

Mountain Empire Beekeepers Association

Minutes

DRAFT September 23, 2021

The meeting was called to order at 6:30 p.m. by Mickey Cunningham at the Pioneer Church located at 615 Max Meadows Rd. Max Meadows, Va 24360. 19 members were present.

**Minutes and Treasurer's Report:** Motion to approve minutes—Cathy Hounshell, seconded by Hank Sturkie. Minutes approved. The treasurer's report was provided by Gary Tolley and presented by Mickey Cunningham. The report was filed for audit.

**Speaker:** Mickey Cunningham

**Presentation: Managing Nucs for Winter Survival**

- What does one see in the colony – look at each frame, number of bees, amount of brood, uncapped, capped, bees hatching, pattern of brood  
Do you see small winter bees? Are there any drone cells? (Uncapped), queen cells – destroy
- What does colony winter survival look like? Honey stores especially outside two frames left and right up and down. Beekeepers want most honey wind side of the hive box with most honey situated to the outsides of the box. Upper brood box center should be open to allow clustering.
- When does winter begin for the hive of your Nuc? If your area was dry (no rain) winter began in July; if your area had rain, winter has begun depending upon elevation; does the queen have the colony organized?
- Testing and/or treating for mites - Check drone cells first for mites – little brown spots on pupae-be 0-4 or more/cell
- Talking Points: Winter Bee Production Begins; Nutrition requirements – August and November; Check queen laying pattern –VSH being observed by hive; Test or treat for Varroa Mites; check feed stores monthly begin in August; Check condition of hive bodies (boxes); check sanitation of hive
- Feed Requirements:
  - Lipids** – Leucine-FAT that one adds to homemade Honey-B-Healthy or mixed with fondant
  - Proteins**-Pollen-purchased at GNC or other suppliers; When replacing wax in frames look for pollen supply to cut out to feed bees- freeze for two (2)  
DAYS BEFORE FEEDING. Pollen patties and pollen supplements like AP 23 and Global Patties –  
CAUTION: When Mickey purchased AR 23 from  
Scottsville Supply, Heather told him NOT to feed AP 23 in January in Virginia because it causes hive to begin laying too soon. Secondly, limit protein  
to 11 to 15% of diet; however, 11% is better (Randy Oliver).
  - Carbohydrates** – sugar-granulated or High Fructose Corn Syrup (HFC)
  - Water** – fresh or with mineral salt
  - Minerals** – Potassium- November – Amino-B- 1 to 2 teaspoons per quart of sugar water to fortify colonies for overwintering; use in early spring with  
pollen scarce; can be used in conjunction with Honey-B-Healthy; dose maybe increased during pollen and nectar dearth. Note: Avoid use before long  
winter clusters.

**Old Business:**

- Mickey Cunningham encourages all beekeepers with 3 or more years of experience to help mentor others.
- Patty Younger has offered her church, Pioneer church in Max Meadows, as a meeting place for MEBA until Wytheville Community College is available again. (Thank you Patty!)

- Blue Ridge Bee Supply in Mt. Airy will melt and strain your bees wax. You need to wash it first. There is a charge per pound. <https://www.blueridgebeesupply.com/contact-us/> (336) 719-7878 270 Hickory Street, Suite 200 Mount Airy, NC 27030 [blueridgebeesupply@yahoo.com](mailto:blueridgebeesupply@yahoo.com)
- You can pay for your Virginia State Beekeepers Association Dues by going to their website. Sign up online (<https://www.virginiabeekeepers.org/join-us>) or print this form

<https://www.virginiabeekeepers.org/resources/Documents/printable%20membership%20form.pdf>

and send via USPS mail to:

Ian Henry 5771 Hilltop Street Crozet, VA 22932

- One year from the date that you pay is your membership for the Virginia State Beekeepers Association.
- Beecheck.org BeeCheck is a voluntary communication tool that enables beekeepers and pesticide applicators to work together to protect apiaries through use of the BeeCheck mapping program. It is not a substitute for any state regulatory requirements.

