

(L-r) Mike Mabry, Bullitt County Beekeepers; Sarah Preston, University of Kentucky graduate student; and Neil Hunt, president of Pike County Beekeepers, examine Varroa mites.



Kentucky Queen Bee Breeders kick off their inaugural year

Dwight Wells of Purdue Bee Labs addressed a March meeting of the Kentucky Queen Bee Breeders Association about the Purdue Mite Biter queen program. He discussed how Kentucky beekeepers can better prepare their hives to accept inseminated queen bees.

This talk was followed by a slide show assessing mite damage, in which honey bees chewed the legs off Varroa mites. (We imagine there was cheering.)

Under the microscopes of Dr. Tom Webster of Kentucky State University, the members analyzed Varroa mites and discussed the merits of an association focused on queen production.



Dr. Tom Webster of Kentucky State University (standing), works with Claude Nutt, Oldham County.

Curd, new Jackson Co. association president, seeks program presenters

Congratulations to Philip Curd, newly named president of the Jackson County Beekeepers (also known as the Dark Honey Producers Association). Philip and the group are completing their meeting plans for the rest of this year and seek presenters for meetings after April. They are flexible as to date and topic. Their meetings regularly begin at 6 p.m. EDT on the second Thursday of each month during the beekeeping season.

Philip's email is prcurd@prtcnet.org.



American Honey Princess visits

Hope Pettibon (center), 2017 American Honey Princess, visited Kentucky Agriculture Commissioner Ryan Quarles (second from left) last month. She was in town to appear at the Bluegrass Beekeepers School in Frankfort. Visiting with her is (left) Ken Daniels, president of Capital City Beekeepers; State Apiarist Dr. Tammy Horn Potter (second from right); and Marsha Bezold, "Bee Friendly Frankfort" project director. (KDA photo)

State Apiarist's report

By Dr. Tammy Horn Potter

As beginning beekeepers place orders for honey bees, this is my yearly reminder: **“Buyer beware.”**

If I have to buy bees, and the choice is between a nuc (a small five-frame colony) or a package of honey bees, I will buy a nuc for one simple reason: A healthy hive has “overlapping generations.”

Nucs can be available in a wide variety of sizes, but for most beginners, five-frame nucs can handle adverse weather more easily than a package.

A five-frame nuc consists of a mated queen, her daughters, and four drawn-comb frames of brood and honey. The fifth frame provides the honey bees inside the nuc some space to expand without swarming, so this frame may not be as “full” as the remaining four frames. So if you see a frame that doesn't seem as if it has as many honey bees as the others, be aware that this is normal. The seller is not trying to cheat you.

Regardless if it is a 3-frame or 5-frame nuc, the nuc equipment should be in good shape (no repaired frames, old woodenware, wax so old that it is blackened). The wax



Carl Jackson, president of the Whitley County Beekeepers Association, demonstrates to the Eastern Kentucky Winter Bee School an ingenious feeder with different options.

- It has an area where a beekeeper can put a queen cage so that the beekeeper doesn't have to wedge the cage between two frames.
- It also has a removable panel in the precise shape of a pollen patty, so you can remove the panel, feed a pollen patty, and then replace the panel.

