# American Honey Producers Association


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American Honey Producers Association

# Annual Conference & Trade Show

San Diego

December 4 - 7, 2023

Monday - Thursday

Marriott Mission Valley Hotel


# World Bee Day 2023

## BEE ENGAGED

## in pollinator-friendly agricultural production

Friday 19 May 2023 | 10.00 - 11.30 CEST

**REGISTER HERE**

*Sheikh Zayed Centre, FAO Headquarters, Rome, Italy*

*Follow the live stream **here***

Under the theme “Bee engaged in pollinator-friendly agricultural production”, World Bee Day 2023 calls for global action to support pollinator-friendly agricultural production and highlights the importance of protecting bees and other pollinators, particularly through evidence-based agricultural production practices.

The global World Bee Day ceremony, which will be held in hybrid format at the FAO headquarters on Friday, 19 May, will be an opportunity to raise awareness of the importance of adopting pollinator-friendly agricultural production practices to protect bees and other

pollinators, while contributing to the resilience, sustainability and efficiency of agrifood systems. Simultaneous interpretation will be available in all official languages.

If you are in FAO headquarters, check out the exhibition in the Atrium and Flag Hall to learn more about pollination for agrifood systems and enjoy a honey-tasting.

## WORLD BEE DAY EVERYWHERE

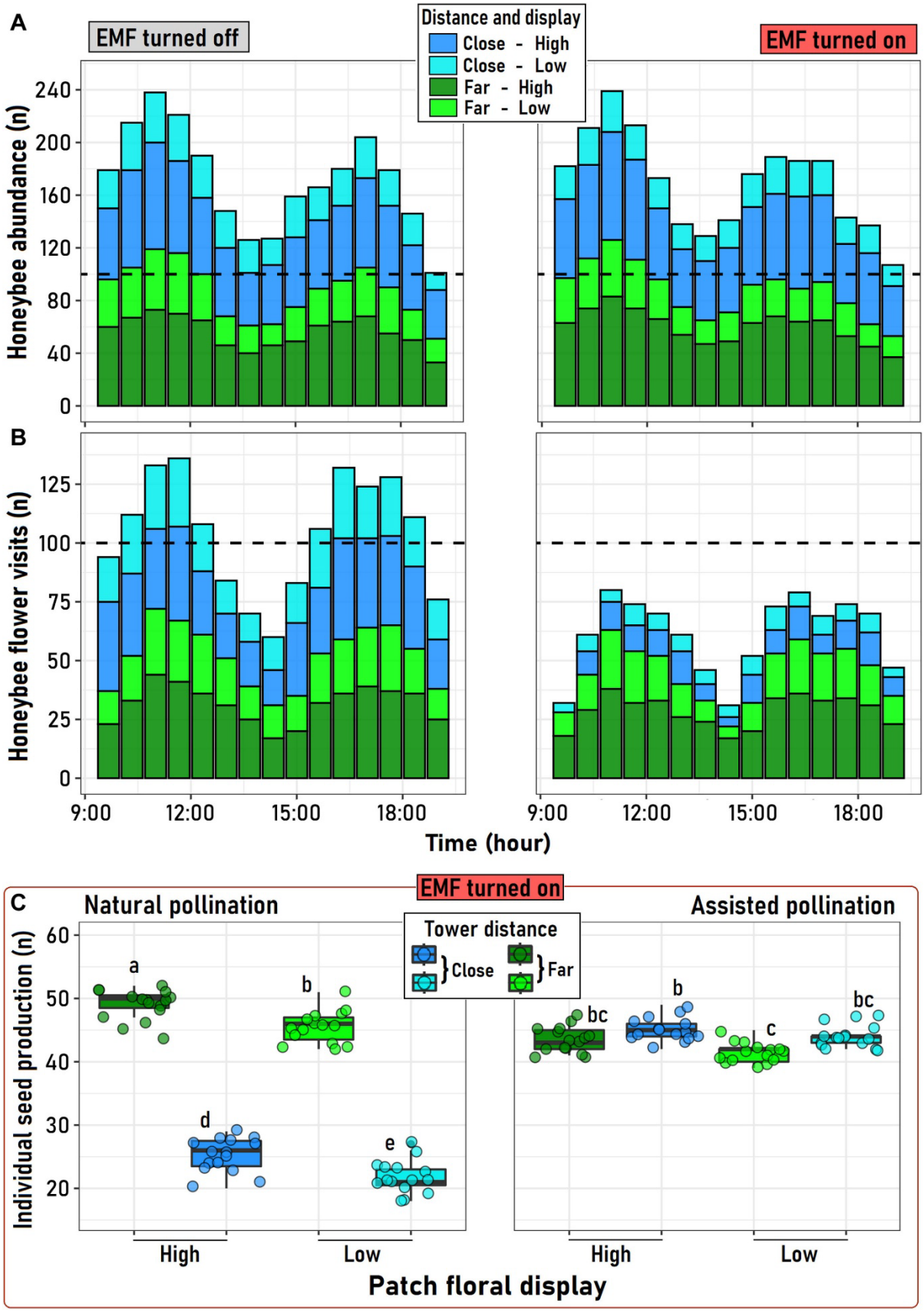
We hope you can help us to spread the word in your hive! Some suggestions on how to participate here below:

- Find out more about how you can promote World Bee Day by reading our **Get involved guide**.
- Download posters, virtual backgrounds, web and event banners, and so much more from the **World Bee Day Asset Bank.**
- Watch and share the **World Bee Day promotional videos** and join the call for action.
- Listen the **recorded poems** by some well-known figures related to bees, beekeeping, or how the behaviour of bees so often mirrors that of human beings across our planet.

**For more information** visit the website **World Bee Day** or contact us at: **World-Bee-Day@fao.org**

# Evidence found of electromagnetic fields from electrical towers disrupting pollinating honeybees

by Bob Yirka , Phys.org


A
EMF turned off
Distance and display
Close - High
Close - Low
Far - High
Far - Low
EMF turned on
Honeybee abundance (n)
240
200
160
120
80
40
0
B
Honeybee flower visits (n)
125
100
75
50
25
0
9:00
12:00
15:00
18:00
Time (hour)
EMF turned on
C
Natural pollination
Assisted pollination
Tower distance
Close
Far
Individual seed production (n)
60
50
40
30
20
a
b
d
e
bc
b
c
bc
High
Low
Patch floral display

A multi-institutional team of biologists and ecologists from Chile and Argentina has found evidence suggesting that electromagnetic fields emanating from electrical towers disrupt pollinating honeybees. The research is published in the journal Science Advances.

Prior research has suggested that electromagnetic radiation emitted from power lines may interfere with plants and animals in the vicinity—though some have suggested that the unique habitat of the treeless regions where power lines pass through forests may confer some natural benefit.

In this new effort, the research team focused specifically on the impact of electromagnetic radiation emitted from electrical towers on honeybees—they chose honeybees because prior research has shown they navigate using natural electromagnetic fields. And they chose to use electrical towers rather than power lines themselves because they had access to similar towers without power lines, allowing for comparison purposes.

The researchers first counted the number of poppies flowering around active towers and towers that were inactive—they found there were far fewer flowering around the active towers. The researchers also measured the electromagnetic fields around multiple towers to discover how strong they were at various distances.

They then collected several honeybee specimens flying at different distances from a tower and measured the levels of a protein called HsP70 in their bodies—this protein has been shown to be related to stress in the bees. As expected, they found higher levels in the bees working closest to the electrical towers.

The research team then collected more honeybee specimens at a distance from any towers or lines and brought them back to their lab for study. They exposed them to different amounts of electromagnetic radiation and then measured expressions related to 14 genes known to be associated with navigation, stress and the immune system. They found differences in 12 of those exposed to electromagnetic radiation.

The team finished their study by once more venturing into the field to study the bees working closely to electrical towers—they found that the frequency of visits to a nearest flower that were closest to a tower were approximately 308% lower than in areas where there were no

towers.

The group concludes that electromagnetic fields around electrical towers have a detrimental impact on honeybee pollination, and by extension, the surrounding plant community.

https://phys.org/news/2023-05-evidence-electromagnetic-fields-electrical-towers.html

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POPULAR SCIENCE

# What busy bees' brains can teach us about human evolution

**The honey bee has specialized neurons that provide buzz-worthy clues.**

By Laura Baisas | Published May 8, 2023 8:00 AM EDT

If humans want to learn more about our higher brain functions and behaviors, some scientists think we should look towards insects—including everything from busy bees to social butterflies to flies on the wall. A study published May 5 in the journal Science Advances found three diverse, specialized Kenyon cell subtypes in honey bee brains that likely evolved from one single, multi-functional Kenyon cell subtype ancestor. Kenyon cells (KCs) are a type of neural cell that are found within a part of the insect brain. These cells are involved in learning and memory, particularly with the sense of smell called the mushroom body. They are found in insects in the large Hymenoptera order from more "primitive" sawflies up to the more sophisticated honey bee.

"In 2017, we reported that the complexity of Kenyon cell subtypes in mushroom bodies in insect brains increases with the behavioral diversification in Hymenoptera," co-author and University of Tokyo graduate student said in a statement. "In other words, the more KC subtypes an insect has, the more complex its brain and the behaviors it may exhibit. But we didn't know how these different subtypes evolved. That was the stimulus for this new study."

