

DISSECTING CLAIMS OF POLLINATOR COLLAPSE



Genetic Literacy Project

SCIENCE NOT IDEOLOGY

Jon Entine – Author
Editing by Kurt Jones


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SCIENCE NOT IDEOLOGY

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Global consensus finds neonicotinoids not driving honeybee health problems—Why is

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Global consensus finds neonicotinoids not driving honeybee health problems—Why is Europe so determined to ban them?

Jon Entine | Genetic Literacy Project | April 26, 2018



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Bees not dying; Europe should lift neonics ban

Owen Patterson | Wall Street Journal | July 27, 2015



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Jon Entine | Published in Huffington Post | Dec 6, 2017



Neonics ban tied to corrupted bee research by scientists at EU's ethically-challenged IUCN?

David Zaruk | Genetic Literacy Project | December 5, 2014



Neonicotinoid insecticide has 'no adverse effects' on honeybee colony health, meta-analysis finds

Gladys Stephenson, Keith Solomon | Journal of Toxicology and Environmental Health | November 21, 2017



Part II: Bee Deaths And CCD - Flawed Chensheng Lu Harvard Studies Endanger Bees

Jon Entine | Published in Science 2.0 | Nov 24, 2014



Neonicotinoid seed treatments: Effective crop protectants—or unnecessary, with potential collateral damage to bees?

Paul McDivitt | Genetic Literacy Project | October 3, 2017



Part I: Bee Deaths Mystery Solved? Neonicotinoids (Neonics) May Actually Help Bee Health

Jon Entine | Published in Science 2.0 | Nov 20, 2014

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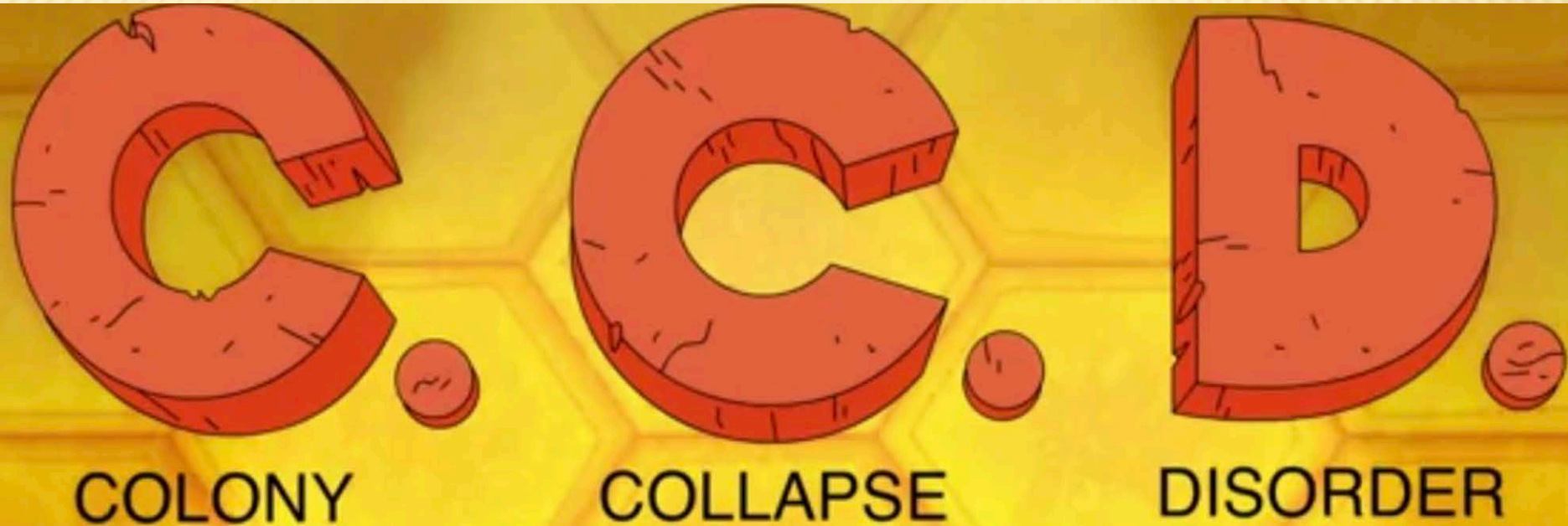
SCIENCE NOT IDEOLOGY

Honeybee population isn't 'crashing' and seed pesticides are not driving health problems—and here's why

[Jon Entine](#) | [Genetic Literacy Project](#) | April 17, 2018



2006—2012



In CCD, honeybee colonies inexplicably lose all of their worker bees. CCD resulted in a loss of 50-90% of colonies in beekeeping operations, mostly in California.

CCD: Activist Views of Potential Causes



CCD: Activist Views of Potential Causes

**Genetically modified crops
have killed millions of bees.**

Save our pollinators.

Boycott GMOs.



Stop the Mass Death of Bees



**Support the Campaign for a total ban
of Neonicotinoid Pesticides**

www.CBGnetwork.org

It's no longer a mystery.

We know what's killing the bees.

