The Bee Line

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Successfully Managing and Wintering Single Brood Chamber Hives

by Jason Peters, Maine Bee Company

I am often confronted with questions about how I am able to successfully keep colonies of honey bees in single brood chambers and how I overwinter them. Prior to getting into some of the details of this management system, I would like to mention that I was first exposed to single brood chamber management years ago by working with a commercial beekeeper who had experience managing many colonies this way for many decades. The experience gained from working with that person as well as others has significantly impacted the way that I continue to keep my bees today.

Now for a bit of history. Despite the increasing popularity of the internet and social media platforms, this style of management is not new and has been around for quite some time. Single brood chamber management was used by Brother Adam (1898-1996), a Benedictine monk of Buckfast Abbey and developer of the Buckfast strain of bee. He began managing his bees in single brood chamber hives back in 1915. Being that the Buckfast strain was so prolific, Brother Adam found that he needed to increase the size of the brood chamber from the common dimensions of the British National Hive and eventually chose a modified Dadant of larger dimensions that held 12 frames. This hive was massive at 20” square and approximately the depth of a standard Langstroth deep and shallow combined.

Managing bees in single brood chambers has also been popular since the 1970s in some of the western provinces of Canada such as Alberta, Saskatchewan and Manitoba, eventually making its way to eastern provinces such as Ontario and Quebec where some of the larger commercial operations manage thousands of colonies this way. It is still gaining in popularity across parts of Canada and the USA.

As this is becoming more popular, I have been receiving a lot of questions pertaining to this system of management. In hopes of providing some clarity and alleviating some confusion, I would like to give a brief overview and description of what single brood chamber management is and outline a few of the pros and cons to this style of management that aren’t often discussed but I feel are important to understand should one be researching or contemplating using this system of management.

As a basic overview, single brood chamber management is a system of management where the queen is continuously isolated to one box (single brood chamber) where all egg-laying and brood-rearing takes place. As the colony expands and there is a need for more space to store incoming nectar/honey and to relieve congestion in the brood chamber, additional boxes (honey supers) are added on top. These boxes (deep, medium, shallow) are placed directly above a queen excluder to prevent the queen from having access to these boxes while continuing to isolate her to the one box below (single brood chamber). Recently there have been some attempts to change or re-define this system of management to include the use of a second brood chamber for part of the season for various reasons. If a second box is added where the queen has access to lay and brood-rearing can take place (even temporarily) the system of management is altered and represents an entirely different approach to managing bees where many of the benefits which are outlined below are no longer applicable.

This photo illustrates a good concentration of brood on the frames and efficient use of space
Photo courtesy of Jason Peters

One example of the effects of such changes is that more nectar and honey are interspersed amongst brood frames and brood is no longer as concentrated on those frames. This can lead to the bees not utilizing their space as efficiently for the remainder of the season potentially causing issues with late-season swarming and them not setting up their nest for efficient or optimal wintering. While making substitutions or changing the set up while managing this way may seem like it can make things easier on the beekeeper temporarily, it can also impact the way that

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President's Message

Beekeeping regularly challenges us with situations that require us to think on our feet and make informed decisions. Hive inspections are usually uneventful, with everything looking in good order, but there will inevitably be the day when we have to do some mental juggling and speedy action-taking. In those cases closing up the hive and pondering a solution for the next few days isn't an option.

A common example is discovering that the brood nest is being back-filled with nectar. That could mean adding more supers; pulling some frames of brood out to put in a weaker hive; getting some frames of drawn comb in there right away; checking for eggs in queen cups; pulling together equipment to make a split. Another situation might involve a queen who's not laying well, in which case we need to examine possible causes and solutions – is she poorly mated or is it because there's a lack of nectar due to a dearth? Do we let her be, introduce a new queen, or remove her and let the bees raise one themselves? Will feeding the colony syrup help get her back up to speed? Should the declining population be merged with another colony?

Experience and education, the primary drivers of our management strategies and actions, both take a while to acquire. Less seasoned beekeepers can beef up in the meantime on essentials such as "bee math." An invaluable tool, it documents the life cycle of honey bees and is the basis for all critical thinking where queens and swarming are concerned.

Betterbee magazine's June 2019 newsletter has a well written article called "Bee Math – the Queens' Rules." Michael Bush's excellent Bee Math page on bushfarms.com poses questions and answers based on age and status on certain days of a queen/drone/worker's lifespan, such as: "If a queen is killed and the bees raise a new one, how much brood will be left in the hive just before the new queen starts to lay? None. It will take 24 or 25 days for the new queen (raised from a four day old) to be laying and in 21 days all the workers will have emerged and in 24 days all the drones will have emerged."

