

Mites may show resistance to common miticide

2017-18 USDA results are a mixed bag

By Tammy Potter
Kentucky State Apiarist

Beekeepers worry about pesticide drift, but the pesticide results from the **2017-2018 USDA Honey Bee Health Survey** in Kentucky offer beekeepers data-based clarity on this issue.

The pesticide sample size is small, but the most prevalent pesticides in 2017-2018 have been beekeeper-applied miticides.

Further, the most prevalent miticide, **fluvalinate**, is far more widely applied in Kentucky than in the rest of the nation, and Varroa mites may have developed resistance to it.

Differences fall to spring

The 2017-2018 USDA Surveys represent results that show a wide variety.

The **fall 2017** Varroa mites are predictable in that mite populations are high, and in Kentucky, higher than national averages because of the lack of individual beekeeper sampling methods and/or using Varroa mite treatments to which the mites may have developed resistance. The pesticide chart shows a high use of fluvalinate (product name Apistan), but Varroa mites have shown resistance to fluvalinate since 2009.

See **STUDY**, page 4

Bee watchful

An intricate large-scale study of a honey bee face graces an entire tall wall (notice the auxiliary light unit at upper right) in the bee laboratory at the University of Minnesota. (Tammy Potter photo)



Dr. James E. Tew, state beekeeping specialist for the Alabama Cooperative Education System, will deliver two addresses at the Nov. 3 KSBA fall meeting in Shepherdsville.

“Forthright, folksy” Dr. Tew to address KSBA meeting

By Tammy Potter

We are honored to have distinguished honey bee authority **James E. Tew, Ph.D.**, sharing his insights at the Nov. 3 Kentucky State Beekeepers Association fall meeting.

Dr. Tew is a retired beekeeping expert from Ohio State University and is now working with the Alabama Cooperative Extension Service.

He is also one half of the “The Kim and Jim Show,” a monthly podcast in which he and *Bee Culture* editor **Kim Flottum** introduce beekeepers to researchers, non-profit organizations, and other “movers and shakers” in the apicultural world.

While the terms “folksy” and “humorous” have often been used to describe Dr. Tew’s talks, I have always appreciated the razor-sharp forthrightness with which he delivers sometimes-difficult truths facing beekeepers.

I often use his statistics, such as: It takes 252 million flowers for a moveable-frame hive to produce enough honey to get through a full calendar year. If that number doesn’t make a beekeeper stop and re-evaluate the forage available to one’s hives, nothing will.

KSBA attendees will appreciate his clarity, distilled from a lifetime of teaching, research, and continuing to do outreach in new formats.

Attendees may join KSBA at the door. Lunch will be included in the cost of membership.

KSBA fall meeting schedule of events

Friday, Nov. 2:

KSBA Board Meeting

7 p.m. EDT. Holiday Inn Express,
365 Brenton Way, Hillville. (502) 955-4984

2019 KSBA budget, new officers, and
2019 speaking calendar to be discussed.
Associations, please send representatives.

Saturday, Nov. 3:

KSBA Fall Meeting

Bullitt Central High School
1330 Highway 44 East, Shepherdsville
Free to members - join at the door

Agenda (Times EDT)

- 8-9 a.m. Registration
9 a.m. Welcome
9:30-10 a.m. **Dr. Jim Tew**, Wintering hives
10:30 a.m. Break
10:45 a.m. Breakout sessions
- Dr. Tammy Potter, 2017-18 USDA study results
 - John Benham, Colony assessment
 - Dr. Tom Webster, Nosema
 - Kent Williams, Queen rearing 101
 - Trevor Quails, Beekeeping success tips
 - Larry Stone, Beekeeping 101
- 11:45 a.m. Lunch
1 p.m. **Dr. Jim Tew**, The desperate world of failing queens and laying workers
2-3 p.m. Breakout sessions
- John Benham, Beekeeping 201
 - Dr. Tom Webster, Mites
 - Kent Williams, Queen rearing 201
 - Trevor Quails, Small hive beetles
 - Larry Stone, Beekeeping 201
- 3-4 p.m. **KSBA business meeting**
Door prizes, adjournment