They're being

poisoned

by

**neonicotinoid
insecticides**



**Tell the EPA to Ban Neonicotinoid Pesticides
Before They Devastate the U. S. Bee Population**

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AUGUST 2013

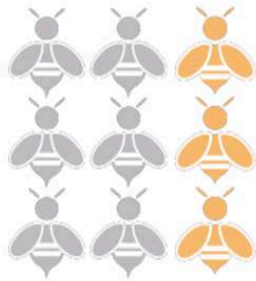


THE BEE-POCALYPSE

- At the time, there were thousands of headlines in mainstream media on the coming “Bee-pocalypse”:
- A simple, alarming narrative:
- Neonics are causing dramatic declines in bee populations around world...
- Bees are in imminent danger of going extinct...
- Bees are responsible for 1/3 of everything we eat...
- The world may soon be starving and neonics are to blame.
- **BAN NEONICS NOW!**

CCD AND BEE HEALTH: WHAT DOES THE SCIENCE SAY

The Challenge



APPROX. **29%**

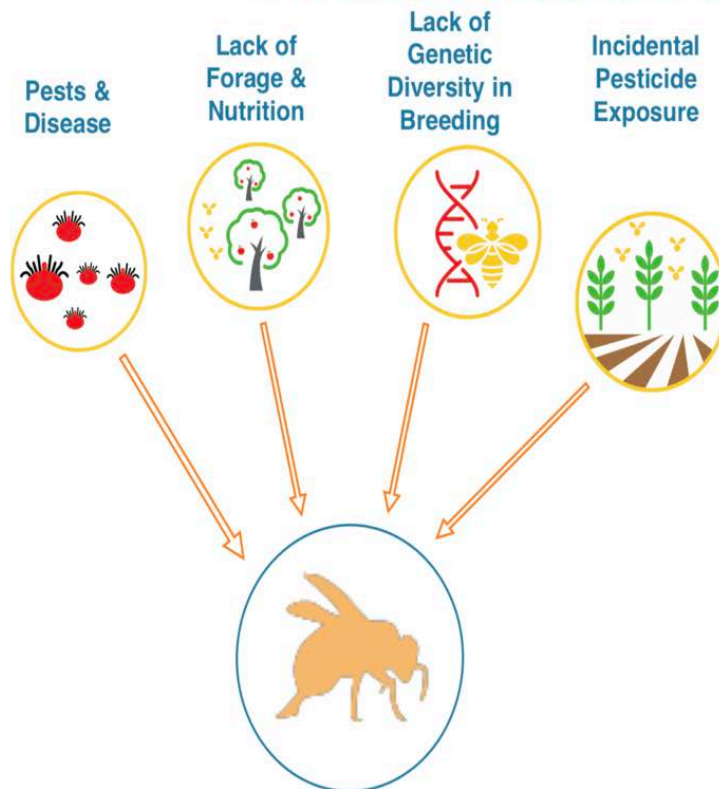
Of honey bee population lost each winter, compared to 10-15% historically

Agriculture, healthy lifestyles, and worldwide food security **depend on honey bee health**. U.S. overwintering losses for managed honey bees between 2006 and 2015 ranged from approximately 23-36%, compared to a historical rate of overwintering losses of 10-15%.*