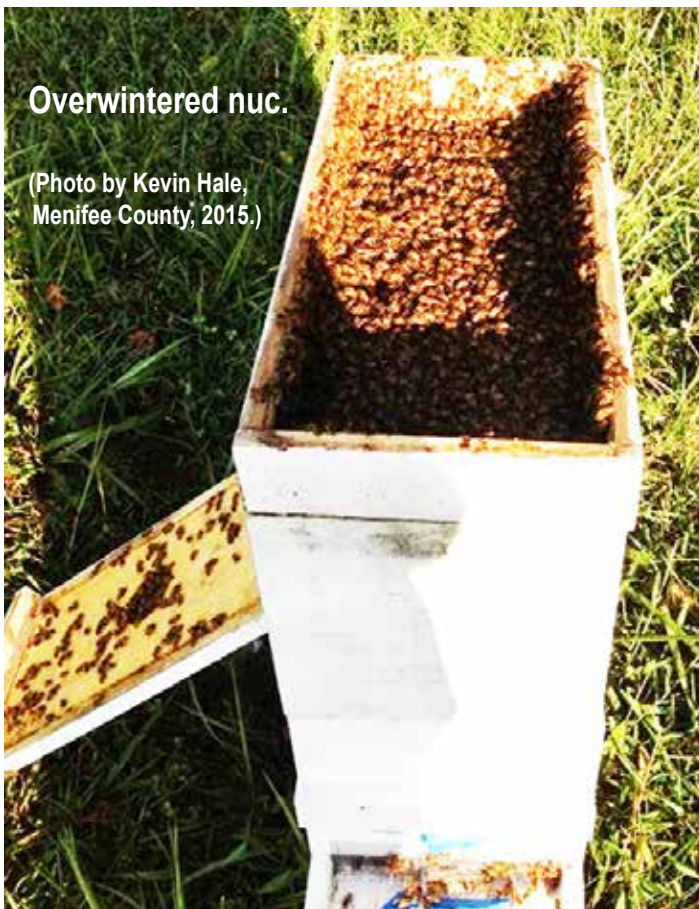
foundation should not be older than five years. The wax foundation is the “lungs of the beehive.”

Many sellers create nucs from new perforated cardboard, so there are fewer chances of diseases being spread. Keep in mind that these cardboard nucs can “leak” bees. You should come prepared with a screened net (lightweight) to transport your nucs. If you are stopped at a traffic light and your straggler bees sting someone, you could find yourself in a lawsuit if you haven't taken precautions to prevent an incident.

Nucs should have this year's queen (2017), unless the seller tells you that the queen is last year's queen. There is nothing wrong with an over-wintered queen as long as her laying pattern is solid, but the seller should clearly state the queen's age. You may need to requeen in the middle of summer, and you need to be prepared for that.

Buyers also must be flexible with the seller's schedule. Weather-related events may delay the arrival of nucs and packages. Adverse April weather will impact a queen bee's ability to mate. A random spraying incident near an orchard may impair drone sperm viability. Most queens that you buy are “open-mated,” making them vulnerable to environmental factors beyond anyone's (and any bee's) control.

The seller will often ask buyers to come either early in the morning before bees want to fly, or later in the evening, when straggler bees have returned. This request is not to inconvenience you; it is for the honey bees inside the nuc. It



Overwintered nuc.

(Photo by Kevin Hale, Menifee County, 2015.)

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Apiarist, *continued*

is your investment, and the buyer does not want your nuc to burn up in the middle of the day or have your nuc “leak” bees that instinctively want to fly in the middle of the day.

Nucs are not always perfect. Sometimes, if a buyer does not inspect the frames, the buyer may find diseased comb once he or she arrives home. That is why I caution beekeepers to do a quick inspection before money changes hands.

The demand for nucs outstrips supply, so many beginners start with packages. Just be aware that packages need consistent nutrition to do well, and Kentucky’s mercurial weather patterns may prevent the worker bees from flying.

Also, when dealing with packages, there is no rule that says that the queen inside the cage must be accepted by the workers. Sometimes, packages are ready only 48 hours in advance of your purchase, so there can be some issues as you install your package.

It will help packages to get started if you have a frame or two of drawn foundation.

Remember, nucs and packages are small living colonies. As such, they are vulnerable to the twin threats of Varroa mites and small hive beetles, whether you see them or not.

Former State Apiarist **Phil Craft** adds that “beginners should buy nucs from a highly reputable source. Having an experienced beekeeper go with you is advised.”

Finally, a tip from Florida entomology professor **Jamie Ellis**: A nuc is a great first-aid kit for approximately 95 percent of all problems associated with a weak hive.

The only exception is if the hive has American foulbrood. Then, since there is no cure for American foulbrood, you must burn it. But if any other disease weakens a hive, such as chalkbrood, sacbrood, European foulbrood, a queenless

Bloodroot, an early pollen source for honey bees.