### **New Business:**

- Apiary Registry by Field Watch – [www.fieldwatch.com](http://www.fieldwatch.com) <https://fieldwatch.com/blog-crop-news-extension-umn-edu-2020-06-use-fieldwatch-to-locate-sensitive-html/> If you register your hives, commercial sprayers of pesticides will go online to tell you within 48 hours that they are going to be spraying so that you can cover your beehives and protect them. There is a \$10,000 to \$50,000 fine if they do not notify you in Virginia. The bees can be uncovered after 4 to 6 hours. (When it is dry.)
- Cornell University has developed (USDA funded research) a new product coming out which should be on the market by February 2022. When mixed with sugar water can help bees detox. The Cornell Article dated May 21, 2021 is attached to the minutes. The product is called “Beemunity Lick Brick”. Thanks to Tim Lutz for providing this information.
- From Cathy Hounshell – When ordering mite treatment or products with an expiration date from Mann Lake, any products not used before reaching the expiration date, you can ask for a refund on unused product(s).
- From Tim Lutz – In the near future EPA/FFDA will amend the API-Bioxal (oxalic acid) to be used year round in bee colonies for control of Varroa Mites.
- From Mickey Cunningham – USDA Report for Colony Losses for 2020-2021 by Quarter from Jan. 1, 2020 to June 30, 2021 – colony losses for 2020- 31% and Jan 1 to June, 2021 – 11% This will be attached to the minutes.
- VSBA membership – pay Ian Henry Treasurer, 5771 Hilltop Street Crozet, Virginia 22932
- VSBA Fall Meeting **NOT** coming to Blue Ridge Community College rather Smithfield

### **Hive Report: What Should You Be Doing with Your Hives?**

Check for Mites & treat when necessary

Replace bad queens

Check your batteries for your electric fence

Look out for Small Hive Beetles –SHB

### **Bees in The News:**

- Study Shows Amygdalin in Almond Nectar Can Reduce Viruses and Gut Parasites in Honey Bees

<https://www.ars.usda.gov/news-events/news/research-news/2021/study-shows-amygdalin-in-almond-nectar-can-reduce-viruses-and-gut-parasites-in-honey-bees/>

**Raffle Winners:**

Everyone present received a free head of cabbage.

**Next Meeting:** October 28, 2021 6:30 p.m. Pioneer Church located at 615 Max Meadows Road Max Meadows, VA 24360.

**Adjourned** at 7:57 p.m.

Respectfully submitted,  
Connie Armentrout, MEBA Secretary

**Number of Colonies, Maximum, Lost, Percent Lost, Added, Renovated, and Percent Renovated with Five or More Colonies — Virginia: Quarterly, 2020-2021**

Quarter	Number of colonies <sup>1</sup>	Maximum colonies <sup>2</sup>	Lost colonies	Percent lost <sup>3</sup>	Added colonies	Renovated colonies <sup>4</sup>	Percent renovated <sup>5</sup>
	(number)	(number)	(number)	(percent)	(number)	(number)	(percent)
January-March 2020 .....	6,000	7,000	1,100	16	1,600	60	1
April-June 2020 .....	7,500	8,000	1,200	15	4,800	1,300	16
July-September 2020 .....	8,500	8,500	1,200	14	910	730	9
October-December 2020 ....	8,000	8,500	1,000	12	70	450	5
January-March 2021 .....	7,000	7,000	1,400	20	2,300	50	1
April-June 2021 .....	8,000	8,500	530	6	3,100	820	10

<sup>1</sup> Number of colonies as of January 1, April 1, July 1, and October 1.

<sup>2</sup> January 1 number of colonies plus all colonies moved into that state during the quarter.

<sup>3</sup> Percent lost is the number of lost colonies divided by maximum colonies except for the United States, where percent lost is the number of lost colonies divided by the January 1 number of colonies.

<sup>4</sup> Defined as any surviving colony that was requeened or received new honey bees through nuc or package.

