

Catch The Buzz

P.O. Box 38028, Germantown, TN 38183

Memphis Area Beekeepers Association

www.memphisareabeekeepers.com

Meeting Location: 7777 Walnut Grove Rd # C, Memphis, TN 38120

MEMBERS THE MEETING WILL OCCUR IN THE D WING. Come in the C-Wing entrance and go to the D wing doors on the RIGHT.

Meeting Date & Time November 9th - at 7pm

Buy ticket(s) for the Christmas Dinner and end of season celebration.

Things to do for the beekeeper: Feed your light hives as long as the bees are taking the fluid. Finish up all winterization of your hives. On a cool day when the bees are all inside, weed-eat around your hives. Enjoy Thanksgiving! Start purchasing next year's bee packages, nucleus hives and queens and equipment. Install mouse guards at entrance of hives. Finish winter feeding. Start to get equipment ordered or begin to build for next year.

- Attend Bee Meetings & bring a friend. Make sure equipment is stored properly to stop wax moth damage
- You can feed syrup when the temperature allows (45-50 degrees)
- Talk to experience beekeepers for winter preps. On warm days bees will forage for pollen.
- Pay State and Local Dues

Register your hives with the State

The Bees. Even less bee activity and cold weather will send them back into cluster. On warm days watch for bees to fly out to make cleansing flights and forage for pollen. Keep the entrances just small enough for two bees to enter. The bees may start to cluster. They may not yet go into a full winter cluster. They may break cluster frequently on warm days and recluster at night. But they will begin to cluster for the winter.

CATCH THE BUZZ – Urban Environments Boost Pathogen Pressure on Honey Bees

Researchers from North Carolina State University have found that urban environments increase pathogen abundance in honey bees (*Apis mellifera*) and reduce honey bee survival. The finding raises significant questions as urban areas continue to grow at the expense of rural environments, and urban beekeeping becomes more popular.

“We wanted to determine if the increased temperatures and impervious surface areas associated with urban environments have an effect on the number of pathogens bees are exposed to, and to the bees’ immune responses,” says Steve Frank, an associate professor of entomology at NC State and co-author of a paper on the work.

“We also wanted to look at both managed honey bee colonies and ‘wild’ ones, to see if that made a difference – and it did,” says David Tarry, a professor of entomology at NC State and corresponding author on the paper.

Working with volunteers, the researchers identified 15 feral colonies, living in trees or buildings without human management, and 24 colonies managed by beekeepers in urban, suburban, and rural areas within an hour’s drive of Raleigh, N.C. The researchers collected worker bees from all of the colonies, and analyzed them to assess the bees’ immune responses and their overall “pathogen pressure.” Pathogen pressure accounts for both the types of pathogen species present and the abundance of those pathogens.

The research team found that colonies closer to urban areas and those managed by bee keepers had higher pathogen pressure.

“Overall, we found that the probability of worker [bee] survival in laboratory experiments declined three-fold in bees collected from urban environments, as compared to those collected in rural environments,” Frank says.

However, the researchers also found that immune response was not affected by urbanization.

“Since immune response is the same across environments, we think the higher pathogen pressure in urban areas is due to increased rates of transmission,” Tarry says. “This might be because bee colonies have fewer feeding sites to choose from in urban areas, so they are interacting with more bees from other colonies. It may also be caused by higher temperatures in urban areas affecting pathogen viability or transmission somehow.”

“Feral bees expressed some immune genes at nearly twice the levels of managed bees following an immune challenge,” Frank says. The finding suggests that further study of feral bee colonies may give researchers insights that could improve honey bee management.

“Honey bees are important pollinators and play a significant role in our ecosystems and our economy,” Tarry says. “This work is really only a starting point. Now that we know what’s happening, the next step is to begin work on understanding *why* it is happening and if the same negative effects of urbanization are hurting solitary, native bee species that are presumably more sensitive to their local environment.”

Bee Culture magazine http://www.beeeculture.com/catch-the-buzz-urban-environments-boost-pathogen-pressure-on-honey-bees/?utm_source=Catch+The+Buzz&utm_campaign=fd70882268-Catch+The+Buzz+4+29+2015&utm_medium=email&utm_term=0_0272f190ab-fd70882268-256261941

Recipe////////**Honey and Lemon Tea**, Add a sliver or two of fresh ginger to the cup of honey and lemon tea. Note that honey should not be fed to young children under 18 months old.

