APRIL 2024

MCBA NEWSLETTER

MONTGOMERY COUNTY BEEKEEPERS ASSOCIATION

NOTE FROM THE PRESIDENT

REGINA RHOA

I just came back from the University of Florida for their spring bee college and had a nice 11-day vacation prior to kick off of bee season. I took a lot of classes on value added products. It was a great time and I got to meet a lot of new people.

What a roller coaster the last few weeks have been with daytime temperatures hovering around 70F, then dropping back to daytime temperatures in the 40s with multiple rainy days. I put on my pollen traps last week and the girls were bringing in lots of pollen but very little nectar. I went in the last week of March and did an inspection of all my colonies, just in time prior to the cold rainy weather we had the first week in April. I am glad I did an inspection. My hives were brooded up with at least 10+ frames of brood but very little food. This would have been a disaster for starvation just before we went into a week of no flying days. I added a bag of fondant to all my hives and will keep my fingers crossed. Right now, I overwintered 30 hives with 100% success rate.I normally overwinter success rates is 90-95%, so I am feeling really good. I am very aggressive with monitoring for mites. I do mite counts every month from May until late September and I treat when required. I also always do mite counts after treatments. I finish up the season in December with an oxalic acid vapor during the winter broodless period. Obviously, it paid off.

I don't want all the that work to go down the drain to lose them in the final stretch due to starvation.The average national hive loss rate is around 45% with varroa, queen failure, weather and starvation being the primary factors. If I had to guess, 90% of those losses are due to varroa and the viral diseases they carry. If they starved, it was either due to the beekeeper failing to get the hives heavy enough in the fall with winter stores or not feeding during the early spring brood build up. If I had to guess, it was more likely due to the decreasing cluster size due to varroa, preventing the bees from being able to move to access the food.

I did not wrap my hives this winter for the first time and had no issues, though we have had very mild winters. I even overwintered 16 standalone nucs, so the bees can obviously keep their home warm.So, we really can't blame the weather.

THIS ISSUE:

NOTE FROM THE PRESIDENT
PAGE 01

NATIVE PLANT EXCHANGE
PAGE 02

LAYING WORKERS
PAGE 03-06

ANNOUNCEMENTS/EVENTS
PAGE 07

GENERAL MEETINGS
PAGE 08

BEGINNERS' CORNER
PAGE 09

MEET THE BOARD
PAGE 10

NOTE FROM THE PRESIDENT (CONT'D)

The MCBA club members have great access to quality queens with the queen cell program MCBA runs.This year we have come up with a grafting schedule with cell distributions every week during the spring and early summer, then every 2 weeks in late summer. We have added several new grafters, so we shouldn't be short of queen cells. The club will also be mixing it up with some virgin distributions. I will be a grafter this year and will be putting out the first 2 queen cell distributions.

If you have not had a chance to attend March's general meeting, the zoom recording was sent out. I highly recommend watching it. I spoke about pollen during the mini presentation and Landi Simone, EAS Master Beekeeper spoke about reading the frames. She covers all the things that can go wrong in a hive with diseases and queen issues. She shows you how to determine what is going on in your hive by looking at a frame or just by looking at the front entrance's flight activity. So now we have no more excuses to lose our hives due to not being able to identify diseases or queen failure.

NATIVE PLANT EXCHANGE

Attention MCBA members and native plant enthusiasts!

Please consider joining us at the April General Meeting (4/25) in-person for a native plant exchange/giveaway. A table will be set up at ~6:30PM outside the 4H center. Keep in mind we will shuffle inside to begin the 'mini' session at 7:00PM.

Some native perennials available (on a first come basis) include:

-Swamp milkweed (Asclepias incarnata)
-Butterfly weed (Asclepias tuberosa)
-Wingstem (Verbesina alternifolia)
-Zigzag goldenrod (Solidago flexicaulis)
-New York ironweed (Vernonia noveboracensis)

What can you bring?
-Any native plants (please be sure they are native to SEPA)
-Native seeds (either reputably sourced, or harvested with certainty from your garden)
-Used pots/containers/trays

Don't have anything to trade? No worries! There will likely be extra plants available and we would be happy to see your pollinator gardens GROW!

If you are interested and have plants/materials you would like to share, please contact Derek Pruyne at dtp5025@gmail.com and they will be added to the final announcement prior to the event.