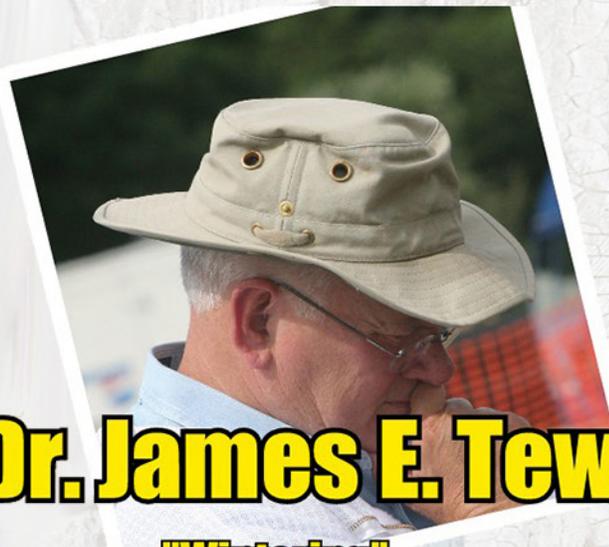
Plan to bee in Nashville

The Heartland Apiculture Society will hold next year's summer meeting **July 10-12, 2019**, on the campus of Nashville's Belmont University.

Information: heartlandbees.org/has-2019-nashville

Kentucky State Beekeepers Association Fall Bee School

November 3, 7 a.m. - 4 p.m.
Bullitt Central High School
1330 Highway 44 East
Shepherdsville, KY 40165
\$15.00 each
(Free to KSBA Members)



Dr. James E. Tew

"Wintering"

**"The Desperate World of Laying Workers,
Failing Queens."**



Other Guest Speakers:

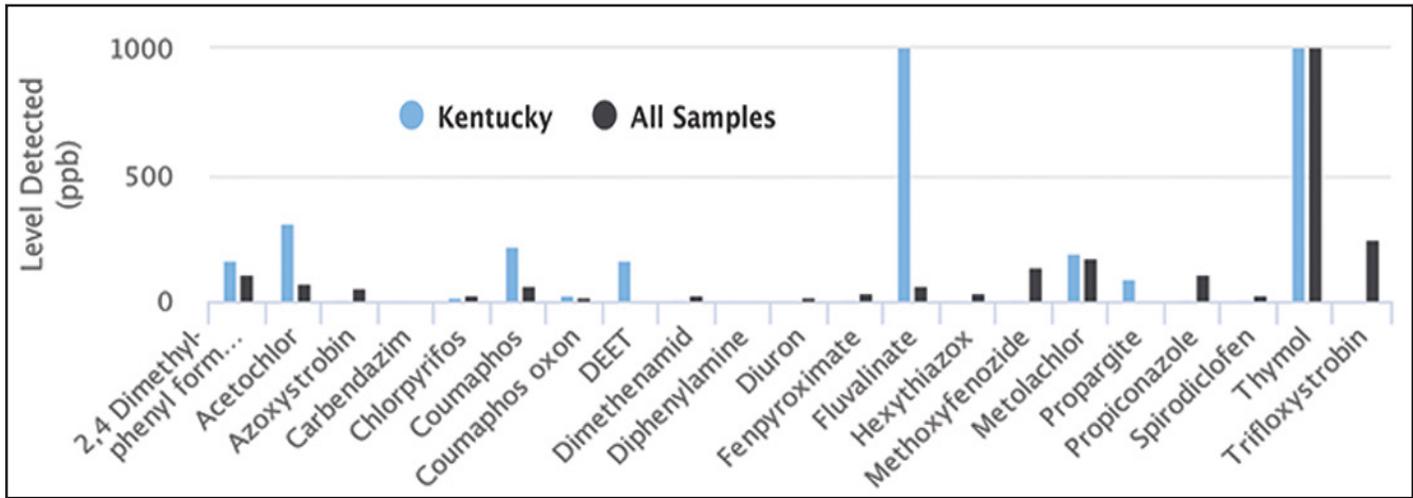
Kent Williams
John Benham
Dr. Tammy Potter
Larry Stone
Shannon Trimboli
Trevor Quails
Dr. Tom Webster

