

Free queens that bite — mites, that is!

Dorothy Morgan distributes free queens, daughters from Purdue queen bee stock selected for their ability to chew the legs of Varroa mites. The queens were developed by the Purdue University Heartland Apicultural Society research program.



Pollinator research

Back To School month at area colleges, universities

August is traditionally back-to-school month. The following reports from students and researchers represent just a few of the directions pollinator research is taking in Kentucky.

Berea College / Eastern Kentucky University: Hannah Carter

Hannah Carter participated in a 10-week REU (Research Experience for Undergraduates) research program at Eastern Kentucky University, funded by the National Science Foundation. The program focused on disturbance ecology in central Appalachia.



Hannah Carter photo

Her projects concerned pollinator restoration, particularly on behalf of native bees, in areas of disturbance such as the surface mines of southeastern Kentucky.

Honey marketers discuss certifications, surveys

The **KSBA Honey Marketing Subcommittee** discussed the benefits of implementing a honey certification program similar to the ones implemented by state beekeeper associations in Wisconsin and Texas.

A two-tiered program was discussed at their July 17 meeting in the Hardin County Cooperative Extension Office.

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Honey Queen sets multiple State Fair visits Aug. 17-23

Maia Jaycox, 2017 American Honey Queen, will visit Louisville Aug. 17-23 during the Kentucky State Fair, the American Beekeeping Federation has announced.

Jaycox will make appearances throughout the Kentucky State Fair grounds and will be present at the Kentucky State Beekeepers Association booth. She will also speak to 4-Hers at Cloverdale on Aug. 17 from 4-5 p.m., and will appear at the Kentucky Department of Agriculture's Mobile Science Activity Center in the South Wing from 10-11 a.m. Aug. 18, 19, and 20. State Apiarist Tammy Potter has arranged these additional appearances to reach more people and provide more visibility for Jaycox's message that honey bees are essential to the pollination process and our food supply.

Prior to becoming American Honey Queen, Jaycox was the 2016 Iowa Honey Queen. A sophomore biology major at Iowa State University, she currently tends seven hives.

— American Honey Queen Program press release

More: Tammy Horn Potter, (502) 229-2950, or tammy.potter@ky.gov.



2017 Honey Queen
Maia Jaycox.

Honey Booth worker guidelines

By John Benham

- The one-pound jar is always the biggest seller and the most popular size in the stock, so competition is heavy.
- Cut comb in jars and boxes always sells out, and is the one product of which we never have enough.
- Some volunteers aren't aware that these rules are posted at the booth.
 - Be courteous.
 - Health Department rules require the use of a new taster spoon for each sample.
 - It is okay to present your honey, but **do not** try to change customers' minds from another choice they make.
 - Tell people of the candles, books, candy, *etc.* for sale.
 - Tell the manager if someone is running low on honey. The manager will call the beekeeper if someone is low.
 - Pull any honey that has fermented or crystallized.
 - Fully re-stock the table with honey and candles throughout the day, and at the end of the day restock and cover all products with cloth.

RENEW YOUR KSBA MEMBERSHIP at the State Fair!

Work schedule for associations

Tell **Betsy Ramey** of the **Kentuckiana Beekeepers Association**, (502) 767-7177 or Npbetsy@outlook.com, by **Aug. 4** how many tickets you need, if you are the listed coordinator for your association.

- Thursday 17 - Friday 18:** Bluegrass B.A. Jed Davis, (502) 857-2272, mandjed371@msn.com.
- Saturday 19:** Oldham County B.A. Claude Nutt, (502) 523-7151, cnutt@bellsouth.net.
- Sunday 20:** Shelby County B.A. Doug Steck, (502) 738-5397, dsteck923@gmail.com.
- Monday 21:** Allen County B.A. John Benham, (270) 404-0648, purebarrenriverhoney@gmail.com.
- Tuesday 22:** *First shift:* Capital City B.A. Ken Daniels, (502) 682-3144, kdwbs@aol.com.
Second shift: Kentuckiana B.A. Betsy Ramey, (502) 767-7177, npbetsy@outlook.com.
- Wednesday 23:** Mammoth Cave B.A. Barry Cowles, (270) 799-5106, beekeep2455@gmail.com.
- Thursday 24:** Grayson County B.A. Joe Taylor, (270) 897-8654, shopteacher@gmail.com.
- Friday 25:** Audubon B.A. Larry Stone, (270) 249-9431, larryrita72@att.net.
- Saturday 26:** Green River B.A. Ted Caldwell, (606) 787-4001, socaltlc@aol.com.
- Sunday 27:** Oldham County B.A. Claude Nutt, (502) 523-7151, cnutt@bellsouth.net.