HOW TO HANDLE LAYING WORKERS

Regina Rhoa, MCBA President

So, if you have been beekeeping long enough, you have probably encountered a laying worker hive.If you haven't, congratulations, but it still may be in your future. I know I had one my first year. Of course, I panicked and called my mentor. I am now into my 9th year of beekeeping and consider myself a pretty good beekeeper, but last year I had 3 laying worker hives. So, experience is not always the key to avoiding this phenomenon, but knowing how to resolve it makes you a good beekeeper.I would like to explain what a laying worker is, why they happen and what can be done to resolve them.

Once your hive goes queenless, your bees will know it in an hour or so. Usually within less than a day, the bees will start building queen cells if they have larvae of viable age. The optimal age of a larva for the best queen is less than 1 day old, grafters usually pick a larva that is 12 hours old. The bees know this also, but if they do not have a young larva, they will pick an older larva up until 3-4 days old. This will obviously make an inferior queen but a queen nonetheless.If you only have eggs, the bees will wait until the egg transition to a 1st instar larva. So, from the point the 1st instar of a larva to a virgin emerging is 13 days. The queen matures enough to go for her mating flight at day 6-7. Once we have a warm enough day (~70°F and no wind or light wind), the queen will go out on a mating flight, sometimes over more than 1 day. This all depends on the weather. If we have cold rainy days, then this can delay mating flights. After about 21 days, the virgin has missed her fertility window and thus will never mate. Once she has finished mating, most queens will start laying a few eggs in about 3 days. So now our bee math:

-Larvae to emergence (depending on age of larvae)	10-13 days
-Virgin to laying queen	10-24 days
Total	**20-37 days**

So, what could have gone wrong?

- We get impatient and mess with the hive before then. Since virgins are flighty, we could have lost the queen or killed her when we went in and did an inspection.
- If we started with a swarm/supersedure cell, we could have damaged it. Queen cells are very fragile and can easily be smashed by pushing frames together if the cell is younger than 13 days old. We thought we had a great queen cell but we damaged it and no other viable larvae exists.
- The queen went out on a mating flight and got lost or eaten by a bird.

HOW TO HANDLE LAYING WORKERS (CONT'D)

So, if we go into the hive and don't see a laying queen, we close it back up and give it another week.

In the interim, what is happening in the hive. As I hope you have learned, the young larvae and capped brood emits a brood odor. This brood odor prevents the ovaries of a worker from developing. A queen is the only female in the hive with developed ovaries.The ovaries of workers exist but are shrunken. Think of the size of queen's ovaries like a plump grape and the worker's ovaries like a shrunken raisin. When no brood odor exists, the worker's ovaries can develop enough to lay eggs, but since workers never gets mated, they can only lay unfertilized eggs (drones).So, depending on the age of the brood when your hive goes queenless, this gives you your timeline. Worker brood develops in 21 days and drone brood develop in 24 days. After about 7-14 days without brood odor, the worker's ovaries start to develop, and they start to lay eggs. If the queen never got mated, got eaten by a bird or killed by the overzealous beekeeper, then you get a laying worker hive. If you are not sure whether you have a queen, put a frame of eggs or very young larvae in as a test frame. Go back and check 3 days later. If there is no queen, the hive will have built queen cells on that frame. This will give you some more time since you are now giving the hive brood odor. You can now decide on whether to give the hive a queen cell or mated queen.

When you go into your hive for an inspection, you see lots of eggs/young larvae, so you say to yourself, I am golden. You close the hive back up and don't check for another week or so. The next time you go into the hive you see only capped drone brood sporadically placed with the brood area (see photo).What happened?! Chances are you have laying workers that started laying, but you did not know until you saw those characteristically shaped bullets sized capped drone brood. As you can see, many things can go wrong.

Bee Inormed Partnership

HOW TO HANDLE LAYING WORKERS (CONT'D)

What if you go into your hive and see multiple eggs in a cell? This could mean you have a laying worker or it could be a newly mated queen getting used to laying. A lot of times a newly mated queen will take a few days to get used to laying eggs and may lay several eggs in one cell the first couple days, but she figures it out. Generally, you can tell the difference by looking closely at the cell. A laying worker will have 5-6 eggs in a cell and the eggs will often be laid on the cell wall, not the bottom of the cell (see photo).Laying workers do not have a long slender abdomen like a queen thus she cannot get the tip of her abdomen in the bottom of the cell. You do not have one laying worker, but 100's of laying workers.

Unfortunately, the laying workers don't lay eggs in drone sized cells, but worker sized cells.When the drone larva develops, it now stretches out your nice worker size comb, thus ruining it. You can always use it for honey comb or drone comb.At this point, what do you do? I will give you a list of things that work, may work and do not work.