(Gin Petty photo)



State Apiarist’s schedule

- **April 3:** Washington County.
- **April 6:** Wild Ones.
- **April 8:** Queen Production Workshop, Somerset.
- **April 13-14:** Williams Queen Production Workshop.
- **April 18:** Breckinridge County.
- **April 24-25:** Honey Bee Health Coalition.
- **April 28:** Campbellsville University Earth Day celebration.

hive, or a hive that has run out of honey, it can be helped by merging it with a “first-aid nuc.”

There is a proper procedure to this process: A beekeeper must kill the queen in the weak hive first, let the weak hive sit queenless for 24-48 hours, and then combine it with the first-aid nuc.

Maintaining a first-aid nuc must become standard beekeeping practice now that beekeepers can no longer buy over-the-counter antibiotics. As inconvenient as it is not to have Terramycin readily available any longer, honey bees have amazing beneficial bacteria in their gut.

In the January 2017 issue of *Bee Culture*, **Rebecca Novak Tibbitt** said, “The microbial communities in a honey bee’s gut plateau with 109 bacteria by their eighth day in the hive.” While antibiotics are wonderful tools, they can kill these beneficial biological tools the honey bees have.

Monarch butterflies face decline

Although *BeeLines* is primarily about honey bees, many of the same flowers that our honey bees love also provide important fuel for the monarch butterflies on their migrations through Kentucky both to and from Mexico.

Unfortunately, the monarch populations have taken a hit this year. The number of monarch butterflies wintering in Mexico dropped by 27 percent this year, reversing last year’s recovery from historically low numbers, according to a study by government and independent experts.

Experts speculate the decline could be due to late winter storms last year that blew down more than 100 acres (40 hectares) of forests where migrating monarch butterflies spend the winter in central Mexico.

See **APIARIST**, page 4

Apiarist, *continued*

Millions of monarchs make the 3,400-mile (5,500-kilometer) migration from the United States and Canada each year, and they cluster tightly in the pine and fir forests west of Mexico City. They are counted not by individuals, but by the area they cover.

Storms and cold take toll

“The reduction in the area of forest they occupied this year is most probably due to the high mortality caused by storms and cold weather last year,” said Omar Vidal, the head of the Mexico office of the World Wildlife Fund. “It is a clear reminder for the three countries that they must step up actions to protect breeding, feeding and migratory habitat.”

Officials estimate the storms in March 2016 killed about 6.2 million butterflies, almost 7.4 percent of the estimated 84 million that wintered in Mexico, said Alejandro Del Mazo, Mexico’s commissioner for protected areas. The monarchs were preparing to fly back to the U.S. and Canada at the time the storm hit.

While no butterfly lives to make the round trip, a reduction in the number making it out of the wintering grounds often results in a decline among those who return the next year.

How state beekeepers can help

Kentucky beekeepers can assist monarch butterflies by planting Common milkweed (*Asclepias syriaca*). Common milkweed is the preferred food for monarch butterfly caterpillars and can provide a good nectar flow even during dry years. Most nectar is produced in the afternoon and evening. Connie Krochmal states that some beekeepers can harvest up to 50 pounds of honey in some areas, specifying that the best yield is from plants growing in clay soils (*Bee Culture*, Sept. 2016).

Swamp milkweed (*Asclepia incarnata*) also seems like a good milkweed to grow from seed, and in some areas, it can provide a surplus honey crop. However, I would recommend beekeepers stay away from planting whorled milkweed (*Asclepias verticillata*), since it can be toxic to animals.

Read more at: phys.org/news/2017-02-monarch-butterfly-percent-mexico.html



The packaging on seed packets of milkweed emphasize the plant’s important role in pollination.

Downloadable educational presentations on KDA website

The Kentucky Department of Agriculture (KDA) website’s Honey Bee page (kyagr.com/statevet/honeybees.html) has information, lesson plans, and classroom materials available. Presenters can download and use the material to educate school children and the public about honey bees and pollinators.

The materials were developed by **Dr. Tammy Horn Potter** and **Jennifer Elwell** of Shepherdsville, executive director of **Kentucky Agriculture and Environment in the Classroom Inc.** KAEC promotes agriculture education in Kentucky schools.

