being written by someone else, the MBP has developed an official course of instruction. PowerPoints, instructor outlines and student outlines have been developed for use by all chapters. Models of suggested syllabus are available as well to provide a guide for the course.

The MBP has chosen *First Lessons in Beekeeping* by Keith Delaplane as the official course material for the student to read and study for the Certified level beekeeping course. PowerPoints and approximate teaching times are listed below. Student outlines have been developed for each PowerPoint.

Official Curriculum Approximate Teaching Time

Intro to Beekeeping / History	45 minutes
Equipment	45 minutes
Products of the Hive	30 minutes
Keeping Bees in Populated Areas	30 minutes
Honey Bee Biology	2 hours
Honey Bee Pests and Diseases	2.5 hours
Introducing Package Bees & NUCs	45 minutes
Bee Species and Races	1 hour
Seasonal Management	1.25 hours

Teaching an official course allows every new beekeeper in the NCSBA, whether a new member of the largest chapter in the state or the smallest, to have the same information and the same starting point in the Master Beekeeper Program and the same chance of success in beekeeping.

Every beekeeper should want all new beekeepers to have the knowledge to recognize diseases and pests, to know how to complete varroa counts and what to do with the results. Beekeepers who are not taught enough to succeed as a beekeeper and control pests and diseases can become a detriment to all other beekeepers in their area. This is OUR fault as instructors and experienced beekeepers.

One-day bee schools, developed around the test, should not become the norm for beekeeping education

with NCSBA chapters. There is not adequate time for instruction, thought, and study or to address questions at a one-day school, especially when compared to a bee school offered over the course of three or more sessions of instruction and discussion. The MBP developed the official course in order for chapters to use as a bee school or as a reference for the school they already teach. Students need to know at the end of a bee school when the practical exam is scheduled for, whether they choose to complete the exam or not. Chapters need to offer it and provide the opportunity.



Beginner beekeeping courses were already scheduled for this spring. Waiting to roll out the official course until the NCSBA Spring conference in New Bern allows most beginner courses to be completed. Course material will be available for download on the NCSBA website and chapters will be kept updated. Thumb drives with the course material, the book *First Lessons in Beekeeping* and suggested syllabus will be either hand-delivered to chapter representatives at the Spring Conference or mailed to chapters after the meeting. If someone from your chapter did not attend the meeting, and you have not been contacted by the MBP, please email to mbp@ncbeekeepers.org and I will mail you the official course material.

Reviewing and being familiar with the PowerPoint material along with the instructor outlines, before presenting them to students, will allow for a better presentation. Student outlines follow the PowerPoints and allow students to take additional notes.

Each chapter will have the opportunity to suggest changes/updates to the information contained in the official Certified level course. All suggestions will be reviewed and some maybe acted upon, based on the committee's review. I look forward to hearing back from each chapter with your success in bee schools.

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Wolfpack's Waggle: BUILDING A BUILDING STEP 6: DEVIL IN THE DETAILS

by Dr. David Tarpy NC State Extension Apiculturist

We have come a really, really long way in the process of designing the new honey bee research & extension center on the Lake Wheeler Research Farm complex. Now that we have chosen the site (*Bee Buzz* Winter 2022), gone through the preliminary design process (Spring 2023), focused on the specific rooms and functionality (Summer 2023), begun discussions of landscaping (Fall 2023), and finalized the design and budget (Winter 2023), we're really getting into the nitty-gritty!

I'm a trained biologist, so nothing in my background has really prepared me for the intricate level of detail that goes into deciding every...little...thing about a building. I've always just taken these things for granted! I am continually impressed and genuinely thankful to bioloba Architecture and the Design team at NC State for their expertise, professionalism, and guidance. Going room to room, we discuss the various options of the floor finishes (some vinyl tile, some carpeted tile, and some sealed concrete for easy cleanup from beekeeping), walls (mostly gypsum wall board), and ceilings (some open but most acoustical panels). The discussion always centers around functionality so they can tailor each space to its primary purpose. It has been excellent to rely on biloba's experience, giving us some options with their pros and cons then allowing us to gravitate towards the best decision that optimizes utility while minimizing cost.



