

# *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*



March 28, 2023

The Honorable Chuck Schumer  
Majority Leader  
United States Senate  
Washington, DC 20510

The Honorable Mitch McConnell  
Minority Leader  
United States Senate  
Washington, DC 20510

The Honorable Kevin McCarthy  
Speaker  
U.S. House of Representatives  
Washington, DC 20515

The Honorable Hakeem Jeffries  
Minority Leader  
U.S. House of Representatives  
Washington, DC 20515

Dear Majority Leader Schumer, Minority Leader McConnell, Speaker McCarthy, and Minority Leader Jeffries:

On behalf of the undersigned organizations representing a broad spectrum of U.S. agriculture, we urge you to cosponsor and support the House and Senate Congressional Review Act (CRA) resolutions to disapprove of the Department of Labor's (DOL's) new and harmful H-2A regulation, entitled, "Adverse Effect Wage Rate Methodology for the Temporary Employment of H-2A Nonimmigrants in Non-Range Occupations in the United States."

The CRA resolutions will be introduced by Senators Tim Scott (R-SC) and Ted Budd (R-NC) in the Senate and Representative Ralph Norman (R-SC) and House Agriculture Committee Chairman G.T. Thompson (R-PA) in the House. Although the disapproval resolutions have not yet been introduced, the language of these resolutions will be straightforward and are prescribed under CRA procedures.

The DOL's regulation comes at a time when American farmers are reeling due to record high

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costs of production that have translated into thin and even negative margins, conditions the new regulation will greatly exacerbate. Moreover, the regulation further complicates an already complex program and creates legal uncertainty for farmers who comply with requirements in good faith. The Department of Labor has also managed to develop a regulation that it, too, will have great difficulty administering, making the program even more cumbersome for farmers, many of whom produce perishable goods whose handling cannot wait on a bureaucracy.

As you know, the H-2A program is vitally important to American agriculture. Yet, the regulation promulgated by the DOL will make it much harder for farmers to maintain an adequate workforce given the cost and complexity of the wage construct being proposed, putting U.S. farmers at an even greater disadvantage vis-à-vis foreign producers that have significantly lower environmental and labor standards and also often benefit from the predatory trade practices of their governments, including high and rising subsidies, tariffs, and non-tariff trade barriers that harm U.S. farmers.

In recent years, U.S. farmers have been faced with a litany of serious challenges, including Chinese tariffs, the pandemic which is still disrupting supply chains and driving up costs, a string of severe natural disasters, and inflation that has fueled sharp increases in costs of production, costs that cannot necessarily be offset by greater returns on crop sales because farmers are price-takers for their crops in the marketplace and so returns are determined by the buyer.

Because of the H-2A program's critical importance to America's farmers, key reforms to the program that would make it work more effectively for farmers on the ground would be very beneficial. Unfortunately, the new regulation would take the program in the opposite direction, harming the farmers who depend on it.

One of the lessons the pandemic reminded us of is the importance of a domestic food supply that ensures our grocery shelves are stocked, that our food is affordable, and that it is safe. Yet, very troublingly, the United States just recently became a net importer of food. Unfortunately, the H-2A regulation promulgated by the DOL ignores the lesson and current conditions in agriculture and, as a result, its new regulation will only serve to increase our reliance on imported food.

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Please cosponsor and support the disapproval resolutions. Thank you for your consideration.

AWC Steering Committee

American Farm Bureau Federation  
AmericanHort  
Florida Fruit & Vegetable Association  
International Fresh Produce Association  
National Council of Agricultural Employers  
National Council of Farmer Cooperatives

National Farmers Union  
National Milk Producers Federation  
National Pork Producers Council  
National Potato Council  
USA Farmers  
U.S. Apple Association  
Western Growers

State/Regional/National Organizations

Alabama Nursery and Landscape Association  
Allegheny County Ag Association  
Allegheny County Farm Bureau  
American Cotton Producers  
**American Honey Producers Association**  
American Soybean Association  
American Sugar Alliance  
American Sugar Cane League  
American Sugarbeet Association  
Arizona Farm Bureau Federation  
Arizona Nursery Association  
Arkansas Farm Bureau Federation  
California Apple Commission

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California Association of Winegrape Growers  
California Blueberry Association  
California Blueberry Commission  
California Canning Peach Association  
California Cherry and Industry Association  
California Pear Growers Association  
California Seed Association  
California State Beekeepers Association  
California State Floral Association  
California Strawberry Commission  
California Sweet Potato Council  
Carolinas Cotton Growers Cooperative, Inc.  
Cherry Marketing Institute  
Colorado Fruit and Vegetable Growers Association  
Colorado Nursery & Greenhouse Association  
Colorado Potato Administrative Committee  
Colorado Potato Legislative Association  
Corn Growers Association of North Carolina  
Cotton Warehouse Association of America  
Empire State Potato Growers (ESPG)  
Farm Credit Council  
Federation of Employers and Workers of America  
Florida Citrus Mutual  
Florida Farm Bureau Federation  
Florida Nursery, Growers & Landscape Association  
Florida Strawberry Growers Association  
Florida Tomato Exchange  
Georgia Green Industry Association, Inc.  
Georgia Peach Council  
Georgia Urban Ag Council  
Idaho Apple Commission  
Idaho Dairymen's Association  
Idaho Farm Bureau Federation  
Idaho Grower Shippers Association

