



BEE NEWS & VIEWS

The Mississippi Beekeepers Association Newsletter

JEFF HARRIS, Editor
Phone: 662.769.8899

July-August 2015

MBA Convention is November 6-7, 2015

The MBA annual convention be held at the Advanced Technology Center of the Jones County Junior College in Ellisville, MS. Please see the information packet that accompanies this abbreviated newsletter for details and registration forms. The newsletter was reduced in size to save on postage costs for this mail out.

Argentine Ants May Carry Viruses to Honey Bees

By Susan Milius

The first survey of viruses in the globally invasive Argentine ant brings both potentially bad and good news.

One of two viruses identified to be actively reproducing in Argentine ants (*Linepithema humile*) is a known threat to honeybees, says Philip Lester, a community ecologist at Victoria University of Wellington in New Zealand. Called deformed wing virus, it might use ants as a reservoir, spreading to bees visiting the same flowers or getting raided for honey by the sweets-loving ants, Lester and his colleagues suggest September 9 in *Biology Letters*.



Argentine Ants May Transfer DWV to Honey Bees

The other virus is new to science. Christened LHUV-1 (pronounced "love-one"), it belongs to the dicistrovirus family, which includes many insect pathogens. Whether LHUV-1 actually sickens

Argentine ants or any other creature remains to be seen. If it does, Lester says, the virus might prove useful to check the spread of the ants. That's a distant dream, he cautions. For now, research is at the stage of "Wow, there's viruses!" he says.

Source: *Science News*, September 9, 2015

Call off the bee-pocalypse: U.S. honeybee colonies hit a 20-year high

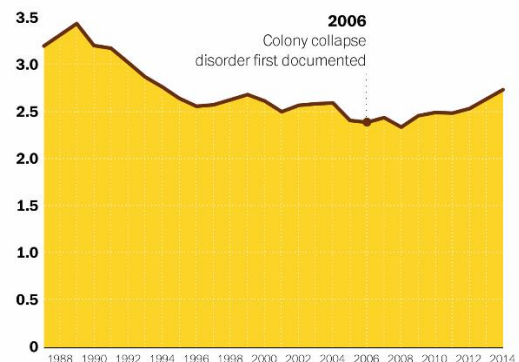
By Christopher Ingraham

You've heard the news about honeybees. "Beepocalypse," they've called it. Beemageddon. America's honeybees are dying, putting honey production and \$15 billion worth of pollinated food crops in jeopardy.

The situation has become so dire that earlier this year the White House put forth the first National Strategy to Promote the Health of Honey Bees and Other Pollinators, a 64-page policy framework for saving the nation's bees, butterflies and other pollinating animals.

Bees!

Millions of honey-producing bee colonies in the U.S., 1987 - 2014



WAP0.ST/WONKBLOG

Source: USDA Honey production surveys

The trouble all began in 2006 or so, when beekeepers first began noticing mysterious die-offs. It was soon

christened "colony collapse disorder," and has been responsible for the loss of 20 to 40 percent of managed honeybee colonies each winter over the past decade.

The math says that if you lose 30 percent of your bee colonies every year for a few years, you rapidly end up with close to 0 colonies left. But get a load of this data on the number of active bee colonies in the U.S. since 1987. Pay particular attention to the period after 2006, when CCD was first documented.

As you can see, the number of honeybee colonies has actually *risen* since 2006, from 2.4 million to 2.7 million in 2014, according to data tracked by the USDA. The 2014 numbers, which came out earlier this year, show that the number of managed colonies -- that is, commercial honey-producing bee colonies managed by human beekeepers -- is now the highest it's been in 20 years.

So if CCD is wiping out close to a third of all honeybee colonies a year, how are their numbers rising? One word: Beekeepers.

A 2012 working paper by Randal R. Tucker and Walter N. Thurman, a pair of agricultural economists, explains that seasonal die-offs have always been a part of beekeeping: they report that before CCD, American beekeepers would typically lose 14 percent of their colonies a year, on average.