Keep an eye out for emails with links for upcoming MSBA webinars. On April 6th Karen Thurlow will be presenting "The Next 42 Days with Your Colonies" and on May 16th Jerry Hayes, Editor of Bee Culture magazine will be with us for "How Many Colonies Do You Have and Then What?" The MSBA website also has abundant content for learning available through members-only access to archived webinar recordings:

2022
March 22nd: Landi Simone: "Products of the Hive"(generously sponsored by Maine Bee Company)
February 28th: Emma Walters: "Managing Varroa: Insights from the NYS Beekeeper Tech Team"

2021
November: "Thermoregulation and Ventilation" with Bill Hesbach
September: "A Fall Beekeeping Smorgasbord" with Karen Thurlow
August: "Fall Varroa Mite Management" with State Apiarist Jen Lund
July: "Beekeeping 360" with Dr. Medhat Nasr
June: "Post-Summer Solstice Nucs for Overwintering in Maine" by Carol Armatis
May: "Nuc Installation and Spring Splitting Strategies" with Lincoln Sennett, Swan's Honey
April: "All You Ever Wanted To Know About Swarms" with Jen Lund, Maine State Apiarist
March: "Queen Bees and Spring Buildup" with Karen Thurlow

2020
September: "Tips and Tricks of Honey Harvesting" with Rick Cooper
August : "What You Should Be Doing Now: Summer/Fall Edition" with Jennifer Lund
June: "Making Splits for Overwintering" with Erin Forbes
March: "What You Should Be Doing Now: Spring Edition" with Jennifer Lund
February: "EAS Honey Show Primer" with Brutz English

Plumbing Antifreeze Alert – in early May of last year I received a call about bees in a summer home that was being opened up for the season. When I arrived there were honey bees flying in and out of upstairs windows that were opened to air out the house. There were a lot dead ones on the floors and windowsills. I looked and found no sign of a nest including the attic. The owners said they hadn't used any scented cleaning products. I noticed most of the incoming bees were heading for the bathroom, where I discovered traces of pinkish stuff on the shower floor. It was plumbing antifreeze (the supposedly non-toxic version). The plumber had been there earlier to turn on the water, and had flushed it out from the drains, leaving some behind. A few bees must have discovered it and then headed back to their colony to do a waggle dance about the sweet tasting pink goo, leading to quite a few deaths. Please alert anyone in the vicinity of your hives who is involved in the opening of seasonal homes about this.

Judith Stanton

Continued from page 1

Single Brood Chamber Hives...

bees perform long term. As the system is altered and the configuration is changed, the bees and beekeeper will need to respond to those changes in order to meet the needs and demands of the colony.

Pros:

Inspections Performing routine inspections becomes faster and it is significantly easier to determine queen status, colony performance and colony health. This results in the likelihood that colonies will be inspected and taken care of as basic tasks can be accomplished more efficiently.

Monitoring Varroa monitoring/sampling becomes easier as you are more likely to successfully find your queen during these inspections leading to increased use of more accurate sampling methods (alcohol washes).

Overall health Colony health can improve with this style of management as health issues are generally concentrated in the brood chamber and with a reduced number of frames to search to find problems, they are often addressed more quickly.

Comb tracking and rotation It is easier to manage a system of comb rotation as all of the brood combs are separate from honeycombs. This also helps alleviate issues with wax moths as they are more attracted to brood combs where there are pupal casings and pollen has been stored. This is also beneficial as it can help prevent some of the pesticide exposure issues with honeycombs, as they are separate and can easily be removed for treatments which reduces their exposure to treatments and other pesticide sources.

Treatments Treatments are more targeted and effective and are also cheaper. We use a combination of products and continually rotate to prevent resistance issues. One of the most effective treatments that we use is (Apivar) which is an Amitraz-based contact treatment. There is improved contact once the honey supers are removed and the bees are isolated to the brood chamber. It is also cheaper for a colony managed as a single: occupying 10 frames requires two strips as opposed to four strips with a double brood chamber hive. Removing treatments is also quicker and less invasive as there is no need to separate boxes.

Honey We are able to harvest more honey from each hive as very little is stored in the brood chamber and the bulk of the honey is stored above the queen excluder in the honey supers. When following this style of management all of the supers are removed from the hive and all of that honey is harvested.

Single brood chamber hives during the honey flow
Photo courtesy of Jason Peters

Winter stores We are able to control the quality and quantity of food stored for the winter months. In a previous article I wrote about the advantages of wintering bees on sugar syrup. Once honey supers are removed, we are able to feed enough syrup for the bees to successfully winter on. Sugar syrup is a clean source of carbohydrates that is easily processed by bees. This reduces digestive issues such as dysentery and the bees consistently come out of winter stronger and healthier.