Ingredients

- 1 Tbsp lemon juice
- 2 Tbsp honey
- 1/2 cup or more of hot water

Method

Put honey and lemon juice into a tea cup or mug. Add hot water and stir. Add more lemon juice, honey, or hot water to taste.

Native Field–foraging Bees Exposed to Neonicotinoid Insecticides and Other Pesticides

United States Geological Survey

According to the first-ever study of pesticide residues on field-caught bees, native bees are exposed to neonicotinoid insecticides and other pesticides. This report was conducted by the U.S. Geological Survey and published in the journal

Science of the Total Environment.

This research focused on native bees, because there is limited information on their exposure to pesticides. In fact, little is known about how toxic these pesticides are to native bee species at the levels detected in the environment. This study did not look at pesticide exposure to honey bees.

"We found that the presence and proximity of nearby agricultural fields was an important factor resulting in the exposure of native bees to pesticides," said USGS scientist Michelle Hladik, the report's lead author. "Pesticides were detected in the bees caught in grasslands with no known direct pesticide applications."

Although conservation efforts have been shown by other investigators to benefit pollinators, this study raises questions about the potential for unintended pesticide exposures where various land uses overlap or are in proximity to one another.

The research consisted of collecting native bees from cultivated agricultural fields and grasslands in northeastern Colorado, then processing the composite bee samples to test for 122 different pesticides, as well as 14 chemicals formed by the breakdown of pesticides. Scientists tested for the presence of pesticides both in and on the bees.

The most common pesticide detected was the neonicotinoid insecticide thiamethoxam, which was found in 46 percent of the composite bee samples. Thiamethoxam is used as a seed coating on a variety of different crops. Pesticides were not found in all bee samples, with 15 of the 54 total samples testing negative for the 122 chemicals examined.

Although this study did not investigate the effects of pesticide exposures to native bees, previous toxicological studies have shown that the chemicals do not have to kill the bees to have an adverse effect at the levels of exposure documented here. For example, neonicotinoids can cause a reduction in population densities and reproductive success, and impair the bees' ability to forage. Follow-up research is now being designed to further investigate adverse effects at these exposure levels.

There are about 4,000 native species of bees in the United States. They pollinate native plants like cherries, blueberries and cranberries, and were here long before European honeybees were brought to the country by settlers. In addition, many native bees are quite efficient crop pollinators, a role that may become more crucially important if honey bees continue to decline.

This paper is a preliminary, field-based reconnaissance study that provides critical information necessary to design more focused research on exposure, uptake and accumulation of pesticides relative to land-use, agricultural practices and pollinator conservation efforts on the landscape. Another USGS study published in August discovered neonicotinoids in a little more than half of both urban and agricultural streams sampled across the United States and Puerto Rico.

"This foundational study is needed to prioritize and design new environmental exposure experiments on the potential for adverse impacts to terrestrial organisms," said Mike Focazio, program coordinator for the USGS Toxic Substances Hydrology Program. "This and other USGS research is helping support the overall goals of the White House Strategy to Promote the Health of Honey Bees and Other Pollinators by helping us understand whether these pesticides, particularly at low levels, pose a risk for pollinators."

More information can be found on this paper at http://toxics.usgs.gov/highlights/2015-11-04-pesticides_bees.html. USGS research on the occurrence, transport and fate of pesticides can be found with the USGS Toxic Substance Hydrology Program webpage or the USGS Pesticide Fate Research project in California.

American Bee Journal Extra: <http://us1.campaign-archive1.com/?u=5fd2b1aa990e63193af2a573d&id=0f093b06bd&e=b65aa72a10>

NATIONAL HONEY REPORT

Number XXXV - # 9 Issued Monthly October 21, 2015

TENNESSEE: September was a dry month for most of Tennessee. Goldenrod and Asters were the main sources of nectar or pollen this month. Beekeepers anticipate that they are going to have a decent fall nectar flow. Tennessee had no significant colony losses during August.

September and October Unit Honey Prices by Month

Retail \$6.63 – \$6.69 avg price per pound for

Data from Bee Culture magazine used by permission. Based upon average price across all reporting regions. Assumes various sizes sold at the same rate.