Lunch Provided

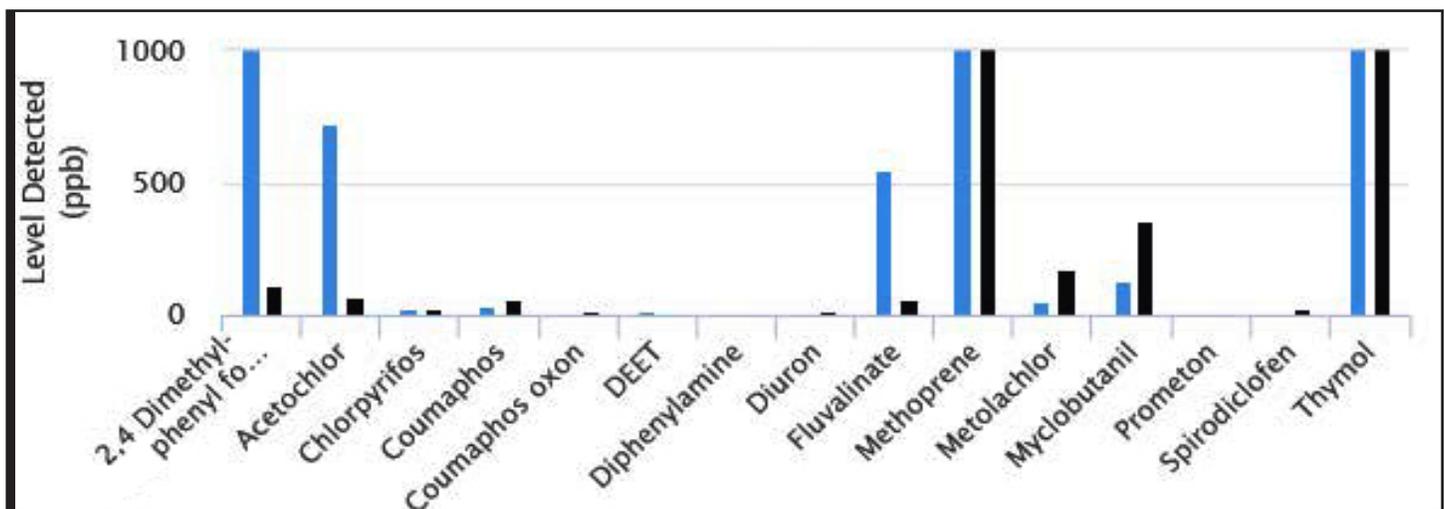
USDA Kentucky pesticide residues

All chart data © Bee Information Project

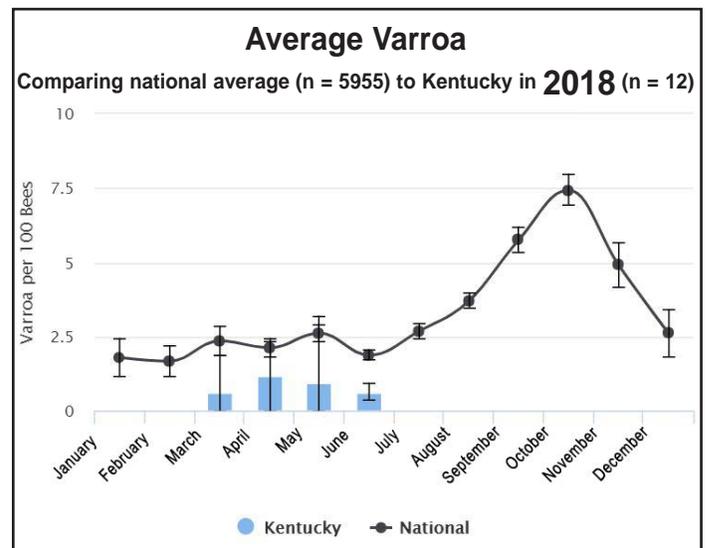
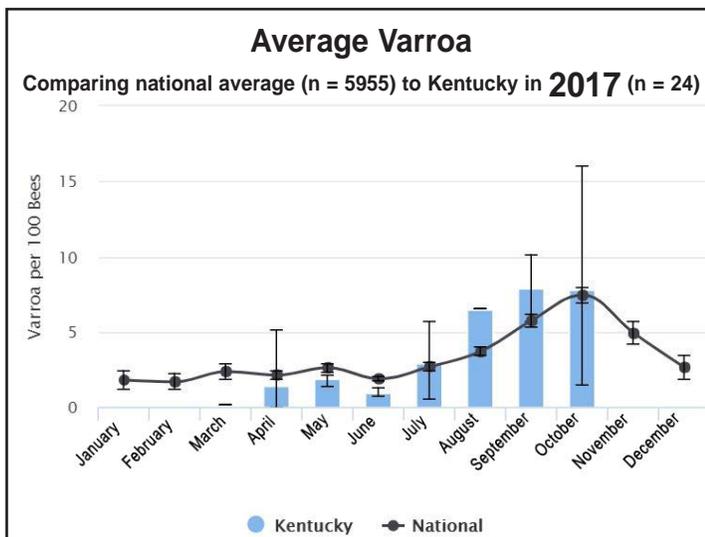
Comparing levels found in Kentucky **during 2017** to average level of these pesticides found in bee bread samples in the National extent data for all years (n = 1078)



Comparing levels found in Kentucky **during 2018** to average level of these pesticides found in bee bread samples in the National extent data for all years (n = 1078)



Kentucky vs. national Varroa averages, 2017 and 2018



STUDY ... from page 1

Viruses (below and next page)

The viruses Kentucky had in the **fall of 2017** followed a predictable national pattern, with Deformed Wing Virus being the most prevalent. *Varroa destructor* virus can hybridize with Deformed Wing Virus, and that co-occurrence definitely happened in fall 2017.