Cons:

Swarming Some of the prime swarming triggers such as congestion and downward pressure from incoming nectar are increased in singles leading to an increase in swarming tendencies.

Starvation Once supers are removed for harvesting, strong colonies managed in singles may not have much in the way of resources stored in the brood chamber and extra care and management may need to be applied to prevent starvation. This can also be a problem if we have a long cold/ wet spring and the bees don't have the opportunity to forage.

Poor wintering habits Bees of certain races and strains, or those produced in other areas with climates dissimilar to our own, may not be well suited to this style of management. Some of the issues that we have seen with many of the commercially available stocks are an increase in brood rearing too early in the spring and subsequent starvation issues. We have also had some stocks that wintered in very large clusters and needed supplemental/ emergency food added despite good management in the summer and fall and having them up to our target weight. We found that bees that required this additional management were not in good condition coming out of winter and were subsequently requeened.

Now that we know what single brood chamber management is and we have outlined some of the pros and cons, lets discuss how management and genetics play key roles in this management system.

The management side begins at the onset of the active beekeeping season. Following a strict schedule is key as things that happen when managing bees in a more traditional way for our area (double brood chambers) often happen significantly faster when managing singles (think swarming, starvation, etc.) As the bees are being pushed harder, the intensity of management needs to increase to meet the demands of the colony. The key word here is "management". Managing bees in double brood chambers can be significantly more forgiving and allow for less intensive management which will suit most beekeepers better as their schedule may not be as flexible as someone who manages bees for a living and is able to monitor their hives daily. Having said that,

our management doesn't change much when we are managing double or triple brood chamber hives (we often use them for resources and for cell building colonies) in our operation.

Once we are able to perform our first inspections of the season and colonies are assessed for health, strength and queen status, we begin equalizing colonies by moving frames of brood with adhering bees from stronger colonies to weaker colonies. This has a few distinct advantages such as improving productivity and reducing the instance of swarming in the yard as all of the colonies are of relative equal strength and can be monitored and managed similarly for the remainder of the season. This can also help prevent issues such as chilled brood in smaller/weaker colonies that may be struggling to develop. Colonies that have queen issues are broken down at this time and the resources are used to boost nucleus colonies or for strengthening other production colonies and our cell building colonies. Once the population of the colony begins to expand, and the bees are covering a sufficient number of frames in addition to being able to see signs of our first nectar flows, we add our queen excluder directly on top of our brood chamber. Our first honey super(s) will provide space for the growing population of adult bees, relieve congestion as well as to facilitate incoming nectar and honey storage. With single brood chambers, this action must be performed earlier than may be required when managing doubles, as we want very little storage of nectar in the brood chamber in order to provide enough space for the queen to lay unrestrictedly and in a sustainable cycle. Since one of the goals and benefits of this style of management is maximizing honey production, we do not make splits from these colonies as we are looking for optimal strength at the onset of the nectar flows. Colonies that are split at this time for things like swarm prevention, mitigating losses or for increase are not in a condition to produce maximum honey crops and often times will swarm anyway so managing for swarm prevention while maintaining a large population is key.

To accomplish this, we perform our inspections on a strict seven to ten day schedule during our prime swarm season (late May-early July) in our area. Our inspections consist of removing the honey supers and placing them on the hive lid which has been placed upside down near the side of the hive. We remove the second frame and do a quick search for the queen. Once we have determined that she is not on the frame, we place that frame against the front corner of the hive. Now that there is room to move frames in the hive, we begin removing frames and looking for signs of a queen (eggs and young larvae) and try to locate the queen. Once we locate the queen, we carefully pick her up and isolate her in a queen cage (a quiet box also works well) and we begin shaking down the frames inside of the hive to remove the adhering bees.

Caged queen during inspections
Photo courtesy of Jason Peters

This step is vital as it allows us to see any queen cells or queen cups that are often hidden in corners, indentations in the comb or are covered by adult bees. As we are removing and inspecting each frame, we are looking for eggs to determine that our queen is still actively laying and then we remove all developing queen cells and queen cups. If at the time of our inspection we find that the colony is further along with swarm preparations such as having queen cells with older larvae/capped queen cells or the queen has ceased laying indicating that swarming is imminent, further action may be required to prevent swarming. For example, pulling a nucleus colony from that hive, making a split where the original queen is removed or performing other more complicated swarm prevention techniques such as the Demaree method. We then place the frames back in the same order and orientation that they were removed and carefully re-introduce our queen. Once we have determined if more space is needed in the form of additional honey supers, we place our queen excluder back on the hive directly above the brood chamber prior to adding the honey supers.