Does NOT work

- Give the hive a mated queen. Since the hive has many laying workers, the laying workers have enough combined pheromone for the hive to think they are queenright. Save your money since your bees will just kill your newly purchased queen.
- Dismantle your hive and shake all the bees several 100 yards away from your hive.Put the hive back together and put a mated queen in. This premise is that the laying workers can't fly and return to the hive. This belief is false. Laying workers were never mated and are not weighed down with ovaries full of eggs. Even a mated queen can fly in a swarm when she is put on a diet by the bees. By the way, this is what my mentor told me to do the first year. It did not work.

May work with some reservations

- Give the hive a frame of young worker larva every 5-6 days until they raise a new queen.The presence of open worker brood will start to suppress the ovaries of the laying workers, but it will take time.The bees will start building queen cells immediately. The only problem with this approach is that they will continue to rear drone brood until their ovaries shrink, thus messing up your nice comb. You also must wait 25+ days for the queen to start laying.

- After you gave your hive some young worker larva, give your hive a queen cell in a cell protector. When you virgin emerges, she does not have any pheromone. This may give her enough time to develop and go out and get mated.As with the first option, the laying workers will continue to lay eggs for a while.
- Dismantle your hive and put a bottom board with one brood box with undrawn foundation on the hive stand. Take a frame of open eggs/young larvae from another hive and put it in the brood box.Shake all the bees out in front of the hive stand and let all the bees go into the new hive. Feed the hive sugar syrup and give bee bread or pollen patty.The hive will than raise a new queen and draw out new comb for you. I call this the walk away split method with a little shook swarm thrown in. I also had good luck with this method by using a virgin.If I am giving it a virgin, I will often start with a frame of older brood that also has no open cells for the laying workers to lay eggs in, then follow up in a few days with the young larvae and a virgin. The obvious downside is that you must build up your hive from the ground up, but it works well. Also, the bees draw new comb like crazy.

Works well

- Dismantle the hive, dump all the bees out in front of your other hives and remove your old equipment. There will be total chaos in your bee yard, but the bees will find a new home. The new home with a reigning queen will kill the laying workers.
- Consolidate the laying worker hive into the smallest number of brood boxes possible depending on its strength. Merge laying worker hive with another queenright hive(s). Put a queen excluder on top of a queenright colony and add the laying worker hive on top of the queen excluder. If you have multiple boxes in the laying worker hive, you can add all boxes to one hive or split between several hives. If the laying worker hive is very robust, I would suggest splitting the boxes amongst several hives. Leave the hive alone for several days. The bees from the queenright hive will go up through the queen excluder and kill and drag out the laying workers. Remember that these laying workers are putting off some queen pheromone, so the bees from the queenright hive know that they do not belong.
- Insert a queenright nucleus colony into your laying worker hive. Remove 5 frames in the upper box of your laying worker hive off to one side. Take a robust nucleus colony and insert all 5 frames including the queen in place of the 5 removed frames and close the hive. The nucleus bees will protect their queen. The key to this technique is you must have a robust nucleus. I have done this with a weaker nucleus and the laying workers killed the queen.

So, what do I do with my messed up comb?

- Just give it to another hive, but the comb will be permanently drone brood.
- Mark the comb as honeycomb or drone comb on the top bar so you remember.
- If you catch it early enough, prior to the bees stretching out the cells, you can freeze the comb. When you give frozen comb back to another hive, they will remove the eggs/young larvae and you can still possibly salvage your comb.

So, in summary, don't feel like you are a bad beekeeper since this will happen to you at least once or more often if you do beekeeping long enough.Give the bees the needed time to raise a new queen and let her get mated, but don't forget to go back and confirm your queen was mated. Sometimes queens just don't make it back from mating flights. Laying worker hives generally happens when we don't follow up on our hives or inspect often enough. If you are diligent, you can catch this soon enough and salvage your precious comb.

ANNOUNCEMENTS/EVENTS

2024 New Beekeepers Class #3

Tuesday, April 16
Montgomery County 4H Center
6:00PM-9:00PM
(Class registration closed)

Special Interest Class (May)

Honeybee Life Cycle Development and Nutrition

Regina Rhoa

Wednesday, May 8
Montgomery County 4H Center (in-person)
7:00PM-9:00PM
REGISTER HERE

Special Interest Class (June)

Bee Season Preps for 2025 (now what should I do?)