PRICE LIST 2017

KSBA members who want to sell honey or beeswax products should deliver them either Sunday, Aug. 13, 1-3 p.m. EDT or Monday, Aug. 14, 9 a.m. - 6 p.m. EDT, and daily after that from 10 a.m.- 4 p.m. EDT.

Type	Selling Price	Price to Beekeeper (70% of sale price)
Extracted Honey		
8-ounce jar	\$ 8	\$ 5.60
1-lb. jar	11	7.70
Pint jar	14	9.80
1.5-lb. jar	14	9.80
2-lb. jar	20	14
2.5-lb. jar	22	15.40
Quart jar	25	17.50
5-lb. jar	35	24.50
8-ounce bear	8	5.60
12-ounce bear	10	7
2-ounce bear	3.75	2.60
Comb Honey		
1-lb. jar	\$ 14	\$ 9.80
2-lb. jar	22	15.40
Pint jar	18	12.60
2.5-lb. jar	24	16.80
Quart jar	27	18.90
1-lb. box	12	8.40
Ross Round	12	8.40
Creamed Honey		
8-ounce jar	\$ 10	\$ 7
1-lb. jar	14	9.80

Bulk Wax, lbs.	12	8.40
Pollen, 8 oz.	10	7



Check your labeling requirements at

kyagr.com/statevet/documents/OSV_BEE_label.pdf

PROJECTS ... from page 1

Carter conducted two projects. The first was a plant-pollinator network between flowering plants and the bees found at 11 field sites in southeastern Kentucky. “I observed direct interactions between flowering plants and bee families, species richness, diversity, and abundance of each plant and bee species through this project,” Carter said.

In her second project, Carter studied and quantified the pollination services of bees using sentinel sunflowers (*Helianthus annuus* and *Heliopsis helianthoides*).

Eastern Kentucky University: Mary Sheldon

Mary Sheldon is collecting honey samples to study honey contamination as part of her master’s degree in public health. She also offers informational bee talks, sponsored by a grant through Green Forests Work, LLC.



Mary Sheldon held a public information program at Buckhorn High School in Perry County.

Murray State University: MacKenzie Jones

The Murray State University (MSU) Apiary started out as a Presidential Scholars undergraduate student research project, and is promising to grow into much more. “My original research proposal was focused on breeding queens more tolerant of Varroa mites and suitable for western Kentucky and the surrounding region,” MacKenzie Jones said.

An agriculture education major, Jones wanted to use the bees to educate the community and promote pollinator- friendly habits and practices.

The MSU apiary (see May 2017 *BeeLines*) was built from poplar trees milled in Frankfort near the Kentucky



River. The trees were milled by Jones’s uncle, who owns Jones Wood.

The fence was erected over the course of two weekends by MSU faculty and Jones family members.

The Apiary itself is an eight-foot-tall, 36-x-60-foot enclosure located on the MSU Pullen Farm/Arboretum. It was built to provide a safe environment for up to 30 hives.

The enclosure provides enough room to teach within it. Teaching is also possible in a shelter nearby that will become an outdoor classroom.

Kentucky State University: Jacob Vincent

Jacob Vincent, a master’s degree program student, is working toward making an autoclave available to beekeepers to sterilize equipment.



Jacob (left) demonstrates his autoclave to KSBA treasurer John Benham.



Claire Rittschof photos

University of Kentucky: Entomology

Dr. Clare Rittschof, University of Kentucky assistant professor of entomology, studies honey bee neurobiology and behavior, with a focus on aggression. Her lab is studying the processes in the brain that shape individual aggressive behavior, the physiological features that make aggressive bees resilient to health stressors, robbing behavior, and the effect of queen stress on worker immune function.

Bernadette Mach developed a handout for pollinator habitat in the Ohio River Valley. Mach is a doctoral student working with **Dr. Daniel Potter's** program.