We like to have these strong colonies build comb as it is a very valuable resource so we often intersperse frames of foundation among drawn combs in our supers. When adding additional supers, we place them directly above the queen excluder (under supering). Since we store our frames wet, once we add the boxes on top of the queen excluder the bees are immediately attracted to them and begin the job of repairing comb and utilizing that additional space as needed. As the season progresses, the process of our inspections remains the same but the schedule may change as we add in additional steps such as pest and disease monitoring and colony/queen performance analysis.

How genetics play a key role in the success of managing bees in single brood chambers

There are some races and strains of bees such as those of heavy Italian and Carniolan influence as well as some of the more recently developed strains that may not be as well suited to this style of management. Italians, although good producers of honey, winter with very large clusters and often brood up too early in the season giving rise to large populations of bees when the weather is not conducive to gathering nectar and pollen. This can lead to the beekeeper needing to continuously monitor their hives during the winter months and early spring, often finding it necessary to add supplemental/ emergency food to prevent the colonies from starving. Bees of heavy old world Carniolan influence, some Russian stocks and Saskatraz have a

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Single Brood Chamber Hives (cont)

stronger propensity to swarm which means that additional steps and more intensive management may be needed to prevent swarming. They also winter in larger clusters and are not as well suited to these compact conditions requiring more input from the beekeeper and/or more intensive management during the season. Using queens of good genetics that are selectively bred specifically for this style of management means better colony performance, healthier colonies, higher success rates, more harvestable honey and enjoyment for the beekeeper. The stocks that we use and continue to select from for our breeding program come from specific strains and crosses that exhibit the desirable traits and behaviors that we are after. For those interested in working with bees that consistently perform well under certain conditions or with certain management styles, it is advisable to contact an experienced local queen breeder that selectively breeds bees exhibiting the characteristics, behaviors and habits that you are looking for.

Preparing these colonies for winter really begins at the beginning of the season. Having all of the pieces to the puzzle in place, allowing the bees to structure their nest according to the conditions and managing colonies in a more proactive manner, is what leads to successful wintering. As was stated in a previous article, we follow a system for weighing and feeding our bees based on the hive configuration and the needs of the colony.

Feeding with pail feeders
Photo courtesy of Jason Peters

We prefer to have our bees winter on sucrose syrup (2:1 sugar syrup) as it is a clean source of energy and with some planning, we can control the quality and amount of food that they winter on as well as where it is stored which can help eliminate some issues and provide consistent results.

A strong colony ready for winter
Photo courtesy of Jason Peters

With singles, we like to have them weigh 80+ pounds going into the winter. We weigh each hive and for every 10 pounds of weight needed, we feed one gallon of 2:1 (heavy) syrup. When we are feeding for this purpose, we try to get the weight on as quickly as possible so that the bees have ample time to move the feed into the combs, invert some of the sugars, ripen and store it for later use. Timing is critical as we don't want to interrupt the production of winter bees but we also don't want them using all of the resources provided for brood rearing.

Hives wrapped on pallets
Photo courtesy of Jason Peters

Hives wrapped individually
Photo courtesy of Jason Peters

As far as preparing our hives for winter, we install an entrance reducer/mouse guard, make sure that the hives are slightly tilted forward to prevent water from collecting on the bottom board, provide an upper entrance for ventilation, air exchange and cleansing flights, provide top insulation and wrap using some sort of material to protect the hive from the elements. We have some that we use heavily insulated wraps for and some that have tar paper or coroplast wraps.

I have not noticed much of a difference with winter survival based solely on the style or material of wraps used. In my opinion, having strong, populous colonies of healthy bees with low varroa loads headed by young well-mated queens of good genetics and ample food reserves in the combs is far more important to successfully wintering colonies of bees regardless of the hive configuration.

There are many factors to consider when choosing a style of management that suits your experience level, schedule and goals as a beekeeper. If single brood chamber management is something that you have been considering or have been wanting to try, I would suggest starting with just a couple of hives and seeing how it works before making a larger commitment. This was some of the best advice I was ever given as it can relate to making any significant changes within your operation.

Spring Management: The Time is NOW

by Elizabeth Goodwin

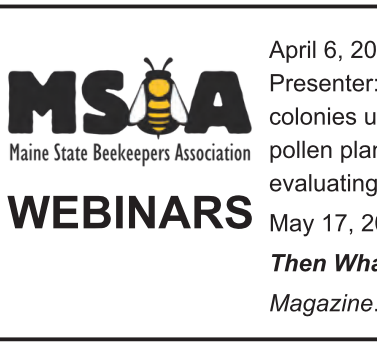
This past winter we were treated to weather cycles where we would get a stretch of pretty decent Maine winter weather, then a relatively warm and sunny day, followed by (occasionally in the span of a few hours) the wind picking up and the temperature plunging way below freezing. The bees would get a chance to fly and do a little housekeeping, polka dot the snow with tiny drops of gold, and hopefully make it back home in time to cluster before being caught out in the cold. If your bees made it through all that weather plus the threat of mites, moisture, mice, larger mammals, starvation and any number of other catastrophes... congratulations! Now that we're fully into meteorological spring, it's time to finalize or polish up your spring management plan.