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Idaho Hop Growers Association  
Idaho Potato Commission  
Idaho-Oregon Fruit and Vegetable Association  
Illinois Farm Bureau  
Illinois Green Industry Association  
Illinois Landscape Contractors Association  
Indiana Farm Bureau  
Kansas Farm Bureau  
Kansas Nursery & Landscape Association  
Kentucky Farm Bureau Federation  
Louisiana Cotton & Grain Association  
Louisiana Farm Bureau Federation  
Louisiana Irrigation Association  
Louisiana Nursery and Landscape Association  
Maine Farm Bureau Association  
Maine Landscape and Nursery Association  
Maine Potato Board  
Malheur County Onion Growers Association  
Maryland Farm Bureau  
Massachusetts Nursery and Landscape Association, Inc.  
Michigan Apple Association  
Michigan Blueberry Growers Association  
Michigan Farm Bureau  
Michigan Greenhouse Growers Council  
Michigan Nursery & Landscape Association  
Michigan Processing Apple Growers  
Michigan Processing Asparagus Growers  
Michigan Vegetable Council  
Minnesota Farm Bureau Federation  
Minnesota Nursery & Landscape Association  
Mississippi Farm Bureau Federation  
Montana Farm Bureau Federation  
National All-Jersey  
National Asparagus Council

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National Christmas Tree Association  
National Cotton Council  
National Cotton Ginners Association  
National Onion Association  
National Peach Council  
National Sorghum Producers  
National Sweet Potato  
National Watermelon Association  
NC Ag Partnership, Inc.  
Nebraska Cooperative Council  
Nebraska Farm Bureau Federation  
New England Apple Council  
New Jersey Farm Bureau  
New Jersey Landscape Contractors Association  
New York Apple Association  
New York Apple Growers  
New York Farm Bureau  
New York State Flower Industries  
New York State Horticultural Society  
New York State Vegetable Growers Association  
NM Farm and Livestock Bureau  
North American Blueberry Council  
North Carolina Christmas Tree Association  
North Carolina Egg Association  
North Carolina Farm Bureau  
North Carolina Growers Association  
North Carolina Horse Council  
North Carolina Potato Association  
North Carolina Small Grains Growers Association  
North Carolina Soybean Producers Association  
North Carolina State Grange  
North Carolina Strawberry Association  
North Carolina Sweet Potato Commission  
North Carolina Tomato Growers Association

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North Dakota Grain Growers Association  
Northland Potato Growers Association  
Northwest Horticultural Council  
Ohio Farm Bureau Federation  
Ohio Green Industry Association  
Oklahoma Farm Bureau  
Oklahoma Nursery and Landscape Association  
Olive Growers Council of California  
Oregon Association of Nurseries  
Pacific Seed Association  
Panhandle Peanut Growers Association  
Pennsylvania Cooperative  
Potato Growers  
Pennsylvania Farm Bureau  
Pennsylvania Landscape & Nursery Association  
Pennsylvania Vegetable Growers Association  
Plant California Alliance  
Potato Growers of Michigan, Inc.  
Snake River Farmers' Association  
Snake River Sugarbeet Growers Association  
Society of American Florists  
South Carolina Farm Bureau Federation  
South Carolina Peach Council  
South East Dairy Farmers Association  
Southeastern Cotton Ginners Association  
Southwest Council of Agribusiness  
Tennessee Farm Bureau Federation  
Tennessee Nursery & Landscape Association, Inc  
Texas Corn Producers  
Texas Farm Bureau  
Texas International Produce Association  
Texas Nursery & Landscape Association  
Texas Vegetable Association  
The Consolidated Central Valley Table Grape Pest and Disease Control District

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The Midwest Council on Agriculture  
Tobacco Growers Association of NC  
U.S. Beet Sugar Association  
U.S. Durum Growers Association  
U.S. Tobacco Cooperative Inc.  
United Potato Growers of America  
US Custom Harvesters, Inc.  
US Sweet Potato Council  
USA Rice  
Ventura County Agricultural Association  
Virginia Agribusiness Council  
Virginia Agricultural Growers Association  
Virginia Cattlemen's Association  
Virginia Farm Bureau  
Virginia Nursery & Landscape Association  
Washington Growers League  
Washington State Potato Commission  
Washington State Tree Fruit Association  
Washington Winegrowers Association  
West Virginia Nursery & Landscape Association  
Western Peanut Growers Association  
Wisconsin Landscape Contractors Association  
Wisconsin Potato & Vegetable Growers Association  
Wyoming Farm Bureau Federation  
Yuma Fresh Vegetable Association

Agribusinesses

3J Ranch, LLC  
A & B Costanza Farms LLC  
A. Verdell Olson Ranch  
A. Vern Woolstenhulme  
Aaron Ball Farms, Inc.  
Ag Installers, Inc.