*Source: Survey data generated by USDA

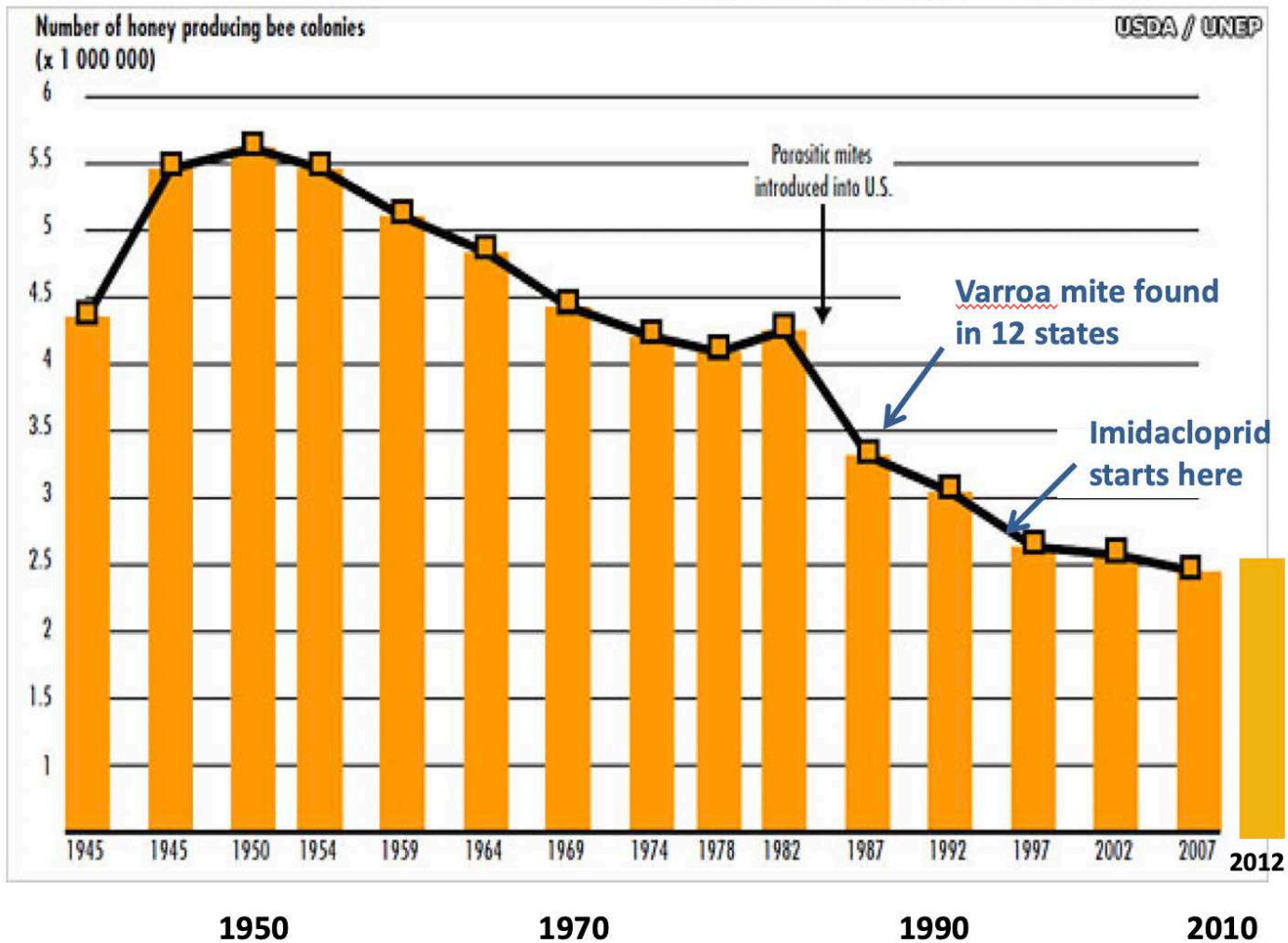
Stress Factors

Impacts on bee health have been linked to a variety of factors, including those influenced by the activities associated with both **beekeeping and crop production**.



CCD, PESTICIDES AND BEE DEATHS: WHAT DOES THE SCIENCE SAY

Randy Oliver, Scientific Beekeeping



So what is the actual cause of CCD?

Short-Answer: We don't know

- There is no straight forward answer, most likely cause is a combination of a some or all of the described potential causes
 - Combinations of stress, pesticides and parasites weaken the immune system and hive
 - The weakened individuals and hive are more likely to become infected with other pathogens that are always present but can be held off by health bees
 - During the winter when the hive is less active and more vulnerable the colony collapses and the bees die or disappear.

USDA ON BEE HEALTH ISSUES

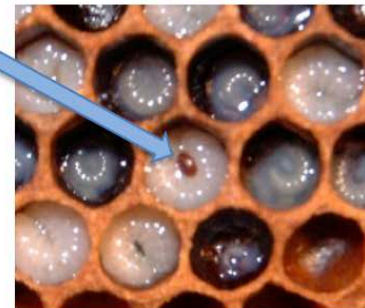
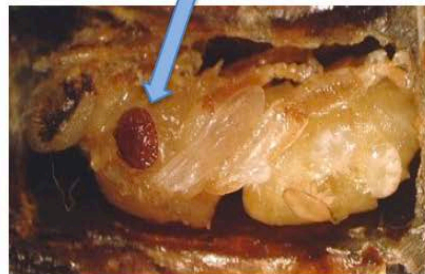
By far the number one problem is the *Varroa destructor* mite, which the agency calls “the single most detrimental pest of honey bees.”

Varroa mite is the chief menace

Large mite sucks bee blood
Circulates bee viruses



Mite feeding on adult bee



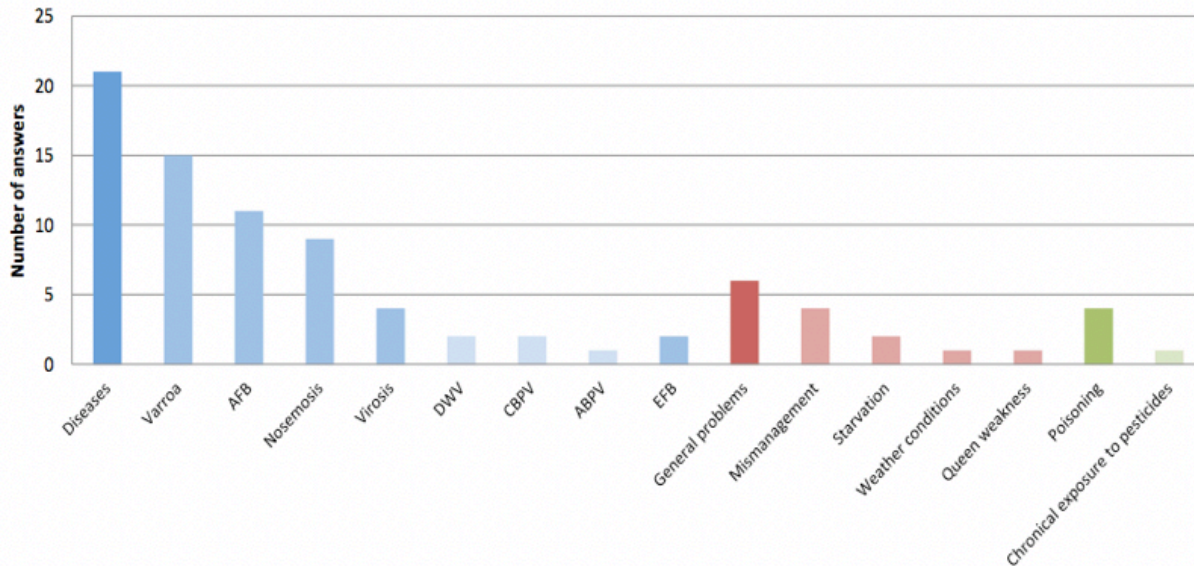
Mite feeding on immature bees (brood)