Follow these links to the webpages and Google Drive folder with lesson plans, information about pollinators, and activities for National Honey Bee Day, August 19.

drive.google.com/drive/folders/0B3KmLIfs2agRaEVibVZjUXZVSVk?usp=sharing

teachkyag.org/news--views/celebrate-national-honey-bee-day-with-classroom-lessons-and-activities

beeslouise.org/p/lesson-plans-activities-exhibits.html



Last page of this newsletter:

An informative honey bee poster developed by Tammy and Jennifer, available for download at kyagr.com.

Dwight Wells appearances highlight Bee Education events

APRIL

- **April 6: Sustainable Beekeeping.**

Somerset Public Library, 304 S Main St. Somerset, 7-9 p.m. EDT. **Dwight Wells** will discuss sustainable beekeeping. This will be helpful to all stages of beekeeping. This free event is sponsored by **Kentucky Queen Bee Breeders' Association Inc.**

- **April 7-8: Queen Production workshop.**

Dwight Wells, Heartland Bee Breeders Cooperative. Pre-registration is required. Cost is \$75 to cover supplies. There are several hotels in Somerset.

Pulaski County Extension Office, 28 Parkway Dr., Somerset.
Dorothea Morgan, lavenderlanefarms@gmail.com (606) 871-7300.

- **April 8: Honey Bee symposium.**

Speakers: **Jerry Hayes**, **Sam Comfort**, and **Jerome Blankenship**. Grand Hall of the Southwest Virginia Higher Education Center, One Partnership Circle, Abingdon, VA 24210. 9 a.m.-5 p.m. EDT. Registration \$50 at the door, lunch included.

More: [Phil Ernst, pblevins@vt.edu](mailto:PhilErnst@vt.edu).
Payment and registration at website: HighlandsBeekeepers.com.

- **April 10: Bluegrass Beekeepers**

Association. Special guest **Dwight Wells** of Ohio, affiliated with Purdue Bee Labs and Heartland Honey Breeders Co-op, and an officer in West Central (Ohio) Beekeepers, will speak 7-9 p.m. EDT at the Fayette County Extension Office, 1140 Harry Sykes Way (formally known as Red Mile Place), Lexington. Please bring a potluck dish. Wells will spend a few hours with us discussing sustainable beekeeping. This is a free event, sponsored by the **Kentucky Queen Bee Breeders' Association Inc.**

- **April 12-15: Field Workshop.**

Kent Williams Apiary. 580 State Route 385-North, Wingo (Graves Co.), 9 a.m.-5 p.m. CDT. Each day similar in content. Lunch, snacks, and drinks provided. No cost for the school; donations accepted for cost of food. Children and spouses welcome. Lodging available in Murray and Mayfield, or primitive camping is welcomed on the Williams farm.

- **April 29: Beyond Beekeeping School.**

Boone County Enrichment Center, 1955 Burlington Pike (For GPS use 1824 Patrick Drive), Burlington. Speaker: **Phil Craft**. 9 a.m.-4 p.m. EDT. Cost is \$15



Dwight Wells, of Purdue University and the Heartland Honey Bee Breeders Co-Op. (Photo by Jerry Kelley, wyso.org)

for members, \$20 for non-members, \$5 for kids 12 and younger. Includes lunch. While many resources are available, including medications, nutritional supplements, and innovations in equipment, knowing when and how to make use of them is vital to maintaining healthy hives. Must pre-register; pre-registration forms must be received by April 22.

Registration form at NKYbeekeepers.com.
Questions to Anna Gurley, awgurley@gmail.com,

MAY

- **May 19-20: Kentucky State University Queen Production Workshop,**

Jenny Wiley State Park, Prestonsburg. Limited seating, registration required. **Dr. Tammy Horn Potter** and **Doug Potter**, coordinators.

Laura Rogers, KSU Small Farm Area Agent,
(606) 344-0712. Email laura.rogers@kysu.edu.

Bee school stirs up buzz for beekeeping

By Laura Acchiardo, *The Gleaner*
Used by permission.