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Ag Valley Cooperative  
Agrico Labor LLC  
Agri-Placement Services, Inc.  
ALCIVIA  
Allen Noble Farms, Inc  
Amcot  
Anderson Farms  
Andrew Johnson  
Ann Margaret Pointer  
Arcadia Ag  
Area Custom Farming, LLC  
Aristocrat Farms  
Aycock Legacy Farms, LP  
B&J Lehman Farms Inc  
Bachman Land and Livestock LLC  
Baker Farms  
Baker Ranches, Inc.  
Barrie Farms, LLC  
Bartel Farm  
Bartley Farms  
BCF Farms, Inc.  
Beadz Brothers Farms  
Beard Farms  
Beaverhead 7-Up Ranch, Inc.  
Beckley Harvesting Inc  
Bennett Ag Research Group  
Farms, LLC  
Berning Farms  
Beutler Farms, LLC.  
Big D Farms, LLC  
Big Grassy Farms, LLC  
Big Sky Seed, LLC  
Bill Geyer  
Bill Jensen & Son, Inc.

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Birch Creek Farm Services Inc  
BKS Farms, LLC  
Blaine Larsen Farms, Inc.  
Blincoe Farms, Inc  
Blue Cascade Orchards Company  
Blustone Vineyards  
Bobrick Custom Hay, Inc  
Bollmeyer Inc  
Bonnie Plants  
Bosen Land & Livestock, LLC  
BR Ricks Farms  
Brandon Bertch Farm and Ranch Inc.  
Brandon Run GP  
Brent Hillman  
Brent Lott Farms, Partnership  
Bret Robins Farms  
Brogan D Farms  
Broken Circle Ranch  
Broksle Ranch  
Brown and Brown of MT, Inc.  
Brown Harvesting LLC  
Bruce Bean Farms, INC  
Burmah Triangle, LLC  
Burns Ranch  
Burusco Farms  
Bussa Orchards  
Buyan Ranch, Inc.  
C E Jackson Farms, Inc.  
Calcot  
Carl Ochs LTD  
Carney Farms  
Carolinas Cotton Growers Cooperative  
CC Tree Farms, LLC  
Cedar Family Farms

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Cenarrusa Farms, Inc.  
Central Valley Ag Cooperative  
Challis Creek Cattle Company, LLC  
Checkerboard Cattle Company, LLC  
Christensen Family Farms, LLC  
Cindys Red Wagon  
Circle C Ranch, LLP  
Civano Nursery, Inc.  
CL Hansen Farms, Inc.  
Claar Farms, Inc.  
CLF, Inc.  
Cluck Harvesting  
Co-Alliance Cooperative, Inc  
Cody Bingham Farms, Inc.  
CoMa Farms, LLC  
Cone's Folly Blueberries, Inc.  
Cornie Land and Livestock, Inc.  
Curtis Giles  
CY Ranchs, LLC  
D&B Ag, Inc  
D. Yam Farms, LLC  
Darrow Farms, Inc.  
Dave Ward Farms  
David Allen Primrose David Ehlers  
David Hults Farms, LLC  
David Neibaur  
David Patrick Farming, LLC  
Dean Snarr & Son, LLC  
DeBruycker Charolais  
Dennis Walen  
Derek Reed Farms, LLC  
Derrick Maier Farms, LLC  
Desert Ridge Farms  
Desert View Ranch, LLC

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Diamond i, Inc.  
Direct Staffing Agency, LLC  
Dixon Land & Cattle, LLC  
DLR Farms LLC  
Double C. Farms, Inc.  
Double D Farms  
Double G, LLC.  
Double S Farms, LLC  
Doug Hartley Farms Inc.  
Driscoll Brothers Partnership  
Dry Creek Farms, LLC  
Dwight R. Bingham  
E&M Farms, Inc  
Eames Acres, Inc.  
Edwards Ranch, LLC  
EME Custom Farming, LLC  
Erickson Grain  
Evan Wood Farms, LLC  
Farmers Cooperative  
Farmers Daughters  
Fellowship Farms, Inc.  
Fessenden Custom  
Farming Fike Farms  
Folsom Cattle Management Services  
Folson Farms  
Foster Farms  
Four B Farms  
Four Leaf Farms, LLC  
Fowers, Inc.  
Fowler Farms  
Fred Hirschy  
Fresh Harvest  
Friske Orchards, Inc  
Frontier Farms