When the *Bee Line's* editor asked me to write an article on spring management I have to admit I was a bit daunted. How could I summarize the literature of years and years of beekeeping experience, knowledge and expertise and present it in a new and interesting way? I pretty quickly determined that I didn't have to summarize all the literature on this topic (I'd never make the deadline!), but I did need to summarize for all beekeepers, those new to this backyard science, the well experienced professionals and everyone in between, what is important for Maine beekeepers to know, plan, prepare, and do for our bees as the weather warms.

So, here you go. The text may look familiar, and for that, credit goes to Maine State Apiarist Jen Lund.

You can find the full text at- https://www.maine.gov/dacf/php/apiary/documents/factsheets/maine-beekeepers-calendar.pdf

In a nutshell, (in a queen cup?) spring is the busiest time of the beekeeper's year. If your bees have survived and your queen is healthy, the increase in sunlight has been stimulating the colony to increase brood production for several weeks. By early April you'll need to be prepared for the excitement to come by having equipment (extra frames, foundation, and boxes), tools (smoker and fuel, cleaned and sharpened hive tools, alcohol wash supplies and Varroa treatment), and food (emergency candyboard, 1:1 syrup, pollen patty) on hand and ready to go. Good luck, be observant, call a mentor or be a mentor.



WEBINARS

April 6, 2022 7 pm. ***"The Next 42 Days With Your Colonies"*** Presenter: Karen Thurlow. Topics will include bringing colonies up to strength for honey production, splitting, the first pollen plants, how to tell when the nectar flow has begun, evaluating your queen, supering and more!

May 17, 2022 7 pm ***"How Many Colonies Do You Have and Then What?"*** Presenter: Jerry Hayes, Editor of *Bee Culture Magazine*. Stay tuned for more details!

Temporal Polyethism

by Jane Dunstan

Age polyethism, or division of labor, occurs naturally in the honey bee colony. As the bee matures there is a corresponding transition from one task to another. That range of duties is determined by her age and capabilities, changing needs of the colony and time of year.

Worker bees are the life force of the colony, responsible for performing the majority of maintenance tasks on a daily basis. These duties are often viewed as either inside, performed as a house bee, or outside as a field bee. Once the honey bee emerges from her cell as an adult she assumes a work role almost immediately. While much of her life is spent transitioning from one task to another, bees also have periods when they are simply idle. It is estimated that during a bee's lifespan, equal amounts of time are spent in one of three ways: resting, working at designated tasks or walking around the colony and performing other jobs which need to be accomplished. Worker bees are indeed capable of undertaking more than one task during any single developmental stage if required.

Some limitation exists in how long certain tasks can be performed. For instance a young worker bee who feeds brood can do so because her hypopharyngeal glands and mandibular glands secrete enzymes for bee food for only approximately one to two weeks. Some tasks are affected by season. During the fall there is less foraging, less nectar collection and/or processing and less construction of comb; as a result, bees participate in other activities within the colony.

Cleaning cells prior to egg deposit is performed by bees only a few hours old. Younger workers feed larvae as well as tend to the queen as members of the queen's court or retinue. The queen is fed, groomed and cleaned all while these attendants distribute the queen pheromone throughout the colony. As bees mature, older bees move away from the immediate brood area and become generalized house bees, keeping the brood nest clear of debris, coating areas with propolis and removing dead or dying brood. They become involved with processing pollen and nectar after receiving these products from field bees at the entrance of the hive. Their wax glands peak in function by eight to 17 days at which time they contribute to the building of cells and wax coverings over brood and honey. Foraging for pollen, nectar, water and propolis is performed by the oldest members of the colony at approximately 21 days of age. There is a constancy in their work; they collect one but not all of the possible resources. The honey bee may collect nectar for one entire day or for throughout her life as a forager. She frequents a particular flower for the entire day and may return to that same type of flower for several days thereafter. Foraging is difficult work and their wings become worn and tattered after flying and brushing them against flowers and foliage while in flight. There comes a point in time where the honey bee is unable to fly and carry the load. Richard Bonney in *Beekeeping, A Practical Guide* writes “Actually the bees' worn wings more or less coincide with a particular physiological development: a bee is capable of digesting only a given amount of sugar in her life, and once she has processed that amount, her life ends.”[1]

A general chronological account of age-related duties is as follows:

Day 1-3
Bees remain in the brood nest area, prepare the cell, remove debris, clean and polish cells with their tongues before the queen will lay an egg or prior to foragers using the cell to store nectar and/or pollen
Day 3-16
Remove dead bees
Days 6-16
Feed royal jelly and care for developing larvae
Day 7-12
Groom and feed the queen, remove excrement, coax queen to lay eggs, distribute queen pheromone to the colony
Each day the bees venture further from the broodnest to explore the hive
Day 10-12
Produce wax to build and repair cells and cap honey-filled cells and brood
Day 12-18
Leave brood nest area and position themselves near hive opening, take and deposit nectar and pollen from field bees; begin active evaporation of nectar, add enzymes and fan cells to evaporate water content to transform nectar into honey, assist with temperature regulation: draw warm air out of hive, maintain 93-95° for developing brood
Day 18-21
Become attracted to light with changes in hormone levels and begin outside activities; conduct orientation flights, commence guarding the hive entrance
Day 21-35
Forage for nectar, pollen, water and propolis

References:
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EAS 2022

by Janet Anker

The Eastern Apicultural Society (EAS) is thrilled to announce ***Beeing Social, Again***, the 2022 EAS Short Course and Conference, taking place August 1 – 5 at Ithaca College in Ithaca, NY. The short course has tracks for beginner to advanced beekeepers, largely geared towards hands-on experience. The conference features presentations by well known names in the beekeeping world and covers everything bee related you could possibly want to know.

There will be an afternoon tour and evening BBQ at a local bee business, as well as all your favorite vendors, all in one place, ready to sell you anything you need (no shipping charges!).

Bring your non-beekeeping family members with you and they can enjoy the local swimming holes and vineyards, state parks and golf courses, while you immerse yourself in a week of honey bee education and experience.

Accommodations range from dorm rooms and campgrounds to area hotels (monitor the website for conference discount rates). If you are interested in attending:
1) make sure you are a paid-up member of EAS and
2) keep an eye on the *Bee Line* and the EAS conference website for developing details.

Master Beekeeper Certification exams will take place during the conference. To take the exams you should get your application and recommendation forms in now.

Remember to register your apiaries by June 15th!

It is a requirement under the Title 7 MSRA, section 2701 to register your apiary with the Maine Department of Agriculture, Conservation and Forestry (DACF). Registration is valid for a twelve-month period expiring in mid-June. If you previously registered your apiaries, you will receive a renewal form by mail. If you have not previously registered your hives, forms can be downloaded from the DACF apiary website (www.maine.gov/dacf/php/apiary). Besides being the law, it is important for beekeepers to register their apiaries with the State of Maine for several reasons.

Disease Management: American Foulbrood is extremely long-lived and contagious. It can rapidly spread from hive to hive. If a positive case is found in the state, all the surrounding registered beekeepers are notified. A notification alerts a beekeeper to be extra vigilant about checking their hives for signs of the disease and allows them to request an inspection by a trained inspector. If your apiary is not registered, you will not be contacted.

Pesticide Applications: There are rare occasions when pesticides must be applied aerially to control mosquitoes or other public health pests. The Maine State plan for public health emergencies includes consideration for pollinators and contains language that directs the applicator to contact beekeepers in the area so they can take the proper precautions to protect hives. If you are not registered, you may not be contacted.

Inspections: If your hives are registered with the DACF you can request an inspection of your apiary by a trained apiary inspector.

Outreach and Education: Registered beekeepers who provide their email address will be included on important updates regarding pests/diseases and educational opportunities.

Fill Out the 2021/2022 Maine Beekeeper Survey!!!

The annual Maine beekeeper survey of losses and management practices goes live on April 1, 2022! Gathering this type of data is important for seeing trends, recognizing when and how losses occur, and determining where to focus education/outreach activities in the future. A summary report of the survey will be presented at the Maine State Beekeepers annual meeting in October and available online. A link to the survey can be found at the top of the DACF apiary website (www.maine.gov/dacf/php/apiary).

Tips and Tricks

by Jason Peters

Moving Hives

Here are some of the steps that we take when moving hives:

- Ideally set up the hive(s) to be moved in the late evening (our preference) or early morning when most of the bees are in the hive.
-Make sure to have a smoker lit and ready to go. Begin by puffing some smoke into the entrance.
-If you are closing them up, make sure that you provide adequate ventilation. This can be achieved by using number eight hardware cloth placed across the entire width of entrance and using a screened top to provide flow through ventilation.
-Alternatively you can use a wood framed queen excluder with window screening stapled over the top and a few shims placed underneath your telescoping cover. If using screened bottom boards, it is recommended to remove the insert.