European Commission report on Honeybee Health 2013



Main causes of colony mortality reported by the laboratories

Source: EURL

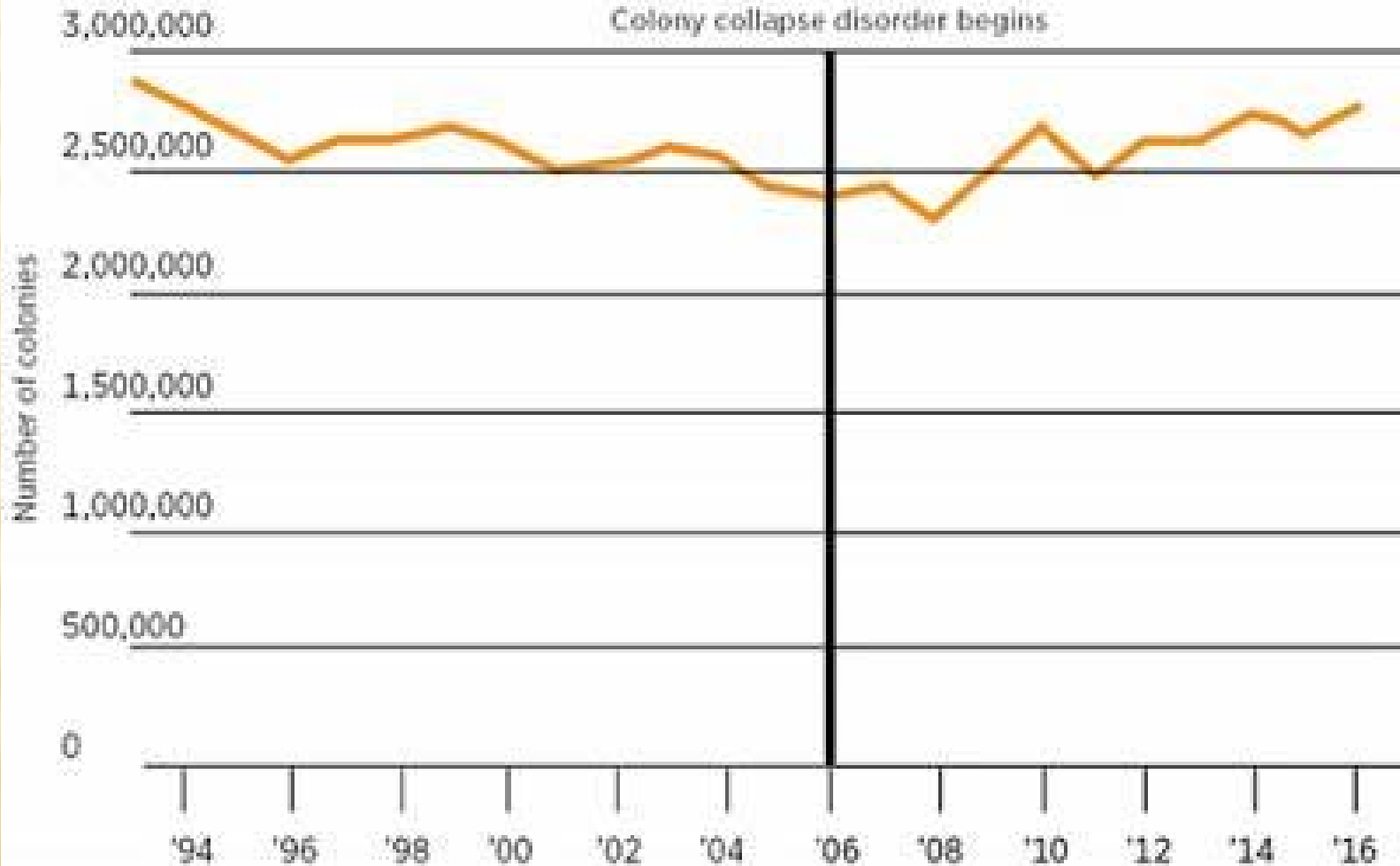


Health and Consumers

- Diseases outweigh chronic pesticides by 20 to 1.
- Neonics would be a tiny fraction of that.
- In the U.S., some **150 different chemical residues have been found in pollen...**neonics often among the lowest.
- More than **30 mites, viruses, bacteria, fungi** and other pathogens afflict bee colonies in the EU.