Figure 1: Lighting Floor Plan

Then comes all the other little things that go inside each room: furniture, equipment, layout, traffic flow. Part of this discussion, of course, is lighting (Figure 1), electrical outlets and other power needs, and the environmental conditions needed for each room. For



example, we will have a large screened-in porch so that large groups can watch someone work a hive of bees right outside without having everyone to veil up, but that doesn't need to have AC or heat like the open office and extension center. This process has been incredibly detailed, selecting the faucets in the bathrooms to the designs of the moveable tables to the cabinetry in the front of the auditorium.



Figure 2: Mechanical Duct Work

Then there's the main infrastructure of the building itself, including the electrical, mechanical (Figure 2), data, security, and other specifications that make a building work. It's been amazing to see the interconnectedness of everything and how one decision has ripple effects in so many other aspects of the design. I've really been out of my league in these conservations—while I feel like I can comment on what kinds of desks and tables might be nice in each room, I don't have direct experience in what kind of duct work might be best to both deliver conditioned air *and* be aesthetically pleasing with an open ceiling! Again, many thanks to the experts and team leaders for their expert and comprehensive knowledge in all aspects, it is clear this is not their first rodeo.

Now that most of the major (and minor) decisions have been made about the functional and infrastructural elements of the new building, everything seems to be coming together. We seem to be on track to start putting the building projects out for competitive bid with the goal of the initial ground-breaking for early this summer. Again, we thank the NCSBA and everyone who has worked behind the scenes to make this happen, and we will all be excited to see the final structure up and running!



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In beekeeping, the significance of good genetics cannot be overstated as it profoundly influences the overall health and vitality of the colony. The queen, being the primary genetic contributor, plays a pivotal role in shaping various aspects of the colony, impacting its disposition, resistance to mites and diseases, hygienic behavior, and more.

The genetic makeup of the queen bee is a fundamental determinant of the colony's health. The transmission of genes directly influences traits such as productivity, longevity, and adaptability. A well-bred queen passes on genetic material that enhances the overall robustness of the colony.

Traits Affected by a Queen's Genetics:

Disposition of Colony

The temperament and behavior of a honey bee colony are strongly influenced by the queen's genetics. Well-bred queens contribute to the development of calm and productive colonies.

Mite and Disease Resistance

Genetic factors play a crucial role in the colony's ability to resist mites and diseases. Selective breeding for mite-resistant traits can contribute to the overall health and survival of the colony.

Hygienic Behavior

The queen's genes influence hygienic behavior within the colony, affecting its ability to detect and remove diseased or infested brood. This behavior is essential for disease prevention and colony hygiene. Understanding and selectively breeding for these genetic traits are integral to sustainable beekeeping practices, contributing to healthier and more resilient colonies.

In North Carolina's beekeeping landscape, a significant proportion of queens are sourced from outside the state. This practice is common among beekeepers seeking to introduce new genetic traits or acquire queens from regions with favorable breeding conditions.

While importing queens can offer diversity, it also introduces challenges associated with potentially inferior genetics. Issues such as poor adaptability to local conditions, susceptibility to diseases, and reduced overall colony performance may arise when queens with inadequate genetic traits are introduced.

Emphasizing the importance of cultivating a local gene pool is crucial for addressing the challenges posed by imported genetics. A local gene pool ensures that the bee population is adapted to the specific environmental conditions of North Carolina. This adaptation can lead to improved resilience, disease resistance, and overall performance of honey bee colonies in the state.

Promoting and supporting local breeding efforts can contribute to the establishment of a robust and well-adapted bee population, fostering sustainable beekeeping practices tailored to the unique challenges and conditions of North Carolina.

Foothills Farm & Apiary, under the stewardship of Brandon Simmons, represents a third-generation beekeeping venture based in North Carolina. Managing nearly 100 beehives, the farm specializes in a comprehensive bee breeding program that integrates artificial insemination and selective breeding techniques. The focus extends beyond honey production, encompassing the cultivation of queens with superior genetic traits to promote sustainable and chemical-free beekeeping practices. The program, initiated six years ago and recently made public, aligns with the overarching goal of contributing to the health and resilience of honey bee populations on both a local and national scale.

Artificial Insemination Procedure:

Instruments and Tools:

Instrumentation for Insemination: The process involves specialized instruments such as an insemination syringe, microneedles, and a dissecting microscope for precision.

Insemination Chamber: A controlled environment is crucial; an insemination chamber is employed to maintain optimal conditions during the procedure.

Queen Handling Tools: Gentle and precise tools, including soft-tipped forceps and delicate brushes, are utilized for the careful handling of the queen during the insemination process.