However, the results from the **spring of 2018** show a different set of patterns: Varroa mite counts were much lower than the fall. Kentucky showed slightly lower Deformed Wing Virus titers than in the fall, and the *Varroa destructor* virus titers were markedly lower. There is a slight bump with the Lake Sinai viruses.

I think both the lower Varroa mite counts and the lower viruses have to do with extended winter temperatures (and a snowfall April 16).

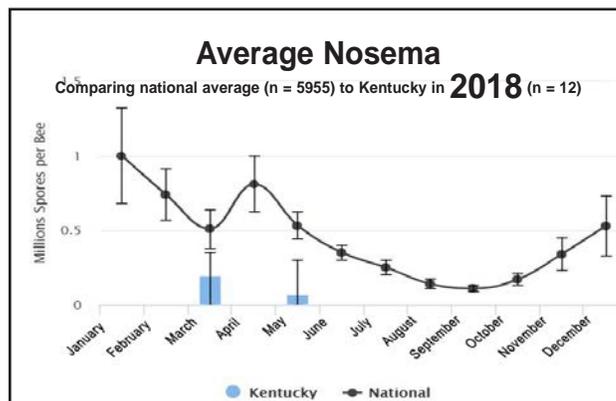
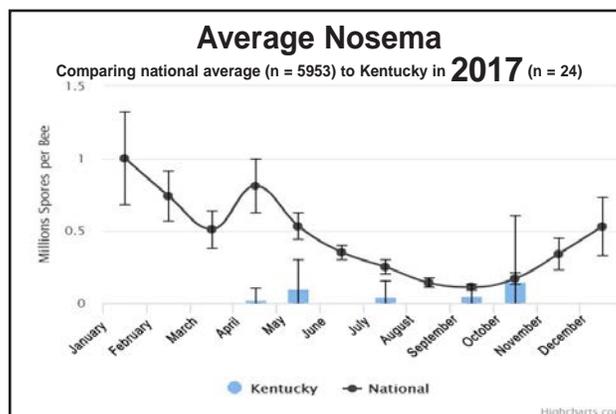
Pesticide residues (previous page)

The pesticide samples show a different chemical profile than the fall 2018 pesticide chart: 2-4D shows up at higher levels, I presume because of orchards and specialty crops in addition to beekeepers using Apivar. One sample had high levels of methoprene, an insect growth regulator that controls mosquitoes. Thymol is also high, which surprises me, because typically I see that in fall samples.