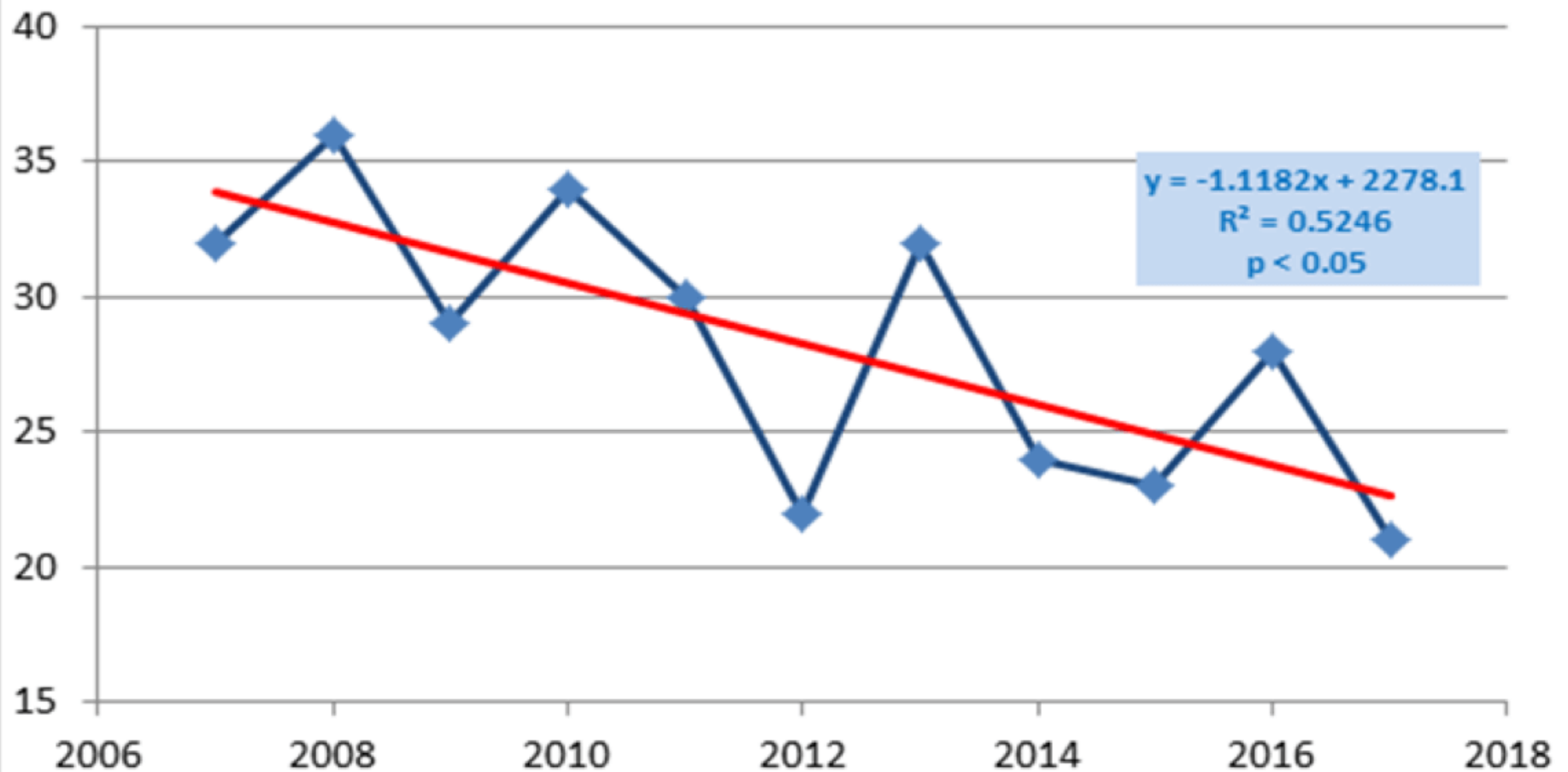
BEE HIVE TRENDS

DESPITE THE PANIC, THERE HASN'T BEEN A DECLINE IN U.S. HONEYBEE COLONIES

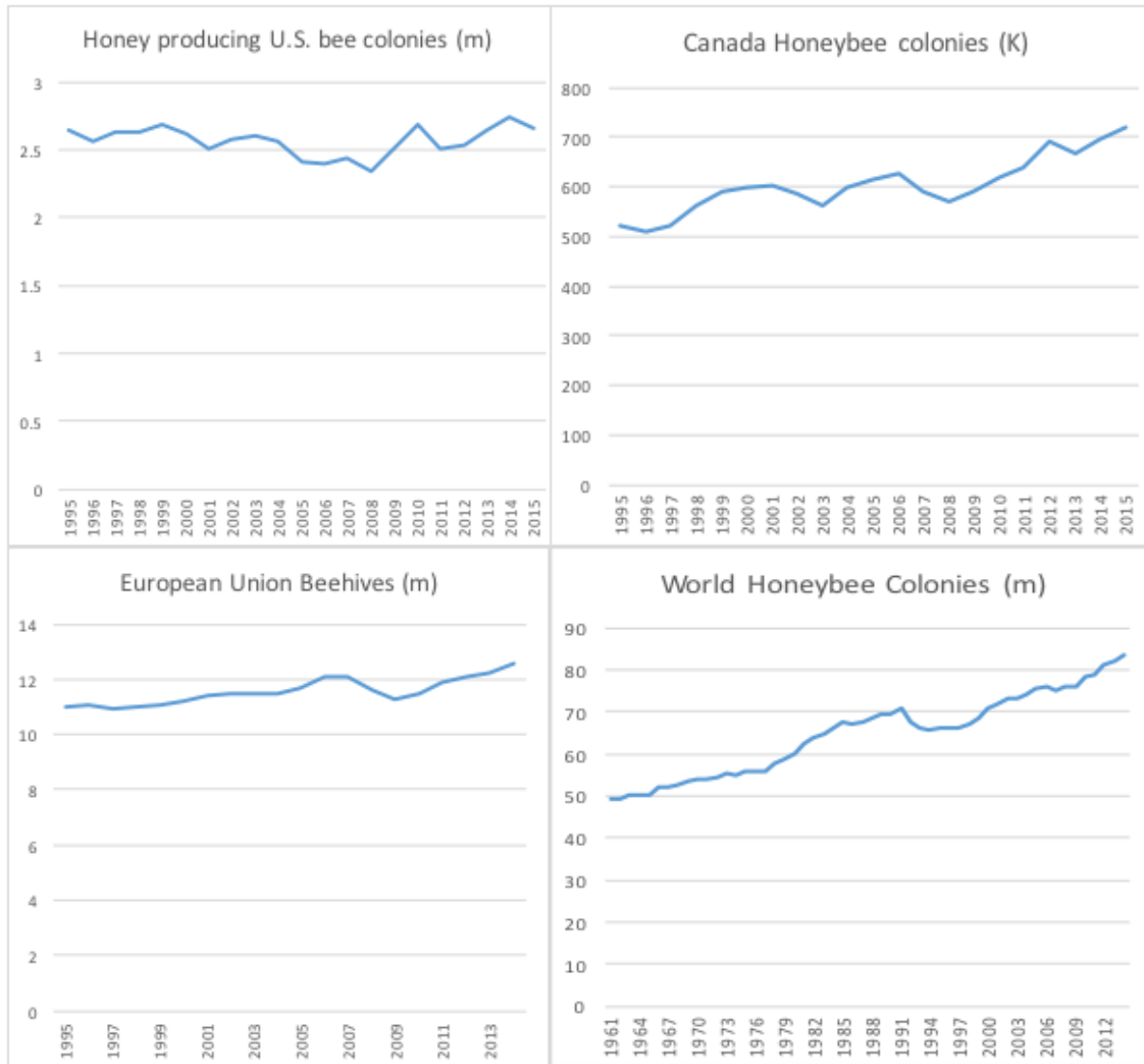


Beekeeper Self-Reported Overwintering Loss (%) of US Honey Bee Colonies