Magnification Devices: Magnifying tools, such as magnifying glasses or additional microscopes, assist in ensuring accuracy and precision during the intricate procedure.

Queen Rearing Kit: This kit includes components like queen cups, cell bars, and grafting tools, essential for the initial stages of the queen rearing process before artificial insemination.

Incubation Setup: Following insemination, an incubation setup is employed to nurture and ensure the successful development of inseminated eggs into queens.

Recording Tools: Detailed records are crucial, and specialized tools for meticulous note taking and data recording are integral to track the success and outcomes of each insemination.



Insemination equipment

This combination of advanced instrumentation and meticulous procedures underscores the commitment of Foothills Farm & Apiary to elevating the genetic traits of honey bee populations through artificial insemination, contributing to sustainable and resilient beekeeping practices.

Artificial insemination in beekeeping:

Step 1: Preparation of Instruments and Tools

Gather the necessary equipment, including an insemination syringe, microneedles, a dissecting microscope, queen handling tools, magnification devices, a queen rearing kit, and an incubation setup.

Step 2: Queen Rearing

Initiate the queen rearing process using a queen rearing kit. This involves grafting larvae into queen cups and placing them in an incubation setup.

Step 3: Queen Handling

Using gentle tools, carefully handle the queen during the insemination process. Ensure a calm and controlled environment.

Step 4: Anesthesia

Administer a brief anesthesia to the queen using carbon dioxide or another suitable method. This ensures a relaxed state for the procedure.



Marked queen coming out of anesthesia

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Step 5: Insemination Chamber Setup

Place the queen in the insemination chamber, a controlled environment designed for the procedure, under a dissecting microscope.

Step 6: Microneedle Insertion

Using a microneedle attached to the insemination syringe, delicately puncture the queen's reproductive tract, and deposit the semen collected from a drone.



Up close: Instrumental insemination

Step 7: Incubation

Return the inseminated queen to the incubation setup, providing optimal conditions for the development of inseminated eggs into queens.

Step 8: Monitoring and Recording

Regularly monitor the progress of inseminated eggs and record relevant data. This includes success rates, insemination dates, and any notable observations.



Releasing a marked AI queen into hive with powdered sugar

Step 9: Queen Introduction

Once the queens have developed, introduce them to the respective colonies for mating and colony integration.

Step 10: Evaluation and Future Breeding

Evaluate the success of the artificial insemination process by observing the performance of the resulting colonies. Use this information for future breeding decisions.



Evaluating the laying pattern

It is crucial to follow ethical guidelines and maintain the highest standards of care and precision throughout the artificial insemination process. Always prioritize the well-being of the queen and the overall health of the bee colonies.

Venturing into queen insemination can be a transformative and rewarding endeavor for North Carolina beekeepers. The potential benefits in terms of improved genetics, disease resistance, and overall colony health are substantial. While startup costs may seem intimidating at first, the prospect of elevating the local bee population's resilience and contributing to sustainable beekeeping practices makes it a worthwhile investment. I encourage fellow beekeepers, as well as NCSBA chapters, to consider embracing queen insemination as a valuable project. Not only does it offer an opportunity to enhance the genetic diversity of our local bee populations, but it could also serve as an excellent and meaningful club fundraiser. By pooling resources and knowledge, North Carolina beekeepers have the potential to lead the way in advancing honey bee genetics and securing a more sustainable future for beekeeping in our region.



About the Author:

Brandon Simmons is the passionate owner of Foothills Farm & Apiary LLC, a third-generation beekeeper with over 55 years of collective experience. Specializing in a comprehensive bee breeding program, Brandon's dedication to sustainable and *chemical-free beekeeping practices has become the cornerstone of* his operation. Having managed nearly 100 beehives in North *Carolina, his six-year-long bee breeding program, incorporating* artificial insemination and selective breeding, aims to contribute to the resilience and vitality of honey bee populations. Brandon is an active member of the North Carolina State Beekeepers Association and regularly shares his expertise through lectures and presentations. For inquiries, collaborations, or to learn more about enhancing honey bee genetics, you can contact Brandon at *Foothillsfarmnc@qmail.com* or visit Foothills Farm & Apiary's www.foothillsfarmnc.com or on Facebook. Discover the buzz behind sustainable beekeeping and superior honey bee stock with Brandon Simmons.









Photo Contest!

