AHPA
American Honey Producers Association

Check out all the

LATEST NEWS

on our website:

AHPAnet.com

LIKE US ON facebook

---

npr®

A biotech firm says the U.S. has approved its vaccine for honeybees

January 6, 20234:28 AM ET

Ayana Archie

The federal government has granted a conditional license for a honeybee vaccine, the developer of the drug announced Wednesday.

The vaccine will be used to help fight American Foulbrood disease in the insects and was approved by the Department of Agriculture, Dalan Animal Health, the biotech company behind the vaccine, said.

"This is an exciting step forward for beekeepers, as we rely on antibiotic treatment that has limited effectiveness and requires lots of time and energy to apply to our hives," Tauzer Apiaries, a board member of the California State Beekeepers Association, said in a news release from Dalan. "If we can prevent an infection in our hives, we can avoid costly treatments and focus our energy on other important elements of keeping our bees healthy."

Infected bees and hives are also typically incinerated to stop the spread of the disease, Dalan Animal Health said.

The disease is caused by Paenibacillus larvae, a type of bacteria that affects the bee's larvae. The vaccine contains some of that bacteria, and it will be mixed in with the royal jelly, which worker bees secrete from their heads and then feed to the queen and larvae. When the queen eats the jelly, she will ingest fragments of the vaccine that will grant her offspring some immunity against the bacteria.

The vaccine is not genetically modified and can be used in organic agriculture, Dalan Animal Health said.

The USDA issues conditional licenses for products that "meet an emergency situation, limited market, local situation, or special circumstance" and are pure, safe and have a "have a reasonable expectation of efficacy," according to a memo by the agency.

Pollinators are responsible for one of every three bites of food we take, according to the agency, but their numbers have been declining for many years.

U.S. beekeepers lost nearly 40% of their honeybee colonies in winter 2019, according to a survey by the Bee Informed Partnership.

Bee decline has many causes, including decreasing crop diversity, poor beekeeping practices and loss of habitat. Pesticides weaken bees' immune systems and can kill them. Varroa mites latch onto honeybees and suck their "fat body" tissue, stunting and weakening them and potentially causing entire colonies to collapse.

https://www.npr.org/2023/01/06/1147342961/honeybee-population-vaccine

---

Feed or fight? How a honey bee hive's culture influences their choice

3-Jan-2023 11:05 AM EST
by Society for Integrative and Comparative Biology (SICB)

Newswise — Full of needy young, a queen, and constantly under threat of attack, the honey bee hive is complex and fascinating. For decades, researchers have studied the intricacies of the hive as a model for how individual behaviors make up the “social environment” and how that reinforces and shapes the future of the colony.

Rebecca Westwick, a doctoral candidate at University of Kentucky, studies how the social environment can influence developing young by studying the adults that tend to them. Westwick is presenting her results at the Society for Integrative and Comparative Biology’s Annual Meeting in January 2023 in Austin, Texas.

To maintain a productive hive, bees must split up many tasks. Those that begin as “nurses” who manage and feed the young later become “foragers” who gather and return with food for the hive. When a threat to the hive triggers bees to emit alarm pheromone (a chemical that encourages bees to attack), the foragers act as the frontline of defense.

Previous work by Westwick’s advisor, Assistant Professor Clare Rittschof, showed that the extent to which foragers respond to an attack is influenced by the colony in which they’re raised as larvae, not by their genes. For Westwick, this sparked a question, “How does a honey bee larva know what social environment it’s in, in a way that changes its behavior as an adult?”

To understand this, she started studying the nurses first. “These larvae can’t detect their social environment: they don’t have the sensory structures they would need to do that,” she explains, “But, they are very closely tended to by nurse bees, a group of individuals that definitely can detect their social environment.”

To understand how nurses might be influencing the larvae, she observed nurse behavior in 12 honey bee colonies at the University of Kentucky’s Spindletop Farm. Of these 12, half

were classified as high and half as low aggression based on their response to alarm pheromone. By observing the colony innerworkings using an observation nest while waving alarm pheromone outside the hive, she was able to observe how nurse bees responded to this simulated colony threat.

She found that nurses from high-aggression colonies would stop their care when sensing alarm pheromone, whereas nurses from low-aggression colonies would continue their care duties. Westwick's findings suggest that nurse behavior may largely be the way that larvae understand their social environment and later go on to perform similar behaviors as adult nurses or perhaps be more aggressive as foragers.