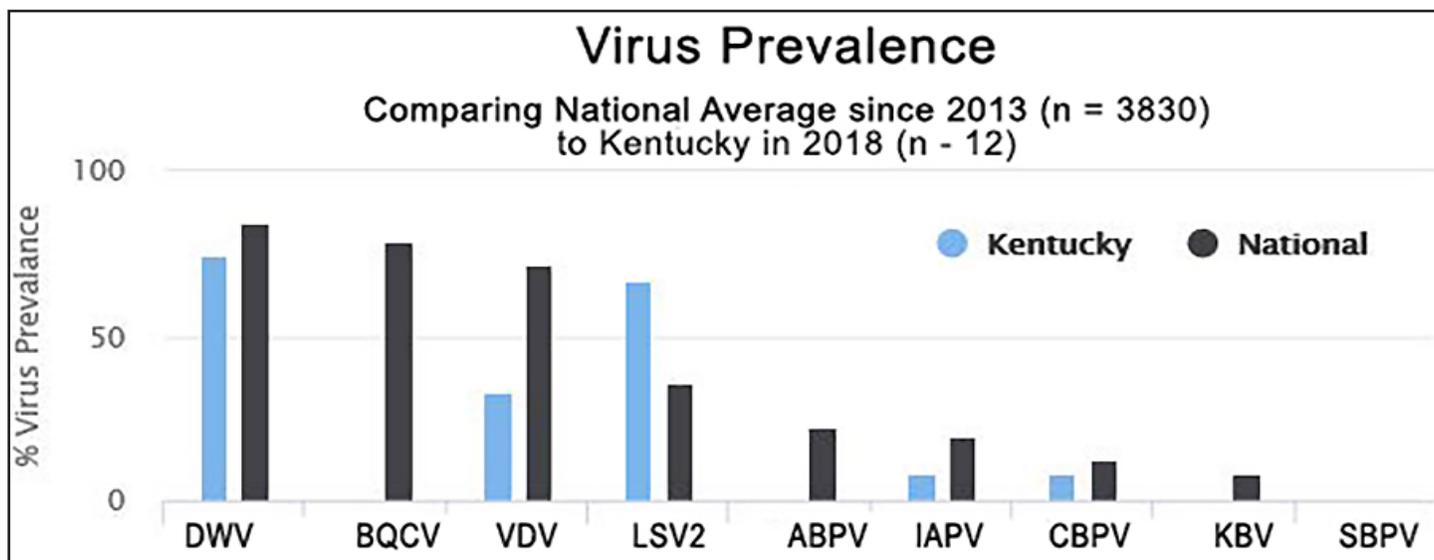
The 2017-18 USDA Survey was the last year that all 24 samples came from a completely random group of beekeepers. From this point forward, five beekeepers will be sampled in the fall and then again in the spring. The remaining 14 samples will come from volunteer beekeepers at random.

Full Results: https://bip2.beeinformed.org/reports/state_reports/state_report/?year=2018&state=KY

Kentucky vs. national nosema averages



Kentucky has fared well recently in terms of relatively low nosema spore counts. "I'm not saying that nosema does not exist in Kentucky, but in terms of the samples I have taken, the spore counts have not been exceptionally high compared to national averages," Potter said.



As with the rest of the nation, Kentucky has maintained relatively high presence of deformed wing virus. Since viruses do not react to antibiotics, a beekeeper needs to control the Varroa mite population, since Varroa mites have been a vector of this virus in particular. Researchers are continuing to learn more about viruses, but in the meantime, the best control continues to be sampling for Varroa mites and taking action if the population level reaches 3 mites per 100 honey bees.

All chart data © Bee Information Project

KY Samples	Sample size	Number of mites found	Mites Present Per 100 Bees	High Mite load	Kasmir Bee Virus	Acute Bee Paralysis	Israeli Acute Paralysis	Deformed Wing Virus	Lake Sinai Virus	Chronic Bee Paralysis	Varroa Destructor Virus
KY-01-2017	838	18	2.10	-	-	-	-	Yes	Yes	-	Yes
KY-02-2017	960	5	0.50	-	-	-	-	Yes	Yes	-	Yes
KY-03-2017	944	20	2.10	-	-	-	-	Yes	-	-	Yes
KY-04-2017	801	34	4.20	Yes	-	-	-	Yes	-	-	Yes
KY-05-2017	827	47	5.70	Yes	Yes	Yes	Yes	Yes	-	-	Yes
KY-06-2017	829	54	6.50	Yes	-	Yes	-	Yes	-	-	-
KY-07-2017	876	50	5.70	Yes	-	Yes	Yes	Yes	Yes	-	Yes
KY-08-2017	829	84	10.10	Yes	-	-	-	Yes	-	Yes	Yes
KY-09-2017	891	73	8.20	Yes	-	-	-	Yes	-	-	Yes
KY-10-2017	923	13	1.40	-	-	Yes	-	Yes	Yes	-	Yes
KY-11-2017	1080	62	5.70	Yes	-	-	-	Yes	-	-	Yes
KY-12-2017	905	145	16.00	Yes	-	-	-	Yes	-	-	Yes
KY-13-2017	855	0	0.00	-	-	-	-	Yes	Yes	-	-
KY-14-2017	1028	0	0.00	-	-	-	-	Yes	-	Yes	-
KY-15-2017	1188	22	1.90	-	-	-	-	Yes	-	-	Yes
KY-16-2017	818	0	0.00	-	-	-	-	-	Yes	-	Yes
KY-17-2017	952	22	2.30	-	-	-	-	Yes	Yes	-	-
KY-18-2017	825	4	0.50	-	-	-	Yes	Yes	Yes	-	Yes
KY-19-2017	906	1	0.10	-	-	-	-	-	Yes	-	-
KY-20-2017	976	31	3.20	-	-	-	-	Yes	Yes	-	-
KY-21-2017	886	9	1.00	-	-	-	-	Yes	-	-	-
KY-22-2017	941	0	0.00	-	-	-	-	-	-	-	-
KY-23-2017	864	3	0.30	-	-	-	-	Yes	Yes	-	-
KY-24-2017	778	7	1.00	-	-	-	-	-	Yes	-	-
Viruses 2017- 2018	Totals:		20	8	1	4	3	20	12	2	14
	Pct		3%	33%	4%	17%	13%	83%	50%	8%	58%

All chart data © Bee Information Project

Stop! Thief!