“My bees are the friendliest bees you’ll ever meet,” said **David Kelley** at the **Audubon Beekeepers Association Bee School** held March 4. “They’ll come right up to you to say hello.”

This is the bee school’s twelfth year, and association president **Larry Stone** says the event “keeps continuously growing. This year we’ve got almost 200 signed up.”

The bee school offered beginners, intermediate, and advanced topics, including beekeeping equipment, hive inspection, queen rearing, cooking with honey, essential oils, and bee-friendly plants and trees. Knowledgeable instructors came from all over the region to teach at the one-day school.

DeeAnn Thaler from Jasper, Indiana, came to learn more about her newfound hobby. “I’m an avid gardener,” she said. “I love flowers and landscaping. I love being in nature and being outside. I really want to help repopulate the bees in our area. We’ve made our own boxes for the hives. I’m excited to learn more about beekeeping, and this is my first time here.”

Stone said the club “promotes everyone we can to get into bees. The more bees people keep, the more it’ll help the bee population. Out in the wild you used to see a lot of bees, but now it’s rare to find wild bees. Varroa mites came in the late 1980s, and they carry about 27 viruses that kill bees,” he said. Stone also warns against pesticides, which also can kill bees and entire hives.

Bees swarm once to twice a year, and hives are where they propagate. The old queen will leave, take half the bees and start another hive. If people have bees at their house, chances are they’ll swarm, he said.



“One of the hardest parts of beekeeping is keeping the bees alive,” Stone said. “There are so many different diseases. You have to learn quite a bit, quickly. If you don’t treat them for diseases or pests, the bees won’t live.”

Audubon association president Larry Stone shows the school where to place the queen bee, and how to unpack bees that have been shipped.



Participants at the Audubon Beekeepers Association Bee School shop at vendor booths.

All photos by MIKE LAWRENCE, used by permission of *The Gleaner*.

Bees can’t get wet either, Stone also warned. “You have to ventilate the hive. If you don’t, water droplets will collect on the top and drip on them. Wet bees die,” he explained.

The Audubon association holds monthly meetings and assigns mentors to novice beekeepers to help foster their hives. The association also gives beekeeping demonstrations at local schools and agricultural events.



Brian Collins of Richland, Indiana, loads up bee hive frames he bought at the Bee School.

Meeting videos available from Honey Bee Health Coalition

Please take time to read the materials at the **Honey Bee Health Coalition** website, honeybeehealthcoalition.org. The Varroa mite guide and videos discuss the various treatment options as well as showing how to sample your bees. These materials are also available on the Kentucky State Beekeepers Association website, and are linked at the Kentucky Department of Agriculture website, kyagr.com.

Bee clubs are welcome to enhance their meetings with these materials and videos, without screening fees or rights restrictions, so consider showing some of these.

\$300 subsidy available for hive data reporters

April 15 deadline to apply

The **Bee Informed Partnership** is seeking members and member clubs for its **2017 Sentinel Apiary Program**.

The program is aimed mostly at sideline and backyard beekeepers, although commercial beekeepers are also welcome. The deadline to apply is April 15.

The program is designed to help beekeepers improve their colony management, and to share data with beekeepers

in their regions. Specific information such as Varroa mite counts and nosema spores is gathered in this data.

The Bee Informed Partnership has a hive scale subsidy available for the first 70 registrants, but this program is available to all who wish to follow the guidelines of monitoring and mailing samples. Only one \$300 subsidy available per participant.

To become a Sentinel Apiarist,
email kkulhane@umd.edu or call (301) 405-3799.
More information: beeinformed.org.

Sentinel Apiary Project

www.beeinformed.org

4112 Plant Sciences Building
College Park, MD 20742
(301) 405-3799



We are offering funding for hive scales to help you become a Sentinel Apiary! In order to receive up to a **\$300 subsidy** towards the purchase of a hive scale you must:

- Purchase a Sentinel supported Hive Scale after 1/1/17*
- Complete and send in the Enrollment Application and Participant Information Sheet
- Send in payment

Can I still participate if I have an older hive scale?

Yes! All are welcome to apply but subsidy funding is limited to the above criteria.

Do I have to join as an individual?