So beekeepers have devised two main ways to replenish their stock. The first method involves splitting one healthy colony into two separate colonies: put half the bees into a new beehive, order them a new queen online (retail price: \$25 or so), and voila: two healthy hives. The other method involves simply buying a bunch of bees to replace the ones you lost. You can buy 3 pounds of "packaged" bees, plus a queen, for about \$100 or so.

Beekeepers have been doing this sort of thing since the advent of commercial beekeeping. When CCD came along, it roughly doubled the usual annual rate of bee die-offs. But this doesn't mean that bees are going extinct, just that beekeepers need to work a little harder to keep production up.

The price of some of that extra work will get passed on to the consumer. The average retail price of honey has roughly doubled since 2006, for instance. And Kim Kaplan, a researcher with the USDA, points out that pollination fees -- the amount beekeepers charge to cart their bees around to farms and pollinate fruit and nut trees -- has approximately doubled over the same period.

"It's not the honey bees that are in danger of going extinct," Kaplan wrote in an email, "it is the beekeepers providing pollination services because of the growing economic and management pressures. The alternative is that pollination contracts per colony have to continue to climb to



The perfect capitalists: industrious, efficient, and single-minded in their pursuit of success (Joe DeLuca/Flickr).

make it economically sustainable for beekeepers to stay in business and provide pollination to the country's fruit, vegetable, nut and berry crops." We have also been importing more honey from overseas lately.

But rising prices for fruit and nuts hardly constitute the "beepocalypse" that we've all been worried about. Tucker and Thurman, the economists, call this a victory for the free market: "Not only was there not a failure of bee-related markets," they conclude in their paper, "but they adapted quickly and effectively to the changes induced by the appearance of Colony Collapse Disorder."

Source: *The Washington Post*, July 23, 2015

This newsletter is brought to you by:

MSU Department of
Biochemistry, Molecular
Biology, Entomology and
Plant Pathology



What Makes a Queen Bee? One Special Protein, Apparently

By Valerie Ross

What's the News: It's long been known that a female bee's place in the social order—whether she becomes a worker or a queen—depends not on her genes, but on whether she eats royal jelly. A study published in *Nature* found that royalactin, a protein found in royal jelly, is responsible for many of the physical differences that distinguish queens from the hoi polloi of the hive—and, surprisingly, that royalactin can even cause fruit flies to develop queen bee-like traits. This finding also shines light on how, at a cellular level, royal jelly turns bees into queens.



Queen larvae floating in Royal Jelly

How the Heck:

- The researcher, Masaki Kamakura, stored royal jelly at just over 100 degrees Fahrenheit, for one, two, or three weeks, or thirty days, then fed it to bee larvae. The bees raised on royal jelly that had been heated for 30 days developed into regular worker bees, suggesting that whatever ingredient of royal jelly turns bees into queens broke down shortly before those 30 days were up. Judging by how long different compounds in royal jelly last, this pointed to royalactin as the key ingredient.
- When the researcher fed bees on purified royalactin—along with some necessary nutrients—they grew into queens, just like royal jelly-fed bees did.
- Next, he raised houseflies on royal jelly or the royalactin-based diet. Like queen bees, they were bigger, more fertile, and longer lived than their commoner counterparts.

- Mutant flies lacking the protein EGFR, which recognizes certain growth factor, didn't develop regal features when fed royalactin, suggesting a possible mechanism by which royalactin works.

What's the Context?

- All honeybees eat royal jelly for the first three days after the hatch, but only the queens-to-be continue to eat it, while other bees switch to a diet based on honey.
- Decades ago, scientists suggested the queen-maker in this royal ambrosia might be a hormone or neurohormone, rather than a protein, but didn't find strong evidence to support those ideas.
- Some people try to tap into the appearance-altering properties of royal jelly—as yet unproven in our species—using dietary supplements and anti-aging face creams

Not So Fast:

- While entomologist Gro Amdam called the study “awesome,” simply adding a caveat, in speaking to The Great Beyond, *Nature's* news blog, against “falling in love with a single explanation,” not all scientists think royalactin is the key to queenliness. “There are dozens of potentially important components in royal jelly and giving a special rank to one of them is misleading,” biologist Ryszard Maleszka told the blog.