Increased hive thefts, vandalism make market for hive protection insurance

By Jim Trammel

Doug Roberts' story sounds like a Farmers Insurance television commercial in which J. K. Simmons tells how the company has seen and covered some unlikely disasters, while strolling with a visitor through an apparent "Morons Hall of Fame."

Here's what happened this time: The young criminal illicitly loaded two beehives into his vehicle. He actually made off with two functioning, active beehives — crammed into the rear section of his hatchback auto.

The vehicle got about 120 yards down the road, Roberts recalled.

It was found full of disgruntled, displaced bees, many of whom had left tokens of appreciation with the would-be kidnapper.

Individually designed coverage

Roberts is an agent for Texas Insurance Agency, offering policy lines that insure beekeepers against theft, vandalism, and uneven weather conditions.

Each Texas policy is individually worked out to fit the beekeeper's situation. Roberts' clients have from two hives to 50,000. Further cost



variables depend on what the beekeeper chooses to have covered and how much value is placed upon each hive. (Typical range: \$85 to \$400 value per hive.)

There is no way to insure bees themselves, Roberts said, but the woodwork is insurable, along with equipment, buildings, vehicles, and liability. Roberts says he advises clients to "start small and grow your coverage as you grow your operation."

See **INSURANCE**, page 6

INSURANCE ... *from page 5*

Liability coverage

There are two basic situations in which beekeepers will seek his company's coverage, Roberts said.

First is a **commercial liability** policy with a special honey extraction section added to protect beekeepers specifically. This protection is product liability coverage, covering any product the beekeeper sells – honey, wax, propolis, anything.

This coverage comes into play when, for example, a customer cuts his or her mouth on a loose piece of glass in a jar you've sold. This coverage satisfies the requirement for a Certificate of Liability Insurance that most outside sales sites require. (Many Kentucky beekeepers discovered that requirement just before the summer Kentucky State Beekeepers Association meeting last July.)

The second coverage type is **"operations and premises"** coverage, that covers the beekeeper any place he or she does business. This coverage would protect you from the liability of, say, setting your smoker down in dry grass and it starting a grass fire that destroys your neighbor's property – a situation Roberts says happens quite often.

To this basic liability coverage you can add an "inland marine" rider that protects all your hive woodwork, vehicles (including forklifts), and outbuildings. The covered property is insured against all loss, theft or damage except damage from earthquakes and rising waters.

Rain insurance

Speaking of waters, Roberts pointed out **"rainfall index"** coverage also available from Texas Insurance that pays in the case of inadequate rain.

"The National Weather Service has divided the nation into 16-mile grids and has one collection station in each

Apply for KDA sponsorships to operate 2019 Bee Schools

The Kentucky Department of Agriculture (KDA) will help sponsor qualifying 2019 Bee Schools, with grants of **\$100 to \$250** available to organizations that apply and qualify.

Host organizations that facilitate bee management and honey production workshops, feature Kentucky Proud® products, and help promote KDA/Kentucky Proud® programs at the events may be eligible to receive a sponsorship.

For the official application and the necessary supporting paperwork, visit kyagr.com/statevet/honeybees.html.

grid," Roberts explained. "If there is less than 90 percent of your average rainfall in a grid where you have hives, you get an insurance benefit." It's similar to drought insurance, without there having to be an actual drought declaration.

Costs are tailored

Roberts said a beekeeper could expect to spend \$500 to \$1,000 per year on insurance, with premiums and coverages annually adjustable to allow for fluctuations in the beekeeping business.

We can't pin down exact costs here because the policies are individually designed in consultation with Roberts and the company. Policies can cost more or less depending on how many hives and what equipment you want covered; what you declare to be its value; and custom conditions pertinent to each state.

Texas Insurance writes in all the lower 48 states, including for Kentucky clients.

Texas Insurance sends representatives to many state beekeepers association meetings. Those interested in coverage can contact Roberts directly. He asks that you have your tax number and other business information available when you call.