The Surry County Beekeepers Association and local radio station 100.9 WIFM are hosting a photo contest to help promote the importance of honey bees. The contest starts April 1st and ends June 30th. Rules and guidelines are posted at www.surrycountybeekeepers.org. Entry submission will not go live until April 1st. Entries will be accepted by email and there will be a required, 250 to 350-word essay explaining the photo. When sending in entries, three things need to be sent in: entry form, photo, and essay. There will be five judges: Bob Binnie- Blue Ridge Honey Company, Gary York- 100.9 WIFM Radio, Lane Kreitlow- *NC Bee Buzz*, Jessica Flinchum-Photographer, Jim Hughes SCBA.

Prizes will include 1st Place- \$1,000, 2nd Place \$500, 3rd place \$250, along with a publication in Bee Culture and the *NC Bee Buzz*. The photo must reflect the importance of the honey bee as a pollinator. We would like to thank our sponsors: 100.9 WIFM, Blue Ridge Honey Company, H&S Bee Supply. If you have any questions, please contact Davie Simpson at faithapiary@yahoo.com.



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The first North American Honey Bee Expo was held Jaunary 4-6, 2024 in Louisville, Kentucky. It featured dozens of speakers, an AHSTC sanctioned honey show, a huge vendor presence, and the ability to network with beekeepers from across the United States and beyond!

North Carolina was well represented, with beekeepers from across the state attending.

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JANUARY 4-6, 2024

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Beekeeping in Central NC SPRING CALENDAR

by: Nancy Ruppert, Retired NC Apiary Inspector



This calendar (updated 2023) was designed for general beekeeping use in most of central North Carolina. Recommendations are based on average climate/weather conditions, and may vary with significant temperature changes. Those who manage honey bees for commercial operations may have different needs than those listed below. Details regarding bloom types/dates and pest/disease management are not included here due to space limitations; consult *reliable and current resources* for this information. This calendar is subject to being updated as new information becomes available. **Remember: honey bees often follow a different calendar than humans do, and you need not waste time trying to change the bees' instincts!!**

<u>March</u>

Pollen should be plentiful, and thin nectar (maple, redbud) available in most areas. *However*, many colonies will be outgrowing their honey/nectar supply and should still be fed carbs.

Attend *NCSBA Spring Meeting in New Bern March 7-9 2024, (*see <u>www.ncbeekeepers.org</u>), for exceptional learning, networking and good deals on beekeeping supplies.

Consider reversing hive boxes (Langstroth) if bottom box *completely* empty of brood; be careful not to break up brood nest.

Drone production increasing; start queen-rearing process when weather allows.

Hive splits can be successfully done in most areas this month.

Add at least one super and/or hive body if Langstroth; add bars/frames if top bar/horizontal. Wax building is usually vigorous, so give bees opportunities to build comb.

Swarming is underway in most areas.

Closely assess brood nest for disease (viruses, foulbroods) and act quickly if sickness found.

Varroa mite management should now be active, via assessment and other Integrated Pest Management efforts; most in-hive chemical treatments, if needed, should be *completed by early April. Follow label directions*. (See https://honeybeehealthcoalition.org.)

<u>April</u>

This is the busiest month for most NC beekeepers, and procrastinators will suffer!!

Nectar flow getting heavy in most areas; sugar water feeding should only be done for new colonies (splits, packages, new nucs) or those dangerously low on honey stores/foraging activity. Pollen flow should still be heavy.

Wax building is vigorous in healthy colonies, so have plenty of equipment *ready*. Some colonies will fill three or more supers with honey in April alone! Consider adding queen excluder(s) to keep brood out of honey supers.

Heavy swarming continues.

One of the best months in NC for raising healthy queens and making successful colony splits.

Look closely at brood pattern; promptly address issues of disease or queen failure.

Colonies should be very busy; closely examine those that are not.

Continue varroa IPM.

<u>May</u>

Honey production is heavy in most areas, so continue to have plenty of equipment *ready*.

Still prime time to make splits and raise or buy productive queens.

Heavy swarming continues.

Ensure steady water supply (birdbath, dish, etc.) for your bees so they don't bother neighbors.

Start/continue to plant warm-season annuals for nectar/pollen forage.

(See

https://www.ncbeekeepers.org/resources/flowering-plants and 2023-Top-25-Pollinator-Plants.pdf (ncsu.edu).)

Procure supplies to bottle honey, if not already done—late orders may not get filled in time!

Continue brood assessments for disease and queen failure; act quickly if problems.