(Source: Bee Informed Partnership)

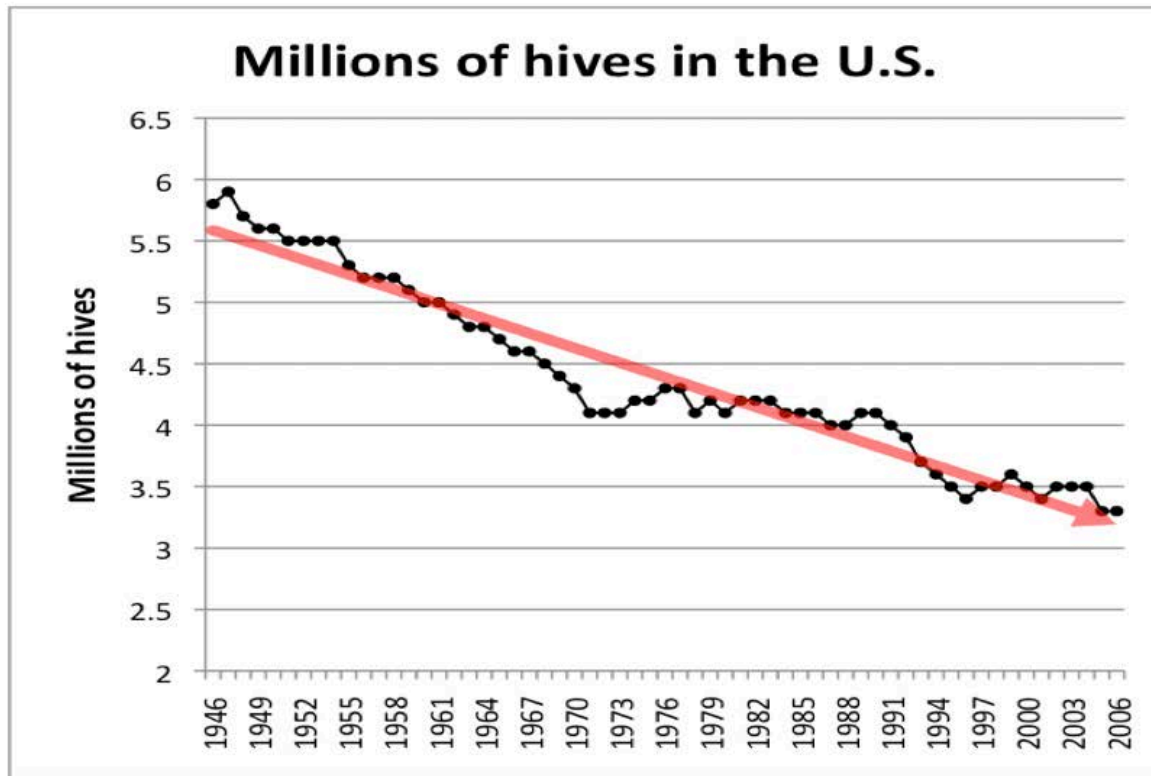


BEE HIVE TRENDS GLOBALLY



THIS IS WHAT YOU SEE ON AN ACTIVIST SITE

Global trends: honeybee declines



WHAT ABOUT ALL THOSE STUDIES THAT IMPLICATE NEONICS?