Commercial honeybees have teetered on the brink of collapse for nearly a decade. Scientists are now looking to forest mushrooms as a possible remedy. Photo by Ken Christensen/EarthFix/KCTS 9

Honeybees need a healthy diet of pollen, nectar and water. But at a bee laboratory in eastern Washington, Steve Sheppard fills their feeding tubes with murky brown liquid from the forest. His bees are getting a healthy dose of mushroom juice. "If this does what we hope, it will be truly revolutionary," said Sheppard, who heads the have teetered on the brink of collapse for nearly a decade. . . . beekeepers say the greatest obstacle to staying in business each year is a virus-carrying parasite called the varroa mite. Sheppard has spent decades breeding western honeybees to better tolerate the mite and its viruses. But he hasn't had much success, he said. Varroa mites have devastated U.S. beehives since the late 1980s, when they arrived here from Asia. In 1996, half of colonies east of the Mississippi River died due to mite infestations. . . . Honeybees that emerge from the infected hives typically carry illnesses, like a virus that results in deformed wings that prevent bees from flying. If beekeepers don't intervene, the varroa mite can destroy a colony in less than two years. Meanwhile, the pest reproduces so rapidly it builds resistance to chemical pesticides more quickly than solutions can be invented, Sheppard said. That's why he decided to try an unconventional approach last year, after local mushroom expert Paul Stamets called him with an idea to help arm the honeybee in its fight against the mite. Learning the way of the bee "We've gone to the moon, we've gone to Mars, but we don't know the way of the bee?" asked Stamets, who owns the medicinal mushroom company Fungi Perfecti near Olympia, Washington.

The self-taught mycologist said he noticed a relationship between honeybees and mushrooms when he observed bees sipping on sugar-rich fungal roots growing in his backyard. "I looked down, and they were sucking on my mycelium," he said. Now he thinks he knows why. In recent years, his research has shown that rare fungi found in the old-growth forests of western Washington can help fight other viruses, including tuberculosis, smallpox and bird flu. He wondered if the honeybee would see similar health benefits from wood-rotting mushrooms. "Bees have immune systems just like we do," he said. "These mushrooms are like miniature pharmaceutical factories." Stamets and Sheppard are feeding liquid extracts of those forest mushrooms to mite-infected honeybees. Initial findings suggest that five species of the wood-rotting fungi can reduce the honeybees' viruses and increase their lifespans. In addition, the scientists are trying to fight honeybee viruses by taking aim at the varroa mite itself. Insect-killing fungi have been used as an alternative to synthetic chemical pesticides for years, and previous studies show that one type of entomopathogenic fungus can weaken varroa mites in beehives.

Killing parasites without harming bees Paul Stamets thinks his version of the fungus will be more effective. So far, the results of the experiments in Sheppard's lab look promising. "The product seems to be killing mites without harming bees," Sheppard said. This fall, the scientists plan to expand both experiments by partnering with commercial beekeepers like Eric Olson, who runs the largest commercial beekeeping operation in Washington. Olson said two-thirds of his beehives died five years ago because of a varroa mite infestation. After several years successfully controlling the pest, he arrived this year in California for almond pollination season, and nearly half of his bees had died during the winter.

He spent \$770,000 to buy replacement hives, he said. "I was lucky that I had the cash and the connections to recover from that," he said. Olson recently donated about \$50,000 to Sheppard's department to help find a solution to the mite. Looking at the bees in one of his hives, he said, "I'm really concerned about whether these little girls will survive."

Recipe Cinnamon Honey Butter

- 1 cup (2 sticks) salted butter, room temperature
- 1 cup powdered sugar
- 1 cup honey
- 2 teaspoons cinnamon

Use the whisk attachment on your mixer to beat the butter for 1 minute. (You can do this with regular beaters of course. Or a wooden spoon.)

1. Add the powdered sugar, honey, and cinnamon. Beat on low until the powdered sugar is incorporated, then beat on medium for a bit.
2. Scrape the sides and bottom, then beat again until it is smooth.
3. This recipe will fit into 6 4-ounce mason jars, or 3 half-pint mason jars.
4. Store this however you normally store butter. Put it in the fridge if you plan on keeping it for a while, or on the counter if it will be eaten within a couple days. Either way it should be served room temperature.

Notes

This will keep in the fridge for as long as butter keeps in the fridge, at least 5-6 months.