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Frontline Ag Solutions, LLC  
G+ Ranches, Inc.  
Gallagher Vineyard & Winery  
Gavin Orchard  
Gibbs Farms, LLC  
Gibson Family Inc.  
Giem Ranches, Inc.  
Gingerich Farms  
Gleue Harvesting LLC  
Golden Plain Farms, Inc.  
Golden Ridge Farms  
Golden Sun Farms  
Grandview Farm Limited Partnership  
Grant 4-D Farms, LLC  
Grant Neibaur & Sons Farms  
GreenStone Farm Credit  
Greg Smith Farms LLC  
H-2 Tax, LLC  
Hamer Farms, LC  
Harbor Hill Fruit Farms  
Hart Cattle & Grain Farm  
Hartung Brothers Inc  
Harvest Moon Inc  
Hawkeye Farms, LLC  
Hawley Land & Livestock  
Hayhook Farms, Inc.  
Heeringa Concrete, LLC  
Helle Livestock  
Heritage Family Farms  
High Desert Turf  
Hillside Ranch  
Hirsch Fruit Farm  
Historic Weston Orchard & Vineyard  
Hoover's Hatchery Co LLC

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Horse Creek Hay & Cattle, LLC  
Hults Farms  
Hunewill Land & Livestock Co., Inc.  
Huntsman Ranch Company  
HW Burns Family, LLC  
Idaho Fresh Farms, LLC  
J & K Farms, Inc.  
J & W Farms LLC  
J and M Farms  
J&H Fleming Farms Inc.  
J&W Walker Farms  
Jack Hirschy Livestock, Inc  
Jacobs Silver K Farms, Inc.  
Jaindl Farms, LLC  
Jason E. Harper  
Jay Ray Sageser Farms  
JDG Farms Inc.  
JEL Trucking LLC  
Jentzsch Karl Farms  
Jeppesen Brothers Ranch  
JK Family Farms, LLC  
Josh Gibbs  
JS Farms Inc  
JTS Inc  
Justin Christensen Farms, LLC  
Justin Price Farms, LLC  
K Farms Inc  
K.W. Huskinson & Sons, Inc.  
Kadrmass Farms  
Keeley Farms  
Kenneth E. Jr. & Jacqueline A. Wheeler Farm  
Kevin Huffman Farms LLC  
KG Farms, LLC  
Kim Wahlen Farms, GP

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King Orchards  
Kirk Jacobs Farms  
Kraus Farms, LLC  
KTDC, LTD  
Kuchenbecker Excavating Inc  
Kuehnle Farms LLC  
L1 Cattle, LLC  
Labor Consultants International  
Labor Inbound  
Labor Services International, LLC  
Ladd Wahlen Farms  
Lake Ag, LLC  
Lake Michigan Produce, LLC  
Lawrence & Associates of MN Inc., dba Rocket Turf  
Lazy AS Farms  
LC McIntyre Farms, LLC  
Leitz Farms  
Lemhi Frontier, LLC  
Linse Ranch, LLC  
Little Valley Mutual Irrigation Company  
Littlefield Ranch, LLC  
Lone Wolf Farms  
Louis Scatena Ranch  
Lovell & Cook Ag  
Low Country Labor Company  
LS Carson Mink Ranch, LLC  
Luhrs Certified Seed, LLC  
Lynn Hirschy  
Lynn Whittig  
Malecha Enterprises Inc  
Manzana LLC  
Marsh Creek Farms  
Marshall Farms, LLC  
Marvin Altendorf Farm

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másLabor  
Mason Cattle Company, LLC  
Matt Nail Farms, LLC.  
McCoy Family Apiaries LLC  
Meinke Custom Combining LLC  
Melvin Lee Peterson, LLC  
Mercer Ranches  
Metzler Inc  
Michael J. Miller  
Mid-Kansas Cooperative  
Mike Lewis  
Milton McKee  
Mitch Neibaur Farms  
Mix Miller Farms, LLP.  
Moiese Valley Ranch, LLC  
Monica Ware  
Monson Fruit Co., LLC  
Morgan Meyers  
Moyer's Hatchery LLC  
N & M Farms  
Neil Hoffmann Harvesting  
Nelson Angus Ranch, LLC  
Neumiller Farms Inc  
Never Sweat Ranch  
Noo Sun Dairy, LLC  
NorVue Farms  
Oak Hill Farms  
Otto Ag Investments LLC  
Owyhee Rangeland Management, LLC  
Pahl Farms, LLC  
Park Ranch, LLC  
Park River Split Ranch, LLC  
Parker Trucking & Harvesting  
Peak Season Labor, Inc