Bernadette Mach

Download the list, "Plants Bees Like Best," at growwise.org/ChallengeToolkit.

Adam Baker, graduate research assistant to **Dr. Daniel Potter**, is working on the following objectives:



Adam Baker

1. To assess the value of monarch waystations and investigate factors that may influence usage by monarchs (orientation in landscape, design, botanical composition, lines of sight, etc.). Also, how design influences predation levels and findability by monarchs.
2. Evaluate eight species of milkweed for use in Kentucky conservation plantings (attractiveness to monarchs, nutritional quality, feral vs. formal gardens, bloom and seed set, growth rates, disease susceptibility, alternative pollinators benefiting from milkweed).

3. Convert naturalized roughs on golf courses into monarch conservation plantings and create a certification for participation.
4. Offer insight on greenhouse production of milkweeds; potting medium, pot size, fertilizer rates and to identify possible greenhouse pests and their control.

Western Kentucky University: Anthony Trimboli

Thesis: An improved regional honey production model for the United States.

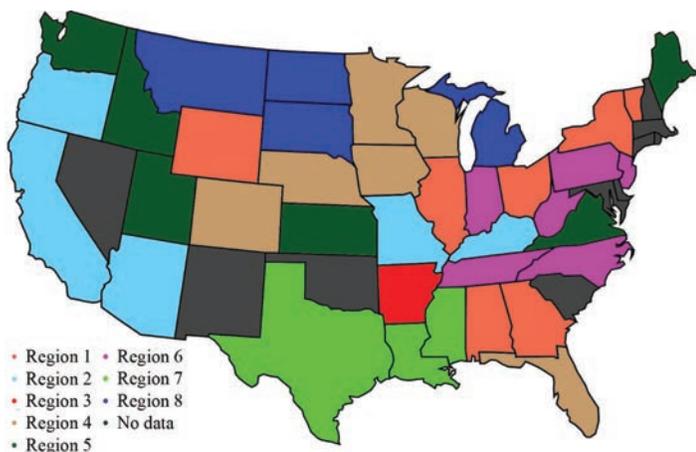
Currently there are three primary regional honey production mapping systems.

- The first is the system used by the USDA (Nye 1980), which divides the U.S. into seven geographical regions.
- The second system, used by the *American Bee Journal* (Graham 2016), divides the U.S. into eight honey production regions.
- The last system, used by *Bee Culture* magazine (Flottum 2017), divides the U.S. into seven regions.

All of these systems are based on geographical and climatic similarities between states.

While these systems are popular, to our knowledge, their scientific accuracy has not been studied.

This study sought a regional honey production model that demonstrates the true state-to-state honey production for the U.S. The goal was to statistically compare the existing models and several new models to identify an improved model for honey production regions in the U.S.



Trimboli's map includes Kentucky in a non-contiguous region with Arizona, California, Missouri, and Oregon (Region 2).

To accomplish this goal, nine new regional honey production models were developed using data from the U.S. Honey Production Reports (1986-2014) located on the USDA National Agricultural Statistics Service website.

Four of these models followed state lines, took into account Level II ecoregions, and minimized the number of ecoregions per honey production region. The remaining five models were purely data-based and often resulted in non-contiguous regions.

Although the states were in different eco-regions, with differing flora and climate, there is no rule that dictates that dissimilar eco-regions cannot have similar honey production.

All new models and the three existing honey production models were statistically compared. The statistically strongest model was one of the computer-generated models based purely on the data.

Trimboli's complete paper can be downloaded at <http://digitalcommons.wku.edu/cgi/viewcontent.cgi?article=2962&context=theses>.

Western Kentucky University: Big Red Beekeepers

The Western Kentucky University Big Red Beekeepers, going into their fifth year, are advised by **Dr. Bryan Reaka** and co-advisors **John Pace** and **Holly Young**.

The Big Red Beekeepers educate a future generation of beekeepers. The organization is expanding into research and queen rearing. The bees are located at the WKU Office of Sustainability.

"Each year since 2012 we have had student beekeepers participating in graduate research and thesis work at the WKU farm. We hope to see this continue to grow and more students participate in conservation and research on honey bees," said president Ilana Blunt.