- ✘ No question that chemicals—mostly miticides to control varroa but also pesticides—weaken bees.
- ✘ Australia and Western Canada, where neonics are extensively used, has seen little to no increased incidences of bee deaths.
- ✘ Almost all the studies that implicate neonics are lab studies which 'feed' high amounts of neonics in soup-like dishes to bees. In the real world, bees encounter neonics through seed coatings.
- ✘ Field studies overwhelmingly suggest that neonics are not a significant driver of bee health issues.

ANTI-NEONIC JUNK SCIENCE REPORTING

Bulletin of Insectology 67 (1): 125-130, 2014
ISSN 1721-8861

Sub-lethal exposure to neonicotinoids impaired honey bees winterization before proceeding to colony collapse disorder

Chensheng LU¹, Kenneth M. WARCHOL², Richard A. CALLAHAN³

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²*Worcester County Beekeepers Association, Northbridge, MA, USA*

³*Worcester County Beekeepers Association, Holden, MA, USA*

Abstract

Honey bee (*Apis mellifera* L.) colony collapse disorder (CCD) that appeared in 2005/2006 still lingers in many parts of the world. Here we show that sub-lethal exposure of neonicotinoids, imidacloprid or clothianidin, affected the winterization of healthy colonies that subsequently leads to CCD. We found honey bees in both control and neonicotinoid-treated groups progressed almost identically through the summer and fall seasons and observed no acute morbidity or mortality in either group until the end of winter. Bees from six of the twelve neonicotinoid-treated colonies had abandoned their hives, and were eventually dead with symptoms resembling CCD. However, we observed a complete opposite phenomenon in the control colonies in which instead of abandonment, they were re-populated quickly with new emerging bees. Only one of the six control colonies was lost due to *Nosema*-like infection. The observations from this study may help to elucidate the mechanisms by which sub-lethal neonicotinoids exposure caused honey bees to vanish from their hives.

Chensheng Lu



ANTI-NEONIC JUNK SCIENCE REPORTING

Bulletin of Insectology 67 (1): 125-130, 2014



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Study strengthens link between neonicotinoids and collapse of honey bee colonies





ALTERNATIVE NEWS

New Harvard Study Proves Why The Bees Are All Disappearing

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Published 4 years ago on May 15, 2014
By Arjun Walia



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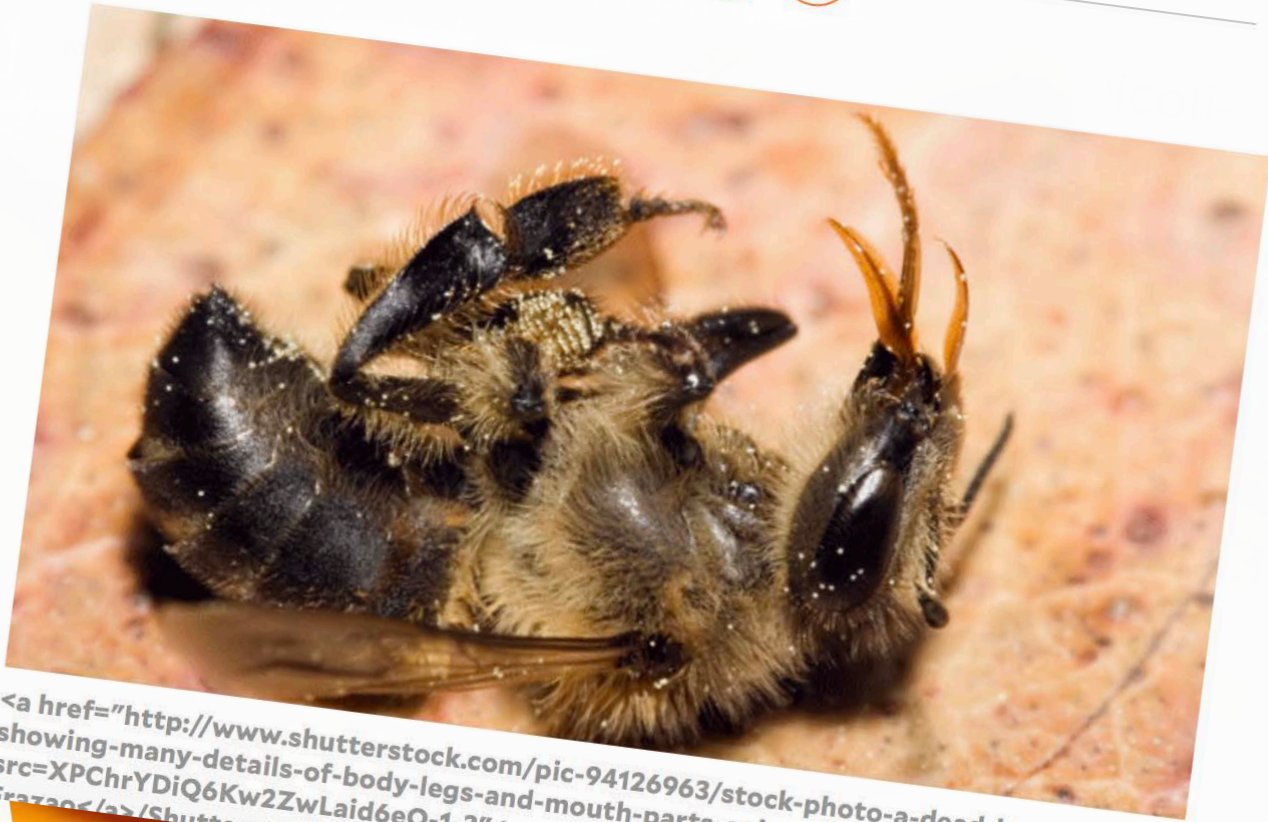