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Penfold Farms  
Peters Family Farms, GP  
Peterson Farms  
PGC Farms  
Picabo Livestock Company, Inc.  
Plains Cotton Cooperative Association  
Plains Cotton Growers, Inc.  
Polatis Brothers Farms  
Pratt Creek Ranch  
Precision Pumping LLC  
Preston L. Koehn  
Quality Ag Services  
Quality Nutrient Spreading  
Quality Pak Farms, LLC  
Quick Farms  
R & D Gould Farms, LLC  
R&R Farms LLC  
R.B. Family Farms  
Raile Farms  
Ralph Johnson Farm Partnership  
Rebish/Konen Livestock  
Red Hen Turf Farm  
Reynolds Brothers, LLP  
Reynolds Farms, Inc.  
Reynolds Livestock  
RGB Farms, LLC  
Rinkes Custom LLC  
Rives Ranches, LLC  
RL Brown Farms, LLC  
Robben Ranch  
Robert J. Meyers Farms, Inc.  
Robertson Spraying LLC  
Robison Farms, Inc.  
Rod Rohde Custom Farming LLC

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Rodney Hansen AG, LLC.  
Rogers' Ranch, LLC  
Ronald Esplin Farms, LP  
Roossinck Orchards, Inc.  
Roost Potato Co., Inc.  
Roth Farms, General Partnership  
Rounds Farms  
Ruby Valley Pressure Wood Treatment and Post Co.  
Ruth Farms LLC  
Ryan Farms Partnership  
Ryan Johnson Farms, LLC.  
Sabala Farms, Inc.  
Salmon Falls Land & Livestock Co.  
Samantha Anderson  
Sandy Bay Mink Ranch LLC  
Sandy Bay Pet Food LLC  
Santa Margarita Ranch, LLC  
Santa Rosa Spring Ranch, L.P.  
Schaeffer Farms, GP  
Schilling Family Farms  
Schultz Fruitridge Farms  
Searle Land and Cattle, LLC  
Shamrock Ranch, LLC  
Shaw Land and Livestock  
Shawn Wentzel DBA Alaska Ranch and DBA  
Spring Creek Seeds  
Shoesole Farms, Inc  
Shuter Sunset Farms Inc  
Silver Oak Farms  
Simmons Farms Partnership LLC  
Skyline Agricultural Services, Inc.  
Smith Cattle LLC  
Snake River Daires, LLC  
Southern Impact

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Southside Farming, LLC  
Specialty Crop Farm Labor Contractors, LLC  
Spring Valley Associates, LLC  
Stanley Isaac  
Staplcotn  
Stastny Canyon View Farms, Inc.  
Stecklein Farms  
Steiner Farms LLC  
Strickland Farms  
Sunrise Organic Dairy, LLC  
Sunsweet Growers Inc.  
SVF, Inc.  
T L K Farms, Inc.  
T&C Schlenner LLC  
Taylor Smith Farms, LLC  
Tellys Greenhouse  
Templeton Family Farms  
Terry Johnson  
Teton Trees  
The Turf Corporation  
Third Day Orchard Company, LLC  
Thomas Tilleman  
Thompson Farms  
Thompson Seed Potato, LLC  
Thouvenel Harvesting  
Titan Farms  
Titmus Family Farms, LLC  
Travis Christensen Farms, LLC  
TRC Farms  
TriAg GP  
Triple B Farms, LLC  
Twin Bee Orchards LLC  
Farms, Inc.  
US-2 Farms, LLC

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Val Wahlen Farms  
Vandervegt Dairy, LLC  
Vanisko Ranches  
Vernon H. Pecht  
Vista Orchards LLC  
W R Cleverly  
wafila  
Walters & Walters, a Joint Venture  
Walters Osgood Farms, LLC  
Wayne Tinkler  
Wes Beutler  
Western Farms, Inc.  
Westside General Partnership  
Westview Orchards and Winery  
Will Rowe Farm  
Willbrandt Enterprises Inc.  
William T. Sherbine  
Windy Ridge Orchards LLC  
Witt's End Farms  
Wittenbach Orchards, LLC  
Wolfe Brothers, Inc.  
Wood Family Farms  
Wood Family Partnership  
Wooden Shoe Farms, LLC  
WTR Martin Farms Partnership  
Young's Riverfront Ranch, LP  
Zach Beaudry Farm  
Zito Farms, LLC

cc: U.S. Senate

cc: U.S. House of Representatives

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## Stop signals reduce dopamine levels and dancing in honeybees

by [Chinese Academy of Sciences](#)

April 13, 2023



A stop signaler is attacking waggler dancers. Credit: Dong Shihao

Researchers from the Xishuangbanna Tropical Botanical Garden (XTBG) of the Chinese

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Academy of Sciences and the University of California San Diego have revealed that receiving an inhibitory signal (stop signal) associated with negative food conditions can decrease brain dopamine levels in dancing honeybees.

The study was published in *Current Biology* on April 13.

Dopamine is known as the feel-good neurotransmitter—a chemical that ferries information between neurons. In multiple animals, [dopamine](#) is involved in arousal, cognition, and sensitivity to stimuli. It is also associated with seeking and wanting behavior, particularly with the pleasurable experiences of reward.

Honeybees communicate to nestmates the location of resources by performing a waggle dance (i.e., a repetition of movements consisting of a waggle "run" and a return "run" that is unique to each particular resource location). Their behavior type is significantly correlated with [dopamine levels](#) in bee heads. Waggle dancers have significantly higher dopamine levels than all other bees.