Contact Doug Roberts at (979) 475-1145 or doug@txins.com

* * *

Risk management insurance deadlines arrive in November

The Farm Service Agency (FSA) reminds beekeepers of the upcoming deadlines to apply for the **Noninsurable Crop Disaster Assistance Program ("NAP")** risk coverage.

Lindsey New, executive director of the FSA Pulaski/McCreary County office, said the deadline is **Nov. 20** to enroll for 2019 coverage.

The deadline is **Nov. 15** to apply for the USDA's Risk Management Agency (RMA) **Apiculture Rainfall Index** policies through insurance agents. For more information regarding these programs, contact a qualified crop insurance agent. (Visit rma.usda.gov/tools/agent.html to find an agent.)

A fact sheet for the **Apiculture Pilot Insurance Program** can be found here: rma.usda.gov/pubs/rme/apiculture.pdf.

Lindsey New, Pulaski/McCreary Co. FSA Office,
45 Eagle Creek Drive, Ste. 101, Somerset, KY 42503.
Phone (606) 678-4842, Ext. 125; fax (855) 784-0872.

Find your local FSA office at <https://offices.usda.gov>.

Deadline Dec. 14, 2018

Pollinator education grants for elementary/middle educators

The **David Rockefeller Fund (DRF) memorial grants initiative** has designated \$30,000 in funds to develop, promote and roll out pollinator conservation and education curricula for K-8th grade students.

DRF seeks one or more partners to collaborate with the **Pollinator Partnership (P2)**. Educators and environmental education organizations are encouraged to apply.

Preferred projects will be focused and targeted, with a high likelihood of tangible results that can be applied to improving pollinator education. Proposals providing extensions of existing projects will also be considered.

Funded projects will report their results to P2. A description of the proposed measurement metrics is an important criterion, and the proposal should describe any potential qualitative or quantitative metrics in detail.

Priority areas

The **David Rockefeller Pollinator Education Initiative** has identified the following priority areas for funding, though other areas will be considered as well.

- Pollinator education curriculum for classrooms that **provides teachers with the tools required** to engage students in inspiring activities.
- Pollinator education curriculum that incorporates a **habitat or outdoor component** that allows students to gain hands-on experience.
- Development of **workshops or training courses** for educators that expand the reach of a particular pollinator curriculum.
- An innovative pollinator learning experience uniquely incorporating **technology** to engage its audience.

Proposal requirements

- Cover page.
- Proposal title.
- Priority subject area focus/foci.
- Total budget requested.
- Contact information including email address(es), physical mailing address, and telephone number(s).



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- Project description of not more than three pages (Arial, 12-point font, single spaced, with page numbers; references are not included in this page limit) with:
 - Sufficient background;
 - STEM-related anticipated outcomes;
 - Description of methods to ascertain the success of the program;
 - Development of qualitative and/or quantitative metrics to measure the program's outcomes; and
 - Description of plans to distribute and promote curricula or training courses developed under this initiative.
 - Detailed budget between \$10,000 and \$30,000. Note that one or more grants will be awarded, and preference will be given to those that have identified or propose to raise matching funds.
 - Project timeline by month (approximately spring 2019 to summer 2020).
 - Résumés of key team members.

Please include if the proposal is under consideration by other funding organizations.

If the applicant has previously received funding from DRF or worked with P2, please include background information (up to one additional page).

Email your proposal packets as a single PDF file to **kr@pollinator.org** by Dec. 14, 2018. The proposals will be evaluated by the partners, and funding decisions will be made by Feb. 15, 2019.

All details and how to apply at pollinator.org/dr-f-education.

Cave Hill bees bring active buzz to historic Louisville graveyard

By Kate Springer, WDRB-TV

LOUISVILLE — At the corner of Broadway and Baxter in the heart of Louisville, **Cave Hill Cemetery** is the final resting place of the city's famous, notorious, and nameless.

The hum of cars is muffled by the lush gardens and encompassing wall, but the oldest part of the cemetery is buzzing.

Twenty-six hives here are cared for by beekeeper **Rodolfo Bernal**. "I started with four hives," he said. "I like to provide the bees a nice home."

Five years ago, he knew nothing about honey bees. But then a neighbor turned up with a hive he could no longer care for. "He told me if I wanted to take care of them, they were mine," Bernal said.

The lushly planted cemetery provides the perfect place for pollination, Bernal said. "Here at Cave Hill and the surrounding neighborhood, there's a huge variety of plants, so the bees get food."