In this study, the team from University of Tokyo and Japan's National Agriculture and Food Research Organization (NARO) looked at two Hymenoptera species as representatives for different behaviors. The more solitary turnip sawfly has a single KC subtype, compared to the

more complex and more social honey bee that has three KC subtypes.

It is believed that the sawfly's more "primitive" brain may contain some of the ancestral properties of the honey bee brain. To find these potential evolutionary paths, the team used transcriptome analysis to identify the genetic activity happening in the various KC subtypes and speculate their functions.
"I was surprised that each of the three KC subtypes in the honey bee showed comparable similarity to the single KC type in the sawfly," co-author and University of Tokyo biologist Hiroki Kohno said in a statement. "Based on our initial comparative analysis of several genes, we had previously supposed that additional KC subtypes had been added one by one. However, they appear to have been separated from a multifunctional ancestral type, through functional segregation and specialization."

As the number of KC subtypes increased, each one almost equally inherited some distinct properties from a single ancestral KC. The subtypes were then modified in different ways, and the results are the more varied functions seen in the present-day insects.

To see a specific behavioral example of how the ancestral KC functions are present in both the honey bee and the sawfly, they trained the sawflies to partake in a behavior test commonly used in honey bees. The bees, and eventually sawflies, learned to associate an odor stimulus with a reward. Despite initial challenges, the team got the sawflies to engage in this task.

Then, the team manipulated a gene called CaMKII in sawfly larvae. In honey bees, this gene is associated with forming long-term memory, which is a KC function. After the gene manipulation, the long-term memory was impaired in the larvae when they became adults, a sign that this gene also plays a similar role in sawflies. CaMKII was expressed across the entire single KC subtype in sawflies, but it was preferentially expressed in one KC subtype in honey bees. According to the authors, this suggests that the role of CaMKII in long-term memory was passed down to the specific KC subtype in the honey bee.

Even though insect and mammalian brains are very different in terms of size and complexity, we share some common functions and architecture in our nervous systems. By looking at how insect cells and behavior has evolved, it might provide insights into how our own brains evolved. Next, the team is interested in studying KC types acquired in parallel with social

behaviors, such as the honey bee's infamous "waggle dance."

"We would like to clarify whether the model presented here is applicable to the evolution of other behaviors," co-author and University of Tokyo doctoral student Takayoshi Kuwabara said in a statement. "There are many mysteries about the neural basis that controls social behavior, whether in insects, animals or humans. How it has evolved still remains largely unknown. I believe that this study is a pioneering work in this field."

https://www.popsci.com/environment/honey-bee-brain-evolution/

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Daily Mail

# Top British scientists at Porton Down lab plan to use Manuka honey's antibacterial qualities to create specialised chemical attack resistant gas masks

- **Ben Wallace has lodged application into use of honey as protective equipment**
- **Manuka honey is the result of bees foraging on the manuka bush**

By Katherine Lawton and Milo Pope
Published: 13:30 EDT, 13 May 2023 | Updated: 13:52 EDT, 13 May 2023

British scientists at Porton Down are making plans to use the antibacterial qualities of Manuka

honey to create specialised chemical attack resistant gas masks.

They would harness the antibacterial qualities of the honey - which is seen as a special superfood that can ward off colds and banish sore throats - by creating a 'manuka gas mask' to defend against airborne biological and chemical attacks.

UK Defence Secretary Ben Wallace has lodged a patent application revealing that the honey could be used as 'glue' to 'capture and neutralise' poisonous toxins such as Covid-19.

Manuka honey is the result of bees foraging on the manuka bush (Leptospermum scoparium), a plant that produces a compound with strong antibacterial properties.

The honey could be deployed as one of several 'sticky' layers applied to filters fitted to masks or personal protective equipment (PPE), according to the 22-page government document.

The document also explains that 'maze-like zigzags' fitted within the gas mask filter can be coated with 'adhesive layers' of honey which will 'neutralise the threat'.

The patent has yet to be tested yet and is only at the concept stage, but in another possible design the honey could be coated onto 'an absorptive tissue'.

The document says: 'Passing the dynamic airflow over the absorptive tissue ensures particulate matter in the dynamic airflow is captured by the manuka honey, thus filtering the dynamic airflow.'

Researchers have previously found that manuka honey holds 'great promise' in fighting Mycobacterium abscessus, the nasty bug it was tested on.

Made by bees that feast on manuka trees located only in New Zealand and Australia, the product often warrants sky-high price tags.

A-listers Gwyneth Paltrow, Scarlett Johansson and Katherine Jenkins have all extolled the virtues of this 'liquid gold' in the past few years.