Honeybees have a sophisticated mechanism for communicating peril. For example, foragers use the stop signal—an inhibitory signal targeted at waggle dancers—to warn of a dangerous or declining [food source](#) and to counteract the [positive feedback](#) generated by the waggle dance.

According to Dr. Dong Shihao of XTBG, it was unclear, however, how predators affected the honeybee food-wanting system.

The researchers decided to test the effects of predator threat on the [waggle dance](#) and stop signal. They observed that foragers produced no stop signals when they were not attacked. In contrast, when attacked by hornets, foragers completely ceased waggle dancing. Attacked bees also abandoned the dangerous feeder and spent more time in the hive. In both whole-colony and individual measurements, stop signaling sharply increased when bees were attacked by hornets.

"Our study provides the first evidence that receiving a signal associated with negative food conditions (the stop signal) is sufficient to decrease brain dopamine levels in waggle dancers,

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even when these dancers have not experienced peril," said Prof. Tan Ken from XTBG, corresponding author of the study.

Moreover, the researchers discovered that increasing bee dopamine levels reduced the aversiveness of hornet attacks. Bees that fed on dopamine sucrose solution spent significantly more time staying on the feeder after being attacked by a hornet, produced fewer stop signals when they returned to the hive, and performed more waggle dances than bees that were also attacked but fed pure sucrose solution. Therefore, the fear-inducing effects of an attack could be countered by pharmacologically increasing bee dopamine levels.

"Attacks by hornet predators can reduce brain dopamine levels and cause foragers to pass on such stressful information via stop signals that also reduce brain dopamine levels in recipients. Artificially increasing dopamine levels by feeding bees dopamine would reduce the aversive effects of [hornet](#) attacks," said Prof. Tan.

<https://phys.org/news/2023-04-dopamine-honeybees.html>



**Air pollution is not just a human problem – it's also changing the gut of British bumblebees**

14 April 2023

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A research team from the University of Leicester is investigating air pollution's effect on the gut of British bees.

Human activity is contributing to pollution that is affecting our health. According to WHO estimates, atmospheric air pollution is estimated to cause 4.2 million premature deaths worldwide per year. Scientists and the public alike are well aware of how human activity and pollution is affecting our health, but new research has identified how bumblebees may be caught in the crossfire.

Research from the University of Leicester has identified that air pollution affects the intricate web of microbes that are all around us. Populations of bees are also declining worldwide, so the Leicester team is investigating whether these two factors are connected. Researchers are now looking into the effects of air pollution on the bee gut microbiome, a community of beneficial bacteria vital to maintaining bee health.

The team is researching how air pollution affects bee's beneficial gut bacteria and microbiome composition, and the subsequent impact on bee health. Dr Hannah Sampson, first author on the study, explains "We know that pollution is a massive issue globally and we know that bee

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decline seems to be increasing over the last few years. Maybe they're linked, as bees are constantly exposed to these pollution particulates in the air.”

The bumblebee has a delicate gut microbiome, that has coevolved with bee species over millions of years. The balance of the bacteria in the bee gut microbiome is vital to maintaining bee health, and any disruption to this microbiome could pose a risk not only to bee health but to pollination and global food security. *Snodgrassella alvi* is a beneficial member of the bee gut microbiome, that colonises bees' large intestine in a structure called a biofilm. A biofilm is a protective matrix that promotes bacterial colonisation on surfaces (e.g. like plaque on teeth). *S. alvi* is especially important as it is one of the initial colonisers of the bee gut microbiome.

Dr Sampson, part of the air pollution bacteria team led by Professor Julie Morrissey at the University of Leicester, grew *S. alvi* in lab conditions and exposed it to black carbon air pollution. She found that exposure to black carbon changed the behaviour of *S. alvi* and the structure and formation of the bacteria's biofilm. This is worrying as any disruption to this could have knock-on effects to the overall composition and function of the bee gut microbiome.

Researchers also looked at the effects of black carbon pollution on live bumblebees. They sampled bees before and after exposure and measured the abundance of bacteria in their gut to observe any differences. The researchers found that there was a significant change in the abundance of two beneficial bacteria that are vital to the health of the bee gut microbiome.

Whilst Dr Sampson urges caution on concluding that air pollution directly contributes to bee population decline from this initial study, she is clear on the importance of understanding this interaction to learn how to better protect our planet: “More research needs to take place as air pollution is having a much greater impact than we think. Air pollution affects microbial communities. Changes to these important communities could have detrimental effects on lots of different ecosystems that affect bees and also directly affect humans.”

Dr Sampson will present her data at this year's Microbiology Society Annual Conference at Birmingham International Convention Centre, which runs 17-20 April 2023. Her talk, Air pollution's effect on microbial dynamics, will take place on Thursday 20 April at 11.45am.