Mike Awckland

Tuesday, June 4
Montgomery County 4H Center (in-person)
7:00PM-9:00PM
REGISTER HERE

GENERAL MEETINGS

March Recap

Thank you to Regina Rhoa and Landi Simone for yet another great set of presentations at our March General Meeting. If you haven't had the opportunity, please check your emails for the Zoom link and watch this presentation! Regina covered some great material on pollen in the mini-session, while Landi highlighted what is essentially the foundation of any hive inspection: "assessing the frames". Especially for beginners, this should be a required watch!

April 25 - 7:00 PM

Mini Presentation - Regina Rhoa

Laying Workers - What causes a laying worker hive, prevention techniques and how to fix them

Main Presentation - Dr. Margaret Couvillon

Bees as Bioindicators for a Sustainable Future

Honey bees possess the amazing, unique, and charismatic communication behavior called the waggle dance, where successfully returning foragers communicate the vector from the hive to the resource. We use this dance in various contexts to give us biologically-relevant information on how the bees are using the landscape.

Dr. Margaret Jane Couvillon is an Assistant Professor of Pollinator Health at Virginia Tech's Entomology Department. She is interested in how honey bees and other pollinators use the landscape, and ultimately, what landscapes promote pollinator health.

THE BEGINNERS' CORNER

State Apiary Inspection Program

While I have covered the Apiary Inspection Program before (and I'm sure it has been stressed in the new beekeepers' class), I recently came across a troubling sentiment online (Facebook... am I right?). Please forgive any repetition, but I think it is important enough to cover again, especially this time of year.

As an avid gardener, there are a few Facebook pages I have followed over the years to observe new ideas and techniques. One in particular was run by a southern garlic farmer (among other things) and beekeeper. A fellow follower made a comment about *their* state inspection program, and the response went something like: "I don't need the government sticking their nose in my apiaries telling me what I can and cannot do." Now, of course, I am paraphrasing a bit, but I was taken aback.

Don't get me wrong - I think we can all agree that the government (whether at the federal or state level) can be frustrating. Politics certainly have no place in this newsletter, but I generally do understand the notion that government intervention/regulation sometimes feels restrictive. But in this case, if there is any confusion about our State Apiary Inspection Program, I'm telling you **this program is extraordinarily beneficial to PA beekeepers.**

So what is its purpose? From the PSBA website:

"The Bee Law continues to regulate the movement of honey bees, queens, and equipment into Pennsylvania in order to mitigate bee disease outbreak.

Each year a team of apiary inspectors is hired to inspect colonies throughout Pennsylvania during the active bee season (approximately May-September). The program aims to inspect 50% of all colonies in the Commonwealth once every two years. Inspection efforts are focused on apiaries that had previous outbreaks of American Foulbrood (AFB). When an inspector finds or suspects a case of AFB, the apiary containing the colony is quarantined as samples are processed in Harrisburg to confirm infection. Beekeepers are notified of the diagnosis and, if positive, are provided a treatment order outlining treatment options that must be completed within 14 days of receiving the order.

The Apiary Inspection Program also provides certification inspections for queen producers. The program also attempts to provide migratory beekeeping operations the certification they need to facilitate the safe and timely movement of bees in and out of the Commonwealth. The Bureau of Plant Industry does not have any regulations governing the sale of honey."

Too long/didn't read: ultimately, this program is helping beekeepers by mitigating instances of spreading disease. If you haven't yet registered your hives, you can do so HERE for a nominal fee of $10/2yrs (this may increase in the future to ensure the program is properly funded). While our state inspectors tend to be spread thin and dedicate most of their time to 1) suspected disease outbreaks and 2) honeybee/queen producers, participating in an inspection with a state inspector is actually a great learning experience!

In summary, this program is nothing to shy away from. We've all heard anecdotes of an overzealous health inspector cracking down on an establishment, but this is not that. So register your hives to do your part keeping our Pennsylvania bees as healthy as possible!

2024 MCBA Board of Directors

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Note to all MCBA members: the board holds monthly meetings that can be found on our Events page HERE. Members are always welcome to join these meetings to share thoughts/ideas, or to simply observe the inner-workings of the club.

Montgomery County Beekeepers’ Association of Pennsylvania (MCBAPA) is a 501(c)3 non profit organization located in Montgomery County, PA. Our membership consists of individuals who are both commercial and hobby beekeepers. The MCBAPA encourages and promotes active involvement within our community and our organization. Membership is open to an individual who is a beekeeper or has an interest in beekeeping, and who wants to promote honeybee health.

Our Mission: Providing educational outreach to the public, supporting fellow beekeepers and working to promote sound beekeeping practices and honeybee health.