Screened top provides ventilation
Photo courtesy of Jason Peters

- When lifting/ moving singles, I place one ratchet strap around the middle of the hive and tighten it down. I pick them up from underneath the telescoping lid as I find that easier than trying to get my arms around the entire hive. For heavier hives or doubles, use two ratchet straps (one around the front of the hive and one around the back of the hive). To make the job easier, place two "handles" underneath the sides of the telescoping lid to act as a hive carrier. For handles, we use pieces of 2"x2" lumber. You can also purchase wheelbarrow handles at most hardware stores or purchase a designated hive carrier.

Positioning handles underneath the telescoping lid
Photo courtesy of Jason Peters

-Tighten the ratchet straps to secure everything in place and move the hive(s) to their new location.
-Once set up in the new location, we lightly smoke them again. We try to force the bees to re-orient so that the foragers are less likely to return to the original location. To accomplish this, we replace the hardware cloth with an entrance reducer that has painter's tape across the opening. Prior to installing the reducer, we use a sharp knife and cut a small slit into the tape. The tape acts as a sort of slow-release mechanism delaying the bees from having access to the outside until they chew their way through the tape. We have also used grass to plug up the entrance and as the grass wilts the bees are able to push it out of the entrance.

Hive ready to be moved
Photo courtesy of Jason Peters

-Placing tree branches or sticks in front of the hive entrances can also help by confusing the bees as they are forced to navigate around those objects.
-If moving bees within the same yard, placing an empty hive at the old location can help capture the older foragers.

Remember to make sure that your path is clear and lift with your legs!

Ask A Master Beekeeper...

Which method for raising queens do you prefer to utilize and why?

I don't intentionally raise queens. Improving stock requires knowing and having stable genetics in your area. My area is flooded with drones from migratory pollination operations each year. I'm not saying these genetics are "bad", rather they are an unknown. *Andrew Dewey, Master Beekeeper*

We utilize grafting and transferring cells to three way mating nucs. I usually recommend newer beekeepers start their queen rearing journey by utilizing swarm cells. This has drawbacks but it's a good way to familiarize yourself with the process and you can propagate from desired colonies. *Chris Rogers, Master Beekeeper*

When I do raise queens I graft larvae. This method does require some serious record keeping and is not for people busy with life. I used to try to raise more queens than I do now but found that running a bee supply store and raising queens at the same time just didn't work. *Rick Cooper, Master Beekeeper*

My method for raising queens is variable depending on the season. I have tried OTS this past year and found it great for when I had time to attend to them and making queens from a preferred hive. I normally make holes in my comb on the upper and lower corners so that when the swarming impulse begins they place beautifully protected queen cells so I can cut out and install them in my mini mating nukes for hatching and mating. I also mentor other beekeepers and in helping them prevent swarming, will reduce their queen cells by cutting them out and raising them in case their first queen does not come back. I will have a mated sister queen for them to continue their hives without another interruption. *John Hildreth, Master Beekeeper*

What should the considerations be in using pollen patties? If they are utilized, when should they be placed on the hive and are they replenished regularly until dandelions emerge?

Most areas of Maine have adequate natural pollen and pollen patties aren't needed unless you want the bees to do something other than what they would do naturally. For example, if you make up nucs in the spring, it can benefit you to start feeding pollen two brood cycles before you want to make up the nucs. Once started feeding patties, you should continue feeding them until there is equivalent natural pollen available. In Maine that is usually around dandelion bloom. *Andrew Dewey, Master Beekeeper*

We usually advise giving pollen patties in early April when feeding syrup. The brood nest will be needy then and if the weather is crappy the colony can continue building. Replace the pollen patties as needed if the bees are consuming them. Otherwise if you're in the queen and nuc business you'd start around March 1st. Hobby beekeepers don't need to feed pollen to colonies this soon. *Chris Rogers, Master Beekeeper*

I have always used the Ides of March as the time to put pollen patties on my hives. Remember that now we are trending to the darker colored queens and as often as not they don't take pollen as well as the Italians did. Yes, we try to keep pollen on until late April. Remember pollen is protein and once started, egg laying increases and sufficient pollen must be maintained until natural pollen is abundant. *Rick Cooper, Master Beekeeper*

I always use pollen patties just like feeding sugar in the winter. It is added insurance; if they need sugar or supplements it is there for them. If they don't need it then I will store it for the next year. I find that if I put them in when I put the candy boards on they are available when the bees finally chew through the candy which is usually March. I will monitor every two weeks and replace either half or whole patties when needed. The bees will let you know when there is the real stuff available and will stop eating it so you can pull out and store in case there is a rainy spell when you need to feed again. *John Hildreth, Master Beekeeper*

What is the trick to painting wax on plastic foundation?