Continue varroa IPM. Be watchful for **S**mall **H**ive **B**eetles (**SHB**s); insert traps if >20 SHBs seen.



Spring is swarm season in North Carolina



NEW BERN, NC

MARCH 7-9, 2024



2024 NCSBA SPRING CONFERENCE

More information at: www.ncbeekeepers.org

2024 NCSBA Spring Conference Featured Speakers



Dr. Olav Reuppel

"Olav Rueppell is a professor of honey bee biology and health at the University of Alberta, Canada. During the past 23 years of his research on honey bees, he has mentored over 100 students and published over 100 scientific articles. The topics that he is addressing include the behavior, life history, and genome of honey bees, as well as understanding stress, selective breeding, and the interactions of honey bees with the two major biological threats to honey bees: Varroa and viruses."

Jeff Horchoff



Bees have been a passion of mine for over 30 years, but that passion was never fully realized until I became the lone bee wrangler for a group of Benedictine monks at Saint Joseph Abbey in Southeast Louisiana, about 50 miles north of New Orleans. It was there that I began seeing bees in a different light, a marvel of God's creation. As I had every intention of becoming a monk, and I spent over 12 years discerning that vocation, the prayer life seeped into my everyday life, and this greatly influenced my beekeeping practices. As the fledgling Abbee Honey Operation at St. Joseph was just beginning, as well as my YouTube channel about the bees at the abbey, the flood of 2016 hit, causing over 33 million dollars in damage to the abbey and washed away every hive we had. I had to make the decision, to call it quits or move forward. Well, I chose the harder route and aggressively began building up colonies by doing removals, making splits, and catching swarms. And God blessed the proceedings. We went from zero hives in 2016 to over 200 in 2020. Then, after considering our exact needs of the operation, we scaled down to 150 which is where I want to stay. As I said earlier, I discerned monastic life for over 12 years, but the vows I took at the end of last September were not religious vows. Instead, they were marriage vows and I married Mona whom I met from my YouTube channel. Thank you, Jesus!



Randy McCaffrey

Randy McCaffrey has 33 years as a contractor and structural claims specialist. In 2010 at the age of forty he assisted his brother in the removal of a honey bee colony from an old furniture warehouse. This experience began his development of a fascination with honey bees. In 2010, armed with his knowledge of construction and his newfound fascination with bees he began removing and relocating feral bee colonies from commercial and residential structures along the Mississippi Gulf Coast. As of the summer of 2023, the number of cut outs (hive removals/relocations) he has done total nearly one thousand and swarm catches total approximately five hundred. Randy typically keeps forty to fifty colonies of his own but regularly works alongside large commercial beekeeping operations purely for the enjoyment and education to be gained. His family, including himself, his father, and his brother, keep approximately two hundred and fifty colonies in total. Much of his work with bee removals includes mite load and disease resistance studies in feral or otherwise chemically untreated honey bee colonies. He video records much of his work which he shares through social media platforms such as YouTube, Instagram and TikTok to help educate, entertain, and inspire current and future generations of beekeepers. His work can be found on most large social media platforms under the channel name 628DirtRooster with the tagline "Where Hobby Beekeeping Is a Way of Life". Randy along with his wife Elizabeth are continuing to grow their beekeeping and mentoring business. They recently added a subsidiary named Coastal Grove Bee Works which will focus on mentoring beekeepers, honey sales and a lady's beekeeping apparel line.



Hapbee Spring Meeting. Hapbee Silent Auction.

Our spring meeting is drawing near. An ideal and successful silent auction would include one or two donated items from each NCSBA chapter. Remember, the items don't need to bee related to beekeeping. Two of my favorite items last year were pottery and duck eggs! Bidding will start Friday morning and end after the morning break on Saturday.

All winning bidders will be texted. Please pay for your items by the end of the lunch break. Cash or check are preferred, but credit cards can be used. **Please do not take the bidding sheet**. If you need a receipt, we will provide one.

Instructions for Donations to Silent Auction:

1. Click this link or copy the link below for the Donation Form at http://tinyurl.com/ncsba-silent-auction

2.Print the bidding sheet.

3.Fill in only the lines marked with a check.

4.Leave each donation on the auction tables with the bidding sheet.

*If you are an artist, we have an artist statement sheet you can fill out and there is room for a business card.

Thank you for your donations!