The Microbiology Society's principal goal is to develop, expand and strengthen the networks available to its members so they can generate new knowledge about microbes and share it,

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driving us towards a world in which microbiology provides the maximum benefit to society. Find out more at [microbiologysociety.org](https://microbiologysociety.org)

<https://le.ac.uk/news/2023/april/bees>

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# Psychology Today

## The Fascinating Minds and Personalities of Bees

Stephen Buchmann's new book may surprise you in many different ways.

Posted April 13, 2023 | [Reviewed by Michelle Quirk](#)

Key points

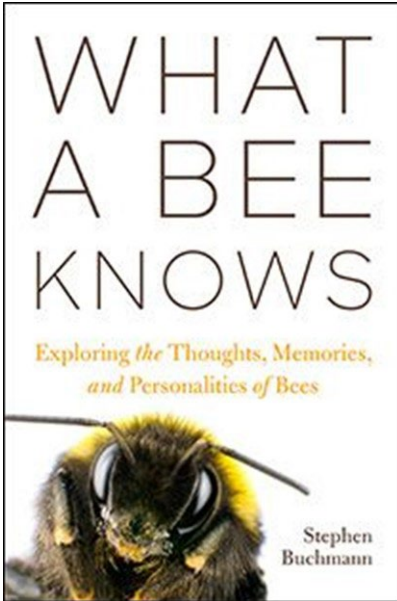
- Bees can remember the shape, colors, and scents of flowers for several days and count up to four.
- Bees exhibit social learning whereby they can learn by simply watching a hive mate perform a task.
- Bug splats on a windshield record the end of life for myriad bees, flies, wasps, butterflies, and other pollinators.

Despite their small brains—around one million neurons compared to our 100 billion—the cognitive and emotional lives of bees are remarkably and surprisingly complex. In his fascinating new book called [What a Bee Knows](#), entomologist Stephen Buchmann explores a bee's way of seeing the world and introduces the scientists who make the journey possible. Part of the book's description reads,

*Buchmann's insatiable curiosity and sense of wonder is infectious...What a Bee Knows will challenge your idea of a bee's place in the world—and perhaps our*

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own. This lively journey into a bee's mind reminds us that the world is more complex than our senses can tell us.



Here's what Buchmann had to say about questions centering on what it is like to be a bee.

**Marc Bekoff:** Why did you write *What a Bee Knows*?

**Stephen Buchmann:** My professional [career](#) as a government entomologist and then as a university professor has allowed me to study honey bees; then bumblebees, carpenter bees, digger bees in Arizona and Mexican deserts; and, also, stingless bees and orchid bees of tropical rainforests in Costa Rica and Panama. I study the nesting, [mating](#), and foraging behaviors of all these bees.

But, in writing *What a Bee Knows*, I wanted to go a bit farther afield to get out of my “comfort zone” of flowers and bees or male bees searching for prospective mates. So, I began by reading much of the modern literature by scientists around the world dealing with the sensory systems of bees and how they learn on their own or by watching other bees, and the inner workings of the different cells that make up the poppy seed–sized bee brain. I wanted to tell a different and cohesive story about just how clever bees are. I knew I wanted to reach a wide and popular audience and not just talk with other bee scientists (melittologists) who already knew many of these things about what bees know and remember.

**MB:** Who is your intended audience?

**SB:** Most of all, I wanted my book to be readable, interesting, and accessible to a general audience. My demographic is likely someone who listens to NPR programs like "All Things Considered," or the popular radio program "Science Friday," or delights in amazing nature documentary films narrated by Sir David Attenborough, with whom I've been fortunate to work in the Sonoran desert south of Tucson.

**MB:** What are some of the topics you weave into your book and some of your major

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messages?

**SB:** Hopefully, my book brings general readers into the ways and minds of bees. It details the rich sensory world that is quite alien to our own. Humans and bees both have trichromatic vision (we see three primary colors). We see red, green, and blue that match receptors in our eyes while bee vision is shifted away from the red (they are red-blind) and into the ultraviolet. A bee's vision is also 60 times less distinct than our own. A bee can't even see a flower until it's about 6 to 10 inches away.

Bee [olfaction](#) is about 100 times keener than our own, and they can “read braille”—that is, recognize the fine textures of flower petals. Like us, they also taste sweet, sour, bitter, and salty substances. Unlike us, they can detect the degree of polarization of light in the blue sky.

Bees are smart. They can learn how to work complex flowers to retrieve rewards of nectar and pollen. They can remember the shape, colors, and scents of flowers for several days or count up to four. Bees can run a maze like a rat. Bees are problem solvers. They have been trained to slide doors, lift a lid, roll away a ball, or pull a string (i.e., tool-using) to get at hidden nectar.

They even exhibit [social learning](#) whereby they can learn by simply watching a hive mate perform a task. We believe that bees have nociception and can feel pain. In the simplest form, that is the definition of sentience. We don't know for sure, but bees may even have a primitive form of consciousness or certain emotions. Some researchers consider that honey bee memories are formed during sleep and that bees may even dream.