Not at all! We encourage beekeeping clubs and groups to enroll in the Program as well as individuals. This encourages continued participation from year to year as members can rotate sampling responsibilities. Clubs are often able to pay for scales as well!

**Supported Hive Scales are provided by Solution Bee, Arnia, and Broodminder. Proof of purchase is required and can be in the form of a paid invoice or picture of the serial number.*

Cost

Please select cost with or without subsidy and **make checks payable to University of Maryland.**

Disease Load Monitoring	\$399		Disease Load Monitoring	\$399
Hive Scale Subsidy	-\$300	-OR-	Hive Scale Subsidy	\$0
Total	\$99		Total	\$399

If you would like to participate, please email Kelly at kkulhane@umd.edu for and Enrollment Application and Participant Information Sheet. Please allow 1-2 weeks to process applications and payments, at which time we will email a receipt to the address provided on the Enrollment Application. Please direct any questions to the above email or call us at the lab at (301) 405-3799.

When completed, please send Enrollment Application, Participant Information Sheet, Hive Scale Proof of Purchase, and payment to: Kelly Kulhanek, University of Maryland
4112 Plant Sciences Building, College Park, MD 20742



POLLINATORS

Flying insects, birds, and other animals help produce more than 150 food crops by moving pollen from flower to flower. The Kentucky Pollinator Plan was created to protect these important agriculture partners.

Pollinators are essential to the survival of more than 90 percent of the 250,000 flowering plant species on the planet.



Have you ever wondered why most flowers are colorful and have a fragrant smell? These floral nectar "guides" are advertisements to pollinators. Flowers reward pollinators by providing nectar, a sugary "bait" the pollinators consume for energy.



HONEY: A Sweet Reward



Female honey bees visit many flowers to collect nectar, pollinating flowers in the process. While they are foraging for nectar, they store it in a special stomach called the honey crop. The nectar mixes with bee enzymes that will help convert it to honey. Foraging bees must visit 2 million flowers to make a pound of honey!



The honey bees take the nectar back to their hive, which they share with as many as 60,000 other bees. They put it into the cells of the honey comb, which is either a beeswax foundation or provided by beekeepers. Honey is formed by a complex process in which honey bee enzymes convert the nectar into simple sugars, and they then evaporate any remaining water from the nectar by fanning their wings over the cells.



To protect their fuel source, the bees will cap the honey cells with wax. The capped cells indicate to the beekeeper that the honey is ready for collecting. In a good year, an older hive will make 180 or more pounds of honey each year. Bees need about 120 pounds for their use, and the extra honey may be collected. Hives in Kentucky typically provide 50 pounds of collectable honey.



Honey is an alternative to sugar and has a very long shelf-life. While honey production provides a profit for beekeepers, the flower pollination that occurs by bees making honey adds \$19 billion to the value of U.S. crops. Other bees contribute approximately \$6 billion to the value of U.S. crops. Many food crops, such as almonds, apples, blueberries, cranberries, kiwis, melons, pears, plums, and squash are dependent upon bees.



What's Pollen?

Pollen grains are "life-giving dust." Each plant produces unique pollen grains, which are groups of plant cells made by the male organ of the flower (stamen). The pollen contains part of the information (DNA) needed to form seeds within the female organ of a flower (pistil). Plant reproduction and seed development begin when the pollen touches the pistil. A pollinated flower will also grow a fruit to protect and hold the seeds, and the fruit is a food source for humans and animals. While the wind can move pollen for reproduction, animals do a much better job. Pollen is also a protein food for bees. A single colony can consume between 37.74 pounds of pollen a year.



Leave the Weeds, Feed the Bees

Scientists are working to find ways to keep bees healthy. One way you can help is to plant and protect bee-friendly flowers. More flowers equal more food for bees and nectar-loving pollinators. Another "bee best practice" is to wait until bees are less active—after 4 p.m.—to spray insecticides on yards, gardens, and field crops.



Sources:
Dr. Tammy Horn, Kentucky State Agrarist;
National Honey Board;
and The Pollinator Partnership

KADF
KENTUCKY AGRICULTURE
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