<sup>5</sup> Percent renovated is the number of renovated colonies divided by maximum colonies except for the United States, where percent renovated is the number of renovated colonies divided by the January 1 number of colonies.

**Number of Colonies, Maximum, Lost, Percent Lost, Added, Renovated, and Percent Renovated with Five or More Colonies — West Virginia: Quarterly, 2020-2021**

Quarter	Number of colonies <sup>1</sup>	Maximum colonies <sup>2</sup>	Lost colonies	Percent lost <sup>3</sup>	Added colonies	Renovated colonies <sup>4</sup>	Percent renovated <sup>5</sup>
	(number)	(number)	(number)	(percent)	(number)	(number)	(percent)
January-March 2020 .....	6,000	8,000	1,100	14	600	680	9
April-June 2020 .....	7,500	7,500	570	8	1,600	1,500	20
July-September 2020 .....	8,000	8,000	540	7	210	800	10
October-December 2020 ....	7,500	7,500	550	7	120	800	11
January-March 2021 .....	7,000	7,500	1,200	16	1,700	720	10
April-June 2021 .....	8,000	9,000	170	2	1,900	390	4

<sup>1</sup> Number of colonies as of January 1, April 1, July 1, and October 1.

<sup>2</sup> January 1 number of colonies plus all colonies moved into that state during the quarter.

<sup>3</sup> Percent lost is the number of lost colonies divided by maximum colonies except for the United States, where percent lost is the number of lost colonies divided by the January 1 number of colonies.

<sup>4</sup> Defined as any surviving colony that was requeened or received new honey bees through nuc or package.

<sup>5</sup> Percent renovated is the number of renovated colonies divided by maximum colonies except for the United States, where percent renovated is the number of renovated colonies divided by the January 1 number of colonies.

**Number of Colonies, Maximum, Lost, Percent Lost, Added, Renovated, and Percent Renovated with Five or More Colonies — United States: Quarterly, 2020-2021**

Quarter	Number of colonies <sup>1</sup>	Maximum colonies <sup>2</sup>	Lost colonies	Percent lost <sup>3</sup>	Added colonies	Renovated colonies <sup>4</sup>	Percent renovated <sup>5</sup>
	(number)	(number)	(number)	(percent)	(number)	(number)	(percent)
January-March 2020 .....	2,876,100	(X)	415,110	14	511,160	153,390	5
April-June 2020 .....	2,972,000	(X)	300,990	10	536,170	626,870	21
July-September 2020 .....	3,175,330	(X)	411,490	13	348,280	381,620	12
October-December 2020 ....	3,135,340	(X)	484,920	15	271,500	128,990	4
January-March 2021 .....	2,923,240	(X)	372,630	13	308,530	156,270	5
April-June 2021 .....	2,855,070	(X)	255,860	9	677,690	480,380	17

<sup>1</sup> Number of colonies as of January 1, April 1, July 1, and October 1.

<sup>2</sup> January 1 number of colonies plus all colonies moved into that state during the quarter.

<sup>3</sup> Percent lost is the number of lost colonies divided by maximum colonies except for the United States, where percent lost is the number of lost colonies divided by the January 1 number of colonies.

<sup>4</sup> Defined as any surviving colony that was requeened or received new honey bees through nuc or package.

<sup>5</sup> Percent renovated is the number of renovated colonies divided by maximum colonies except for the United States, where percent renovated is the number of renovated colonies divided by the January 1 number of colonies.

(X) Not applicable.

Enc 3



## NEWS

# Pollen-sized technology protects bees from deadly insecticides



May 21, 2021 | By Krishna Ramanujan

A Cornell-developed technology provides beekeepers, consumers and farmers with an antidote for deadly pesticides, which kill wild bees and cause beekeepers to lose around a third of their hives every year on average.