Reference: Masaki Kamakura. “Royalactin induces queen differentiation in honeybees.” *Nature* online, April 24, 2011. DOI: 10.1038/nature10093
Image: Wikimedia Commons / Waugsberg

Source: *Discover*, April 26, 2015

Smoker Safety

By Jeff Harris

I received a twitter feed today that showed a bee yard in Humphreys County that was burned by a roadside fire. The beekeeper apparently lost at least 15-20 colonies. I do not know the cause of the fire, but seeing the picture reminded me of a fire that I had caused by my careless dumping of my smoker fuel

MBA Officers and At-Large Directors 2015

President – Austin Smith (601.408.5465); **Vice President** – Johnny Thompson (601.656.5701); **Treasurer** – Stan Yeagley (601.924.2582); **Secretary** – Cheryl Yeagley (601.924.2582); **At-Large Director** – Harvey Powell, Jr. (203.565.7547); **At-Large Director** – Milton Henderson (601.763.6687); and **At-Large Director** – John R. Tullos (601.782.9362)

onto the ground. I usually carried water with me for soaking the smoldering smoker fuel when it was dumped, but on this particular day, I was out of water. I had dumped the fuel onto the ground before discovering the lack of water. I ground the fuel into the dirt with the heel of my boots, and I left the bee yard.

I returned the next week to find that I had burned 3-5 acres of the neighboring pasture and the grass within the bee yard. Fortunately, the fire did not burn hot, and none of the 30 colonies of bees were harmed. I was lucky.

Some friends of mine were not so lucky with a smoker fire that started in the bed of their pick-up truck. As I often had done, the beekeepers carried a lit smoker in their truck bed as they moved from apiary to apiary. They stopped for lunch, and during this period, the plastic liner of the truck bed and some loose pine straw in the bed of the truck had ignited. A co-worker discovered the fire and put it out, but not before significant damage to the truck had occurred.



We now carry our lit smokers in capped aluminum garbage cans (5 gallon), and we try to keep the truck bed clean of pine straw or other fuels that could ignite. We extinguish all fuel with water if we dump it onto the ground, but since we began carrying the smokers in the garbage can, it is actually safer just to let it burn out inside the can.

Upcoming Events

Bug Fest at the Crosby Arboretum in Picayune, MS on *September 18-19, 2015*. This is a wonderful two-day event that celebrates insects. There will be a separate display for honey bees on one of the nature trails. For more information visit <http://crosbyarboretum.msstate.edu/september-calendar>.

Queen Rearing Workshop at the Clay Lyle Building on the MSU Campus in Starkville, MS on *September 19, 2015 at 8:00 AM – noon*. The class will be team taught by Audrey Sheridan and Heather Blackwell. Please call Audrey to pre-register at 662.325.2975.

Beginning Beekeeping Series at the Monroe County Extension Office in Aberdeen, MS (517 HWY 145 N., Suite 1). The next meeting, which is the second in the series, will be *September 22, 2015*, and the third meeting will be on *October 20, 2015*. Each meeting begins at *6:30 PM*. Space is limited, so please call 662.369.4951 to pre-register for each session.

IPM Workshop at the USDA Lab in Poplarville, MS on *September 26, 2015*. This is an all-day event and will feature research with honey bees that is being conducted at the lab, and disease and pest management related to *Varroa* mites and Small Hive Beetles. Pre-registration (\$25.00) is required because space is limited. Please call Dr. Judy Breland at 601.928.5286 to pre-register.

Buy, Sell or Need

For Sale: 10 hives consisting of 1 or 2, 10 frame deeps, 1 honey super, screen bottom board with oil pan, aluminum insulated top. Bees were treated with Hop Guard in March, 2015; \$365. J & E Bees holtoneg@att.net; 601-859-3935

Need a Beekeeper: Land available for a beekeeper to place hives near Dundee, MS (Tunica area); please call Billy Pegram 662-910-0750