For Westwick, the next steps in this work are to test whether a simulated interrupted feeding schedule produces adult nurses that act similarly when sensing alarm pheromone. She suspects that disruptions in the feeding schedule create an uncertain environment for the larvae. "This larva might then sense that it would be better prepared for that uncertain world if it is more aggressive and therefore better able to defend itself," she adds. By testing how the nurses in the hive respond to alarm pheromone, Westwick's findings illuminate how changes in early care may be key to adult behavior.

https://www.newswise.com/articles/feed-or-fight-how-a-honey-bee-hive-s-culture-influences-their-choice

---

Bee Culture
The Magazine of American Beekeeping

Honey Bee DNA Footprints

Following insect footprints to improve crop resilience and monitor pollinator biodiversity

Bees and other insects leave behind tiny ‘footprints’ of environmental DNA on plants each time they visit, giving researchers a way of tracking where insects have been and offering clues on how to help them flourish.

A team of researchers, including the Wellcome Sanger Institute and led by the University of Copenhagen, have used these DNA footprints as a non-invasive way to collect information on insect biodiversity, giving new insight into how to boost pollination and protect insect biodiversity and crops against threats such as climate change.

The new study, published today (6 December 2022) in Environmental DNA, is the first time DNA footprints have been used alongside visual observations to track the kind of insect visitors to crops, helping to see if there are any pests and informing new ways to encourage beneficial insects.

For example, the team uncovered the importance of wild non-bee pollinators that have previously been underestimated in their impact, along with identifying multiple pest species. These findings can inform new management strategies based on the specific insects visiting an orchard or crop.

This study is part of the BEESPOKE* project, which is a collaboration between a range of partners, including the University of Copenhagen, policymakers, and research institutes, from six North Sea Region countries. The aim of the project is to develop new products and approaches to increase the diversity of insect pollinators and crop yields.

Crops require bees and other pollinators to move pollen from one flower to another, allowing the plant to produce seeds and fruit. Threats such as pollinator decline due to pesticides and climate change can impact crop yield and quality, directly affecting many people’s livelihoods and food availability in general.

Having an environment that's rich in biodiversity, with a variety of beneficial pollinators, can help protect crops against these threats. Therefore, knowing what insects are visiting crops, how they work as a community, and highlighting pest species is important to inform management techniques.

Currently, the insect community in an area is tracked by visual observation. However, the presence of observers can alter insect behavior. Visual observation is also extremely time-consuming and can miss certain populations of insects, especially those that are nocturnal, as most observations are carried out during the day when there is enough light.

Read the complete research at www.eurekalert.org.

Following insect footprints to improve crop resilience and monitor pollinator biodiversity, WELLCOME TRUST SANGER INSTITUT, in Environmental DNA, DOI 10.1002/edn3.362

We are here to share current happenings in the bee industry. Bee Culture gathers and shares articles published by outside sources. For more information about this specific article, please visit the original publish source: www.eurekalert.org

https://www.beeculture.com/honey-bee-dna-footprints/

Honeybees at risk, along with the crops they pollinate: Scientists think the solution lies in the insects' brains

by Tom Avril, The Philadelphia Inquirer

The honeybees looked perfectly healthy, buzzing about their boxy wooden hive on a warm autumn day in central Pennsylvania.

Elizabeth Capaldi suspected otherwise.

Clad in a protective white suit and hat, the biologist reached out with a gloved hand to capture one of the insects in a small vial, then took it back to her Bucknell University laboratory to dissect its brain.

Her colleague David Rovnyak later placed a sample of the bee's innards inside a large metal cylinder and pelted it with high-frequency radio waves—a type of scanning technology that revealed the amounts of certain telltale chemicals within.

Their goal: to identify early warning signs that a bee is under stress, so that beekeepers can try to rescue a threatened hive before it's too late.

Honeybees have been in decline for decades, causing headaches and higher costs for farmers who depend on the insects to pollinate their apples, almonds and 130 other fruit, nut and vegetable crops. The issue made headlines in 2006 with the emergence of a mysterious new phenomenon called colony collapse disorder, but the broader downturn in bee health was underway well before that, and it continues to this day.

The causes include climate change, pesticides, and disease, said Capaldi, who studies insect behavior and neuroscience at the liberal arts university in Lewisburg. In bad years, the combination of insults can wipe out more than half of a beekeeper's colonies.

"Honeybees are suffering," she said. "All of these factors have united together to create a stressful environment for honeybee colonies across the country."

She and Rovnyak, a chemistry professor at Bucknell, realized five or six years ago that the problem might lend itself to an interdisciplinary solution. The pair joined forces with colleague Marie Pizzorno, an expert in viruses—as one factor in the insects' decline is a virus that deforms their wings.

They want to to identify chemical stress indicators that become elevated in a bee's brain months before the insect displays any outward signs of decline.

The cylindrical device Rovnyak uses to detect these substances, called a spectrometer, would be impractical for any beekeeper or farmer. But once the researchers determine which chemicals are the best predictors of bee health, they want to develop a low-cost test that could be deployed in the real world.