Lars Chittka believes that bumblebees exhibit a form of play (rolling balls without being rewarded), but I'm not entirely convinced of that. Certain bees may even plan for the future by creating “resin mines” in the bark of tropical trees or [cutting](#) slits in the leaves of tomato flowers. The latter seems to induce flowering much like a gardener might pinch off old flowers to induce new buds to form. It's amazing that we are just beginning to learn the innermost secrets of bee brains and just how intelligent they are.

**MB:** How does your book differ from others that are concerned with some of the same general topics?

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**SB:** What a Bee Knows isn't just another "beekeeping for dummies" book. The most similar book to mine is [The Mind of a Bee](#) by Lars Chittka. His book details in greater scientific detail the inner workings of the bee brain and many of the experiments on bee learning that have taken place in his UK laboratory. It is aimed at a more specialist audience.

**MB:** Are you hopeful that as people learn more about these amazing insects, they will treat them with more respect and dignity?

**SB:** Yes, but bee declines due to anthropogenic causes worry me a great deal—climate warming, habitat loss, insecticides, and herbicides. Habitats around the world are losing bees (up to 20 percent in some cases), other pollinators, and insects in general. This is due to the same anthropogenic culprits that we already know about: clearing land for agriculture and housing, using the “chemical chainsaws” of agrichemicals on our fields and lawns, diseases, invasive plants, and animals and even things like nocturnal artificial lighting or the carnage that comes from the estimated 1.4 billion vehicles in the world.

Bug splats on your windshield record the end of life for myriad bees, flies, wasps, butterflies, and other pollinators, some of the small creatures that run the world's ecosystems. But, yes, I'm somewhat hopeful that we can change our ways and that learning to appreciate the alien sensory world of bees, and their [intelligence](#), sentience, and, perhaps, primitive form of consciousness will give us pause before reaching for that can of insecticide or installing a patio bug zapper. It would give me great pleasure if my book can help in a small way toward conserving pollinating insects.

## References

In conversation with Dr. Stephen Buchmann, a fellow of the Linnean Society of London, a pollination ecologist specializing in bees, and an adjunct professor with the departments of entomology and of ecology and evolutionary biology at the University of Arizona.

<https://www.psychologytoday.com/gb/blog/animal-emotions/202304/the-fascinating-minds-and-personalities-of-bees>

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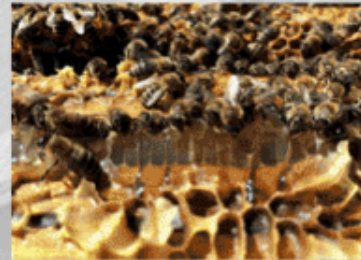
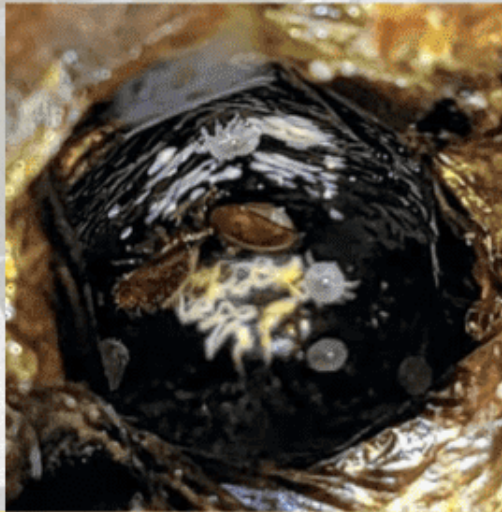
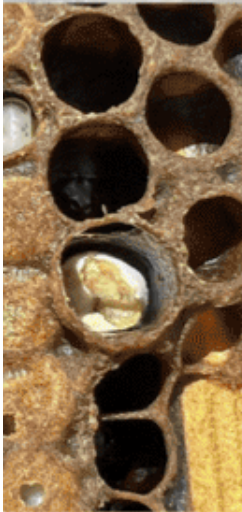


**SURVEY IS LIVE**  
**April 1<sup>st</sup> – 30<sup>th</sup>!**



**BIP Loss & Management Survey:  
Monitoring Colony Losses Since 2008**

Your participation is **vital** for informing beekeepers, researchers, policy makers, and the greater public on colony management and loss trends.



**Management Topic for 2023:**

We have shortened the survey to focus on a single management topic each year, revisiting topics every few years. This year, the focus is on:

**Pest & Disease Management Practices**

Separate questionnaires are available for small-scale and commercial beekeepers.

**Take the survey at [beeinformed.org](https://beeinformed.org)!**

Be included. Be involved. Bee informed.

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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. Schmidlein, and Amy A. Karpel voted in the affirmative.

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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](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.
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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/er051111935.htm](https://www.usitc.gov/press_room/news_release/2022/er051111935.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](mailto:cassie@ahpanet.com)

281-900-9740

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

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## 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. Secondly, 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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