At least once a week, Rodolfo Bernal suits up to harvest honey from 26 hives that overlook the graves of Cave Hill Cemetery in Louisville. (Tom Round photo)

Even one of the cemetery's most famous residents is helping with the honey. Bernal once caught a swarm by the grave of heavyweight boxing champ Muhammad Ali, who once famously said his punch could "sting like a bee."

"I knew he was going to do something to bring the bees. And he did," Bernal said.

Cave Hill bees produce 60 to 70 gallons of honey between April and August. The Cave Hill Heritage Foundation sells some of the honey to raise groundskeeping funds.

Source: wdrb.com/story/39151364/honeybee-business-is-buzzing-at-cave-hill-cemetery

A couple of fine Young beekeepers



Powell County Beekeepers Association members Ray and Larry Young show us their re-purposed hive house. Larry (*right*) is a stalwart leader in the Association. Ray and Larry both volunteered to be in the USDA Honey Bee Health Survey. (Tammy Potter photos)

State Apiarist's schedule

- **Nov. 2-3:** Kentucky State Beekeepers Association fall meeting, Shepherdsville.
- **Nov. 5:** Washington County Beekeepers Association, Springfield.
- **Nov. 7:** University of Kentucky Entomology Department, Dr. Dan Potter's class.
- **Nov. 12:** Veterans Day observed (state holiday).
- **Nov. 20:** Greenup County Beekeepers Association, Wurtland.
- **Nov. 21-23:** Out of office, Thanksgiving holidays.
- **Nov. 29:** Scott County Public Library, Georgetown.

USDA Honey Bee Health Surveys continue, weather permitting, on Mondays and Tuesdays.

State Fair Blue Ribbon Winners!

Salted Honey Pie

Category: Any pie other than pecan or apple.

- | | |
|----------------------------|--|
| ¾ c. honey | 8 T. (one stick) unsalted butter, melted |
| 12 T. heavy whipping cream | 1 T. apple cider vinegar |
| 8 T. white sugar | 1 t. vanilla extract |
| 3 large eggs | ¼ t. salt |
| 1 T. yellow cornmeal | |

Combine all ingredients and whisk until smooth. Pour in unbaked pie shell and bake at 325 degrees for 40 minutes.

— Teresa Baldwin, Louisville

One-Hour Rolls

For Thanksgiving!

- | | |
|-----------------------------|-------------------------|
| 2 packages active dry yeast | 4 ½ c. unbleached flour |
| ¼ c. honey | 1 ½ c. buttermilk |
| 1 t. salt | ½ c. shortening |
| ½ t. baking soda | ½ c. butter, melted |

In a large bowl, stir together the yeast, honey, salt, baking soda, and 2 c. flour; set aside. In a saucepan over low heat, warm the buttermilk and shortening. Gradually beat the buttermilk mixture into the flour mixture until well blended; beat for 2 minutes. Stir in the remaining flour until mixture forms a soft ball. Turn out onto a floured surface and knead until smooth. Cover and allow to rest for 10 minutes. Pat dough into a greased 9x13-inch pan. With a sharp knife, cut the dough into 24 pieces. Cover and allow to rise until doubled, about 30 minutes. Brush with melted butter and bake at 425 degrees for 15 minutes. Best when served warm. *Yield:* 24 rolls.

— EllenAnn Meier, Lexington



Columbia Gas receives pollination protection honor

Columbia Gas of Kentucky has been recognized by the Lexington-Fayette Urban County Government's Environmental Commission for "the valuable contributions of its Pollinator Program to the city of Lexington's environmental health."

"We are thrilled to offer praise and recognition for this thoughtful effort to create habitat for pollinators. We applaud your commitment to the long-term maintenance involved in managing invasive plants, and appreciate the aesthetic improvement that flowering native plants, and the wildlife they support, offer the community," said Environmental Commission chairman W. Blaine Early III.

Susan Murray, vegetation management specialist for Columbia Gas, praised the involvement of the entire pollinator protection team in earning this honor, singling out Kentucky State Apiarist Tammy Potter as a key person in the effort. "[Her] passion is the reason we decided to take this journey in the first place," Murray said.

Source: Lexington-Fayette Urban County Government Environmental Commission.



Honey certified by the experts

Honey bees fly around inside a display case of almond desserts at a bakery in a souk (marketplace) in the city of Rabat, Morocco. This is from a video by Katherine Black, a Lexington beekeeper touring that north African country. Black notes that in the evening she passed the stand again, and the bees had left the pastry stand, presumably returning to the hive ("Hey, you'll never guess what WE found!").