Facebook page: [facebook.com/groups/434959773227091/](https://www.facebook.com/groups/434959773227091/)



(L-r) Big Red Beekeepers officers Ilana Blunt, president; Emily DeLetter, secretary; Natalie Guy, vice president; and Perri Kostecki, treasurer.



Berea College: Urban Farm

This was the first honey harvest from Berea Urban Farm, in 2015. Coordinator Richard Olson started beekeeping after bringing Berea College students to the Coal Country Beeworks yards for three days. He is now investigating an urban farming project with USDA.

YouTube video of Berea's bees: [youtube.com/watch?v=y8TnnSC1JVg](https://www.youtube.com/watch?v=y8TnnSC1JVg)

MARKETING ...from page 1

- The first tier would be a certification program for honey producers who make over 3,000 pounds of honey.
- The second tier would be more beneficial for hobbyists and sideliners beekeepers.

Much more input will be needed to decide on the full details of a completed program.

Discussion was also held on obtaining funding to launch this two-tiered system, with possibilities being applying for Kentucky Agricultural Development Fund and USDA Specialty Crop grant funds.

Depending on the success of these applications, funds could be used to hire a staff member to help KSBA meet certain benchmarks, offset expenses for pollen analysis, develop "KSBA Certified Kentucky Honey" labels, *etc.*

Other honey marketing topics were also discussed, including approaching the legislature to eliminate the 6 percent sales tax, and creating a specialty license plate honoring bees and beekeeping.

These topics, and the issue of a better approach for Kentucky beekeepers to market their Kentucky honey and providing appropriate oversight, will require more discussion.

Shannon Trimboli offered to survey for information on issues most important to Kentucky beekeepers, such as prices, types of bottles, and other marketing information. The committee could also survey customers buying honey at the KSBA Honey Booth about what they would like to see, whether they are willing to pay more for certified Kentucky honey, and if so, how much more.

Committee members attending were:

Rick Sutton, KSBA President
Shannon Trimboli, KSBA Webmaster
Tammy Potter, Kentucky State Apiarist
Jose Olivencia, Hardin County beekeeper
Keith Rogers, KDA Chief of Staff
Joe Bilby, KDA Attorney
Sean Southard, KDA Director of Communications

The next committee meeting, open to the public, will be held at the Kentucky State Fair at 1 p.m. EDT Tuesday, Aug. 22, in a room to be determined. If you plan to attend, please RSVP to Tammy Potter **by Aug. 10** so appropriate facilities can be arranged.

Tammy Potter - tammy.potter@ky.gov

State Apiarist's schedule

- **July 30-Aug. 4: Eastern Apiculture Society**, Newark, Delaware.
- **Aug. 7: Graves County Rotary Club**, 1301 West Broadway, Mayfield, KY 42066.
- **Aug. 8: USDA sampling**, Graves County.
- **Aug. 10: Dark Honey Producers Association**, potluck starting at 6 p.m. EDT, Jackson County Food Processing Center, 366 Highway 3443, Tyner, KY 40486.
- **Aug. 11-28:** Kentucky State Fair, Louisville.



I'm out of the office during August.

Please leave a message at (502) 229-2950 or email tammy.potter@ky.gov.

Book excerpt

Complete, nutritious pollen is the pollinators' reward

Pollen, the bane of allergy sufferers, is actually a densely nutritious food. Most flowers reward their insect visitors with pollen, or both pollen and nectar. Most flowers produce large quantities of pollen, enough to fertilize many flowers, plus a generous excess to feed their pollinators.

Pollen is a complete and nutritious food that contains carbohydrates, fats, proteins, vitamins, and minerals. Although nectar may contain small amounts of other nutrients, it is essentially a solution of sugar in water.

Some insects thrive on a diet of only pollen, and a combination of pollen and nectar is the only food of all 25,000 known species of bees, but no insect can grow on a diet of only nectar. Some insects, such as hawk moths and many butterflies, eat only nectar as adults, but do not grow and must carry over from the caterpillar stage the proteins, fats, and other nutrients required to produce eggs.

From *What Good Are Bugs?: Insects in the Web of Life*, pages 10-11, by Gilbert Waldbauer. Copyright 2003, Harvard University Press.