Mycobacterium abscessus is dangerous to people with weakened immune systems or those with existing lung conditions like cystic fibrosis.

It comes from the same family as tuberculosis and requires a cocktail of antibiotics — known as antimicrobial chemotherapy — to treat.

Patients can experience severe side effects from the drugs, including hearing loss, vomiting, diarrhea, hives and fatigue.

But Aston University in Birmingham experts found using the honey in combination with lower doses of one type of antibiotic could help treat the infections.

This could pave the way for new drugs combining the two substances that would improve the quality of life of patients in the future, they said.

https://www.dailymail.co.uk/news/article-12079013/Top-British-scientists-plan-use-Manuka-honey-make-special-chemical-attack-resistant-gas-masks.html

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# Honey Bee Virus Found in Mosquitoes

By Andrew Porterfield

Black queen cell virus is a serious problem for beekeepers. It infects developing queen honey bee larvae, turning other pupal cells black and ultimately killing the larval queen. The virus is capable of wiping out entire honey bee colonies and has no known deterrent beyond preventing its spread.

In 2020, when Canadian researchers were looking for viruses and other microbes spread by mosquitoes, a virus known for afflicting honey bees (Apis mellifera) was the last thing they expected to find. But they did.

As the researchers report in April in the Journal of Insect Science, for the first time, black queen cell virus (BQCV) has been discovered in North American mosquitoes. Also for the first time, researchers sequenced the virus' genome.

Cole Baril, Christophe LeMoine, Ph.D., and Bryan Cassone, Ph.D., researchers at Brandon

University in Manitoba, Canada, used a genetic sequencing method known as massively parallel next-generation sequencing to identify BQCV in a mosquito (Aedes vexans). The researchers believe that the mosquitoes indirectly acquired the virus by foraging at the same nectar sources as honey bees.

Since its discovery in 1955, BQCV has been known as one of the most common honey bee viruses. It is also one of the most poorly understood viruses affecting bees. Black queen cell virus infects queens and adult bees alike, but adults rarely show any symptoms of infections. It is part of the picornavirus order, and its genome consists of about 8,550 nucleotides of RNA. Exactly how it is transmitted from host to host is not fully understood. It may be spread by the microsporidia Nosema apis or by the Varroa mite, but it also may be transmitted by foraging expeditions of adult honey bees.

The scientists had been carrying out a genomics analysis of various mosquitoes in the Canadian prairie provinces. They identified several novel viruses and other microbial flora and were surprised to find BQCV during that search.

The Brandon researchers collected mosquitoes during 2019 and 2020 with miniature light traps. Aedes vexans mosquitoes were identified, and their RNA isolated. In 2019, 1,783 pooled mosquitos were sequenced; 2,208 were sequenced in 2020. The sequencing data was matched against BQCV sequences using the National Center for Biotech Information (NCBI) database.

The researchers also wanted to determine the evolutionary relationships within BQCVs and compared the new Canadian strain they'd found against existing viral genomes in the NCBI database. One of the sequencing reads matched a BQCV isolate from Sweden. No matches to Varroa mites or Nosema apis genomes were found, largely ruling out the potential for transmission through those organisms. However, three sequences were matched to plant chloroplasts and mapped to plants, trees and shrubs, indicating a foraging route of viral transmission.

Although mosquitoes need to feed on blood to produce eggs, flower nectar is also an important source of nutrition. Sugar deprivation is linked to reduced survival and reproduction capacity in females. However, no evidence exists showing that BQCV can replicate in mosquitoes,

indicating that mosquitoes are a dead end for the viruses. But further research will be needed to determine if mosquitoes can transmit the virus to honey bees.

“To our knowledge, this is the first report of BQCV detected in mosquitoes or any other dipteran,” the authors write. “Interspecies transmission of BQCV has been hypothesized to be due to direct (parasitism, predation, and scavenging) and/or indirect (foraging at the same nectar source) interactions between honey bees and these arthropods.”

Cassone says much remains unknown. “The virus has been found in North America; however, never in mosquitoes and never has the genome sequence been characterized,” he says. “It is surprising to me that little work has been done with this virus given its potential determinantal impacts to apiculture.”

The study is also one of the first to use recently developed next-generation sequencing (NGS) techniques to characterize the insect and virus genome. The researchers recommended the further use of NGS but with a caveat common to sequencing: “Although it requires considerable integration of bioinformatics, many limitations of traditional approaches for pathogen identification (PCR methods and serological testing) can be overcome using NGS. In addition to its greater resolution and sensitivity, NGS does not require a priori knowledge of the nucleic acid to be sequenced or specific antibodies.”

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https://entomologytoday.org/2023/04/25/black-queen-cell-virus-honey-bees-mosquitoes/

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# 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

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## 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.

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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

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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.

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