Double the cost

Every spring, just as the apple blossoms are starting to bloom, a flatbed truck rolls up to Hollabaugh Bros. farm in the middle of the night, laden with 100 honeybee hives.

Workers set up the boxy containers across 150 acres that produce more than 50 varieties of apples, said Ellie Hollabaugh Vranich, assistant business manager of the farm in Biglerville, just north of Gettysburg.

"We try to get them spread out while it's still dark, before the bees wake up," she said.

A decade ago, the farm rented the hives for $50 apiece. A few years ago, the price rose to $60, and this past spring, it was $100, for a total of $10,000, she said.

Beekeepers have cited a variety of reasons for the increases, such as higher fuel costs and disruptions related to the COVID-19 pandemic. But every year, a major factor in higher costs is that many colonies don't survive the winter, meaning beekeepers must scramble to raise new ones in time for the growing season.

"You can't just manufacture a bee on a processing line in a factory," Vranich said. "They have to be bred and given time to develop new hives."

Experienced beekeepers such as Capaldi, the Bucknell scientist, can often tell when a hive is starting to fail simply by looking at it. Perhaps the insects haven't amassed long-term stores of honey, subsisting instead on liquid nectar. A lack of a brood is another warning sign.

But by that point, it might already be too late.

A year ago, Capaldi judged that her eight hives at Bucknell were under stress, likely because the fall asters and goldenrods had produced less nectar than usual. So throughout the winter, she supplemented the insects' food with sugar.

Even so, just two of the hives survived.

Finding the culprits

The first sign of trouble for the insects came in the 1980s with the introduction of a parasitic mite from overseas, said Pizzorno, the Bucknell virologist.

Relative to the size of the honeybee, these parasites, called Varroa destructor, are enormous.

"It'd be like having a tick on your body that's the size of a dinner plate," she said.

Scientists later would discover that in addition to inflicting harm directly, the parasites also transmitted a virus to the honeybees that deforms their wings.

Researchers also have established that climate change affects the bees in a variety of ways, Capaldi said. Early warm spells or unusual rain patterns can cause flowers to bloom too early and disappear by the time the insects are looking for nectar.

"When the colony is growing, the flowers may not be available," she said.

Certain pesticides and other practices of large-scale industrial agriculture also can add to the stress, she said. That includes the way the bees are deployed, trucked from farm to farm where they subsist on one crop for days at a time.

Increasingly throughout the 1990s, beekeepers reported that some of their colonies did not survive the winter. Then in 2006, beekeepers discovered that some colonies were dying in an unusual way. Instead of dying in or near the hive, bees were simply vanishing, apparently flying off to die elsewhere.

While beekeepers have reported fewer cases of this colony collapse disorder in recent years—in part because they have developed better management techniques—the causes remain somewhat unclear. Capaldi blames many of the same factors that are behind the bees' overall decline that began in the late 1980s.

Telltale chemicals

The stout silver spectrometer at Bucknell contains a magnet more powerful than the ones used in MRI machines, said Rovnyak, the chemistry professor. To identify telltale metabolic chemicals in a bee brain, he places the tiny clump of material in a small receptacle at the center of the device, then hits it with radio waves, causing the various substances to resonate in such a way that their relative amounts can be measured.

"Each molecule rings with a distinct set of patterns, like a chord," he said.

In one study, he and the others found that an amino acid called proline was elevated in the brains of honeybees that were infected with the deformed-wing virus—well before they showed outward signs of disease.

The scientists have since identified other protein fragments that may be signs of stress—possibly because the insects are changing their eating habits in response to infection—but more work is needed.

Once the Bucknell researchers narrow down the best chemical predictors of a bee's

decline, they hope to develop a low-cost rapid test that beekeepers could use.

"If we could come up with something for a few bucks, that might be appealing," Rovnyak said.

He likened the approach to certain blood tests for humans, such as those that can identify metabolic signs of Type 2 diabetes years before the onset of disease. Much like humans with pre-diabetes can ward off disease by changing their diet, beekeepers could do the same for the insects.

Feeding them sugar, for instance, but starting earlier than Capaldi did last year with Bucknell's colonies. Or deploying other tactics that have shown promise in limiting colony collapse disorder, such as treating for mites, relocating hives, or swapping in a different queen bee.

In the meantime, significant fractions of colonies keep failing every winter—30% one year, 40% or 50% the next, according to surveys by the nonprofit Bee Informed Partnership. For now, breeders have kept up with the demand for new colonies. But at some point, maybe they won't, Rovnyak said.