I no longer paint extra wax on frames, having found the heavily waxed foundation commercially available satisfactory (I use Acorn). When I did paint frames with wax, I did it outside, used an old crockpot to melt the wax (the crockpot is only used for wax), and foam brushes to apply the wax. Rolling brushes worked ok but weren't a significant improvement over regular brushes. The process didn't work well if it was cold outside as the wax cooled excessively between the crockpot and the foundation. *Andrew Dewey, Master Beekeeper*

Melted wax in a double boiler or hot plate along with a foam brush. Have at it! *Chris Rogers, Master Beekeeper*

I have never painted wax on a plastic frame in my life. If the good Lord meant for bees to have plastic in their hives He would have given bees plastic glands instead of wax glands. *Rick Cooper, Master Beekeeper*

VARROA: FIGHT THE MITE

by Jane Dunstan

In the ***FiGHT THE MITE*** series, we conclude the first word FIGHT.

Find frames with open brood for an accurate alcohol wash sampling
Ignore the temptation to wait until you see mite damage
Gather your tools before the season starts
Help your bees to be healthy, productive and mite free
Talk to your beekeeper neighbors about mite management

Beekeeping is not done in isolation. It is very much a community affair. What you do or don't do in your apiary affects your beekeeping neighbors. When I utilize miticides and IPM to reduce/eliminate varroa mites in my colonies, beekeepers within three miles of my apiaries benefit. When robbing occurs and my bees are the culprits, I can rest assured that my bees have been treated. Yet those same neighbors who my bees visit may either choose not to treat or treat at less than optimal times. My wayward bees now return to their hives most likely with hitchhiking varroa mites who will happily take up residence in my colonies. This becomes a dilemma for both me and my neighbors, who I may or may not know.

Despite the discomfort and hesitation of having a difficult conversation, I would propose that you indeed have one. While it may seem to us as members of MSBA that there are ample opportunities for continued education about varroa mites and treatment via webinars and newsletters, as well as involvement in local chapters, unfortunately there are beekeepers out there who have not received education nor are they part of a community of beekeepers. Perhaps simply dropping off a note with a request to talk bees along with an alcohol wash jar and link to the varroa management guide is an open door to further communication. There is a group of beekeepers in the midcoast area who live in close geographical proximity and collectively agree to treat their hives at the same time....typically at the end of July/beginning of August when winter bees begin to be born and again in the fall. They feel that this community approach has not only contributed to the health of their colonies but has served as an opportunity to dialogue about other aspects of hive management and colony health.

Mites continue to decimate our colonies when their treatment is mismanaged or simply not performed. While we can respect the management styles of our neighbors and one another, I also believe that as stewards of these remarkable creatures, we are called to educate and assist in the furtherance of sound beekeeping practices and managment strategies. My stewardship cry of "we chose them....they did not choose us" reverberates loudly.

MAINE BEE WELLNESS
Buzzing with the bees in Maine

Maine Bee Wellness (MEBW) announces the establishment of a $3,000 graduate student fellowship at The University of Maine. The Maine Bee Wellness Fellowship is awarded to a student in the School of Biology and Ecology (or the Ecology and Environmental Sciences Program) whose proposed or completed thesis has something to do with bees.

The recipient will be chosen by the Director of the School of Biology and Ecology in consultation with the faculty and the Dean. MEBW's Executive Director, Andrew Dewey said, "Education is the heart of the MEBW mission. Several UMaine entomology graduates have greatly impressed us, and we expect exceptional things from the students and the School in the future."

Dewey continues, "MEBW has committed to funding the Fellowship for five years. We hope the Fellowship is around to help students for decades to come."

MEBW is a private non-profit foundation that promotes education about bees - both honey and native - in Maine. See MEBW's website at www.mebw.org for more information.

Contact: Andrew Dewey, email: info@mebw.org

Maine State Beekeepers Association

THE BEE LINE | Newsletter of the MSBA

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mainebeekeepers.org

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Join the Maine State Beekeepers Association today — via the MSBA website or this mail form!

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Membership Type*	Cost
☐ Annual Individual	$ 15.00
☐ Annual Family	$ 22.50
☐ 5-Year Individual	$ 68.00
☐ 5-Year Family	$ 100.00
☐ Lifetime Individual	$ 180.00
☐ Lifetime Family	$ 270.00
☐ Extra Gift Donation	$_____
Total Payment	$_____

*Memberships are for one year from the date of receipt, include a subscription to MSBA's bimonthly newsletter *The Bee Line*, and are a prerequisite of attending the MSBA Annual Meeting.

Make check payable to
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Current Age	# of Years Beekeeping	Greatest # of Hives	Current # of Hives	Chapter(s) You Are a Member of

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