An early version of the technology – which detoxified a widely-used group of insecticides called organophosphates – is described in a new study, “[Pollen-Inspired Enzymatic Microparticles to Reduce Organophosphate Toxicity in Managed Pollinators](#),” published May 20 in Nature Food. The antidote delivery method has now been adapted to effectively protect bees from all insecticides, and has inspired a new company, [Beemunity](#), based in New York state.

Studies show that wax and pollen in 98% of hives in the U.S. are contaminated with an average of six pesticides, which also lower a bee’s immunity to devastating varroa mites and pathogens. At the same time, pollinators provide vital services by helping to fertilize crops that lead to production of a third of the food we consume, according to the paper.

“We have a solution whereby beekeepers can feed their bees our microparticle products in pollen patties or in a sugar syrup, and it allows them to detoxify the hive of any pesticides that they might find,” said James Webb, M.S. ‘20, a co-author of the paper and CEO of Beemunity.

First author Jing Chen is a postdoctoral researcher in the lab of senior author Minglin Ma, associate professor in the Department of Biological and Environmental Engineering in the College of Agriculture and Life Sciences (CALS). Scott McArt, assistant professor of entomology in CALS, is also a co-author.

The paper focuses on organophosphate-based insecticides, which account for about a third of the insecticides on the market. A recent worldwide meta-analysis of in-hive pesticide residue studies found that, under current use patterns, five insecticides posed substantial risks to bees, two of which were organophosphates, McArt said.



The researchers developed a uniform pollen-sized microparticle filled with enzymes that detoxify organophosphate insecticides before they are absorbed and harm the bee. The particle's protective casing allows the enzymes to move past the bee's crop (stomach), which is acidic and breaks down enzymes.

Microparticles can be mixed with pollen patties or sugar water, and once ingested, the safe-guarded enzymes pass through the acidic crop to the midgut, where digestion occurs and where toxins and nutrients are absorbed. There, the enzymes can act to break down and detoxify the organophosphates.

After a series of in vitro experiments, the researchers tested the system on live bees in the lab. They fed a pod of bees malathion, an organophosphate pesticide, in contaminated pollen and also fed them the microparticles with enzyme. A control group was simultaneously fed the toxic pollen, without the enzyme-filled microparticles.

Bees that were fed the microparticles with a high dose of the enzyme had a 100% survival rate after exposure to malathion. Meanwhile, unprotected control bees died in a matter of days.

Beemunity takes the concept a step further, where instead of filling the microparticles with enzymes that break down an insecticide, the particles have a shell made with insect proteins and are filled with a special absorptive oil, creating a kind of micro-sponge. Many insecticides, including widely-used neonicotinoids, are designed to target insect proteins, so the microparticle shell draws in the insecticide where it is sequestered inert within the casing. Eventually, the bees simply defecate the sequestered toxin.

The company is running colony-scale trials this summer on 240 hives in New Jersey and plans to publicly launch its products starting in February 2022. Products include microparticle sponges in a dry sugar medium that can be added to pollen patties or sugar water, and consumer bee feeders in development.

“This is a low-cost, scalable solution which we hope will be a first step to address the insecticide toxicity issue and contribute to the protection of managed pollinators,” Ma said.

Jin-Kim Montclare, a researcher at New York University’s Tandon School of Engineering, is a co-author.

The technology is licensed through Cornell’s [Center for Technology Licensing](#) (CTL). Ma and McArt are advisors for Beemunity.

The study was funded by the U.S. Department of Agriculture’s National Institute of Food and Agriculture, the National Institutes of Health and the National Science Foundation.

*[This article also appeared in the Cornell Chronicle.](#)*

## Keep Exploring



NEWS

SEPTEMBER 15, 2021

### Cooperative Extension in NYC: 'Uniquely suited to help'

Cornell Cooperative Extension + Agriculture + Food

NEWS

SEPTEMBER 16, 2021

### NIH-funded research to address rising male infertility

Paula Cohen, associate vice provost for life sciences, is leading an eight-year, \$8 million, multi-institution grant to untangle the complex genetic rulebook for how sperm develops.

Molecular Biology and Genetics + Genetics + Medicine