"It just seems to be getting more and more challenging every few years," he said. "And there's no sign this is stopping."

https://phys.org/news/2022-12-honeybees-crops-pollinate-scientists-solution.html

Raw Honey from Argentina, Brazil, India, and Vietnam Injures U.S. Industry, Says USITC

May 11, 2022
News Release 22-058
Inv. No. 731-TA-1560-1562 and 731-TA-1564 (Final)
Contact: Jennifer Andberg, 202-205-1819

Raw Honey from Argentina, Brazil, India, and Vietnam Injures U.S. Industry, Says USITC

The United States International Trade Commission (USITC) today determined that a U.S. industry is materially injured by reason of imports of raw honey from Argentina, Brazil, India, and Vietnam that the U.S. Department of Commerce (Commerce) has determined are sold in the United States at less than fair value.

Chair Jason E. Kearns, Vice Chair Randolph J. Stayin, and Commissioners David S. Johanson, Rhonda K. Schmidtlein, and Amy A. Karpel voted in the affirmative.

As a result of the Commission's affirmative determinations, Commerce will issue antidumping duty orders on imports of this product from Argentina, Brazil, India, and Vietnam.

The Commission made a negative critical circumstances finding with regard to imports of this product from Argentina. The Commission made an affirmative critical circumstances finding with regard to imports of this product from Vietnam.

The Commission's public report *Raw Honey from Argentina, Brazil, India, and Vietnam* (Inv. Nos. 731-TA-1560-1562 and 731-TA-1564 (Final), USITC Publication 5327, May 2022) will contain the views of the Commission and information developed during the investigations.

The report will be available by June 20, 2022; when available, it may be accessed on the USITC website at: *http://pubapps.usitc.gov/applications/publogs/qry_publication_loglist.asp*.

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC 20436

FACTUAL HIGHLIGHTS
Raw Honey from Argentina, Brazil, India, and Vietnam
Investigation Nos.: 731-TA-1560-1562, 1564 (Final)

Product Description: Honey is a sweet, viscous fluid produced from the nectar of plants and flowers which is collected by honeybees, transformed, and combined with substances of their own, and stored and left in honeycombs to mature and ripen. Raw honey is honey as it exists in the beehive or as obtained by extraction, settling and skimming, or straining.

Status of Proceedings:

1. Type of investigation: Final antidumping duty investigations.

2. Petitioners: American Honey Producers Association ("AHPA"), Bruce, South Dakota; and Sioux Honey Association ("SHA"), Sioux City, Iowa.
3. USITC Institution Date: Wednesday, April 21, 2021.
4. USITC Hearing Date: Tuesday, April 12, 2022.
5. USITC Vote Date: Wednesday, May 11, 2022.
6. USITC Notification to Commerce Date: Tuesday, May 31, 2022.

U.S. Industry in 2020:

1. Number of U.S. producers: approximately 30,000 to 60,000.
2. Location of producers' plants: North Dakota, South Dakota, California, Texas, Montana, Florida, Minnesota, and Michigan
3. Production and related workers: 1,360.
4. U.S. producers' U.S. shipments: $302 million.
5. Apparent U.S. consumption: $690 million.
6. Ratio of subject imports to apparent U.S. consumption: 42.8 percent.

U.S. Imports in 2020:

1. Subject imports: $296 million.
2. Nonsubject imports: $93 million.
3. Leading import sources: Argentina, Brazil, India, Vietnam.

https://www.usitc.gov/press_room/news_release/2022/er0511ll1935.htm

What does this mean for beekeepers?

The decision will be transmitted to the Commerce Department, which will issue antidumping duty orders shortly. In addition, the Commission reached an affirmative critical circumstances determination against Vietnam. This means that U.S. Customs will collect antidumping duties on entries going back an additional 90 days prior to the preliminary antidumping duty determination—from August 28, 2020, forward. This is an important additional finding, and one that the Commission rarely makes.

These results should continue to ensure that the American honey producer gets the fair prices they deserve.

We truly appreciate all of the donations that we have received to cover legal fees.

The good fight isn't over yet, however, and we still need your support.

To donate to the Antidumping Fund, please contact
Cassie Cox: cassie@ahpanet.com
281-900-9740

Or donate on our secure website: https://www.ahpanet.com/donations-1

American Honey Producers Association

AHPA App

As AHPA continues to work on behalf of all beekeepers, one of our initiatives is advocating with the FDA in Washington D.C. to update honey labeling guidelines. As part of this effort, we need your help to collect pictures of honey labels from around the United States. Our goal is primarily to find honey that is mislabeled according to current FDA guidelines. Secondarily, we need examples of any labels which misrepresent country of origin or are purposefully confusing to consumers so that we can advocate for positive changes and updates.

Search the App Store or Google Play for "AHPA app”. We need to collect as many pictures from honey on the store shelf as possible. Please take a few minutes to help collect this data.