- Pat Weisbrodt



NCSBA Library Update

LIBRARY SERVICES STILL ON HOLD - CHANGES COMING

I talked with Rick Coor the other day and he was very positive about what the library could become. Currently, the collection is still inactive but with a glimmer of hope on the horizon! We talked about how DVDs are becoming obsolete and the content in the old DVDs is not up to current practices. In the future, some NCSBA training information may be located on the internet. It could be housed in a virtual Fred Deer Library. The potential is there!

The NCSBA DVDs will remain at the Wayne Community College library until a decision is made about what we should do with the collection. For loan services to return the same as they were previously, the college would need to hire staff for the vacant positions as well as opt to continue servicing the NCSBA collection.

We are working on trying to create something that will be an excellent source of information for all NCSBA members. It looks like there will be some changes in 2024.

Bob Kemper, NCSBA Fred Deer Librarian

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Carla's Corner The Trinity of Beekeeping Part One: Nutrition

by: Carla Robertson, Henderson County Beekeepers Association Vice President

Hey again! Hope you all had a wonderful Christmas and start to your new year. There are a lot of different ideas and opinions around beekeeping. It can be very difficult finding what works best for you and what sources to listen to. Truth be told, what works for a California beekeeper with thousands of hives might not work for me, and what we do in our operation might not for you. This is where we all must practice discernment. That said, there are a handful of things we MUST get right. These include the trinity of beekeeping: Nutrition, Mites, and Queens. This year my column will be focusing on these three essentials.



Nutrition: If you ask most beekeepers whether they've lost a hive to malnutrition, I'm willing to bet most will say, "Yes!" We are blessed to live in an area that has a large variety of plants that provide either nectar or pollen. Of course, we have dearth periods, and some years aren't as good as others. Normally, most North Carolina beekeepers have a full buffet for the bees waiting just outside the entrance reducer. A strong nectar flow can boost cleanliness in hives, stimulate the colony and help reduce brood diseases. There are times however when we all should use supplementary feed to provide the best nutrition for our colonies.

So, let's talk about supplementary feed. A honey bee's favorite food is sucrose, a sugar found in abundance in nectar. Honey on the other hand, is mainly fructose (like corn syrup) and glucose with only small amounts of sucrose. During a good nectar flow, queens will be stimulated to lay beautiful brood patterns, and wax production will also increase significantly. As beekeepers, we can stimulate our hives to do these tasks by feeding thin sucrose syrup made from table sugar. Fructose is mostly for putting weight on our bees in preparation for the winter months.

There is a lot of controversy around pollen patties. Not only are they pricey but they also can be a nursery for small hive beetles if not properly used. But without a proper source of pollen, your colonies will plummet. So then, what should we feed and when? There are a dozen answers and arguments I could give you, but I think it would be better if I tell you what we do in our operation and allow you to take what you can from it.

Starting in January we feed our hives a 1.5:1 trickle syrup (1.5 parts sugar to 1 part water) though bucket feeders. Trickle feeding is when we slowly start feeding thin syrup. We do this by only adding two holes into our bucket plugs. This is meant to start the stimulation of our queens but also keep our hives from starving. It is extremely important that we keep an eye on hive provisions in the winter/spring. We will also add Global Patties pollen supplement bee food, to provide a good source of protein during the brood build-up (we will only add as much as they can eat within a few days). Also, keep in mind that during the warmer days your winter bees are flying to get resources. BEES THAT FLY ARE BEES THAT START TO DIE, so having food available for your bees close by is a huge help during this important time. We will continue to feed 1.5: 1 syrup throughout February. This is the beginning of our nuc season, and we are trying to stimulate our queens as

NC Bee Buzz - Spring 2024



much as possible during this time. We will feed them as much as they can eat but will keep a close eye on backfilling. We want the queen to have plenty of room to lay. In our area, the tulip poplar will begin around the first week of May and end the second or third week of the month. We will start splitting our colonies the first week of June and will immediately feed them 1:1 syrup to promote as much growth as possible. We will not feed our hives kept for sourwood as we are aiming to get a pure product and would never want to sell honey that could be tainted with sugar syrup. Sourwood starts around the first week of July and lasts two to three weeks.

After finishing our first round of formic acid for varroa mites, we will feed 1:1 syrup as well as Global Patties until the end of September. We plan to have all our feeding done by the first week of October. If necessary, we will switch to 2:1 syrup or fructose and heavily feed until the end of the month. That will conclude our feeding for the year.

I hope hearing our feeding plan will continue to help you in your own apiary!

Passing the hive tool, Carla





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