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Did Scientists Just Solve the Bee Collapse Mystery?

TOM PHILPOTT MAY 20, 2014 10:00 AM



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Honeybees abandoning hives and dying due to insecticide use, research finds

Harvard study shows neonicotinoids are devastating colonies by triggering colony collapse disorder

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▲ Scientists found bees from six of the 12 neonicotinoid-treated colonies had left their hives and died. Photograph: Rex Features

Research
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BEE EXPERTS POUNCE



Hannah Nordhaus

@hannahnordhaus



This new study linking neonics and bees is from the author of earlier widely discredited study Harvard study.

bit.ly/1I3vVlp

11:22 AM - 12 May 2014

2 RETWEETS



Brian Ames

@amesfarmhoney



[@eatsustainable](#) [@FoodNavigator](#) unethical Harvard study on bees uses unrealistic dose of neonics & misleads public bv.ms/1IzUX3L

9:06 PM - 14 May 2014

[Bad Science Doesn't Help Bees](#)

A new study blaming pesticides for the declining health of bees distracts attention from the need to limit more of the real causes of bee deaths.

BV Bloomberg View @BV



4 RETWEETS 2 FAVORITES





Jon Entine, Contributor

Founder and executive director of the Science Literacy Project, which oversees the Genetic Literacy Project and the Epigenetics Literacy Project

Bee Experts Dismantle Touted ‘Harvard’ Neonics-Colony Collapse Disorder Study As ‘Activist Science’

Although public opinion has coalesced around the belief that the bee death mystery is settled, the vast majority of scientists who study bees for a living disagree — vehemently.

12/15/2014 04:35 pm ET | Updated Dec 06, 2017

Chensheng Lu was in his element last month at a [speech](#) before a green group at Harvard Law School. The School of Public Health professor was lecturing on his favorite topic—his only subject these days, as it has become his obsession: why he believes bees around the world are in crisis.

Lu is convinced, unequivocally, that a popular pesticide hailed by many scientists as a less toxic replacement for farm chemicals proven to be far more dangerous to humans and the environment is actually a killer in its own right.

“We demonstrated that neonicotinoids are highly likely to be responsible for triggering Colony Collapse Disorder in bee





“It’s hard to imagine anyone even reviewed this paper.”

—Randy Oliver, Scientific Beekeeping blog

“Lu’s work is clearly biased, sensational. It is horrendously incompetent. Dr. Lu inexplicably increased the dosages for the last nine weeks of feeding-by 40 times. This is just hogwash.

We will all pay a price for bad research.”

—Richard Cowles, Connecticut state entomologist

“It’s surprising those colonies lasted so long given the stratospheric quantities of insecticide [Lu] pumped into them for 13 weeks. Lu has convincingly demonstrated, again, as in his previous study ... that a high dose of an insecticide will kill an insect. Has anyone learned anything from all this? Looks like junk science at its worst.”

—Jonathan Getty, Irish beekeeper on Bee-L Chat, a discussion forum for bee experts

“It is not a paper that shows that neonics cause problems simply because it was poorly replicated with high dosages used.”

—Jeffrey Pettis, entomologist at USDA’s Beltsville’s Bee Laboratory

“I’m no fan of pesticides and they are overused in agriculture, but you won’t find any confirmation of that in this study. This is a really complex issue with no quick and easy solutions. I can’t imagine a situation in which I would cite the findings of this paper as rigorous and reliable. This is just not good science.”

—May Berenbaum, University of Illinois entomologist, chair of the National Academy of Sciences study on the health of pollinators

CHALLENGES IN COMMUNICATING ABOUT FARMING, BIOTECHNOLOGY AND CHEMICALS

- ◎ Skepticism of Government**
- ◎ Anti-Corporatism**
- ◎ Scientifically Illiterate Media**
- ◎ Social Media Echo Chamber**
- ◎ Polarized Political Environment**

SIERRA CLUB HYPOCRISY

Sierra Club. May 2018: "Honeybees are at no risk of dying off. While diseases, parasites and other threats are certainly real problems for beekeepers, the total number of managed honeybees worldwide has risen 45% over the last half century.

Sierra Club Fund Raising Flyer, 2018



BUT: HONEYBEE AND WILD BUMBLE BEE HEALTH PROBLEMS ARE REAL

