What’s killing the bees
(a beekeeper’s letter to the Editor of the Washington Post)

The Washington Post’s July 6 Economy & Business article “Tough times continue for honey bee colonies” said a University of Maryland entomologist claimed that “the biggest threat is varroa mites” in regard to honey bee deaths.

This claim is based on a survey of beekeepers’ opinions, it is not based on accepted science.

Beekeepers look at their failed hives and try to guess what killed their bees. Laboratory tests for pesticides are rarely done, as each costs about $400 per hive, and pesticides are difficult to detect. The Bee Informed Partnership associated with University of Maryland is funded by: Bayer CropScience, Syngenta and CropLife America through the Honey Bee Health Coalition.

An entomologist from U-Md. has previously forgotten to disclose conflicts of interest when publishing.

Bees are a subset of the flying insects that are in shocking decline worldwide. That decline can’t be blamed entirely on mites: They harm only honeybees. There is overwhelming scientific evidence that pesticides are harming bees (as well as flying insects in general), which supports what the beekeepers have said and is consistent with reports of massive insect declines.

Bees can fly miles from their hives to retrieve nectar and pollen. If they are killed by a lethal dose of pesticide in a farmer’s field or in someone’s garden, they will not return to the hive. Such a pesticide kill is indistinguishable from colony collapse disorder.

Scientists have shown that even if bees survive pesticide exposure, they may die young, have a compromised immune system or lose the ability to navigate effectively.

Pesticide exposure leads to exactly what beekeepers see as their hives fail: a dwindling population that can’t support the colony.
For the world’s most widely used class of insecticides, systemics, the entire plant becomes poisonous, including its nectar and pollen. Neonicotinoids are a chemical class of systemics that have become the world’s most widely used insecticides.

Pesticide industry supporters will tell you that “pesticide use has reduced dramatically” in the past 40 years. They fail to mention that one pound of imidacloprid, the most widely used neonicotinoid insecticide, is so incredibly potent that it is about 7,000 times more toxic for bees than a pound of an older pesticide. Neonicotinoids are so harmful to bees that they have been banned in the 28 countries of the entire European Union, even in the face of intense pressure by agribusiness to keep them in use.

But here in the United States, we beekeepers have to lose, on average, one-third to almost half of our hives each year while the Environmental Protection Agency does nothing to reduce what is undeniably a major contributor to, if not the outright cause of, the death of our pollinators: pesticides.


The writer is a member of the board of the Central Maryland Beekeepers Association.

From https://www.washingtonpost.com/opinions/readers-critique-the-post-two-ways-in-which-fourth-of-july-coverage-was-lacking/2019/07/19/da8f9a96-aa4c-11e9-a3a6-ab670962db05_story.html

### Sulfoxaflor Continues to Be a Bee Killer

EPA’s announcement to expand the use of Sulfoxaflor means expanded loss of managed and native pollinators. Beekeepers, whose honey bees provide the essential agriculture pollination service for our food supply, have suffered colony losses of 40-90% annually the past ten years.

A horizon scan of future threats and opportunities for pollinators and pollination placed the chemical Sulfoxomine (sulfoxaflor) in the top six priority issues that globally threaten the agricultural and ecological essential service of pollination.

**Six high priority issues**

1. corporate control of agriculture at the global scale
2. sulfoximine, a novel systemic class of insecticides (which is sulfoxaflor)
3. new emerging RNA viruses
4. increased diversity of managed pollinator species
5. effects of extreme weather events under climate change
6. positive effects of reduced chemical use on pollinators in non-agricultural settings

The Pollinator Stewardship Council has expressed our concerns about the registration of Sulfoxaflor for reduced use, and for emergency exemptions. In our legal action about the registration of Sulfoxaflor, the Ninth Circuit Court found in their review that important data concerning the effect upon honey bees from Sulfoxaflor was incomplete. EPA adjusted the pesticide label, reducing the bee attractive crops on which the chemical could be applied. However, let’s be concise: the active ingredient, Sulfoxaflor, is toxic to chewing and sucking insects. Honey bees and other pollinators are chewing and sucking insects.

With over one billion pounds of pesticides used in the U.S. annually, the EPA claims there are “few viable alternatives for sulfoxaflor.” Research is showing the “viable alternatives” are to restore the health of
agricultural soils so the beneficial insects and fungi can return and protect the crops. “Regenerative Agriculture is a system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds, and enhances ecosystem services.”

By restoring the health of soils, we restore the health of plants, and we restore the health of beneficial insects like pollinators.

In a study conducted from 2004-2009 by the University of Idaho on various methods of control for lygus bugs in alfalfa it was observed the Peristenus howardi (and similar species) parasitized lygus bugs ranging from 5% to 80%. The primary goal of that research was “to conduct studies investigating the feasibility of enhancing lygus bug management in alfalfa seed through several complementary approaches. The individually low levels of lygus bug management provided by newer, more selective alternative compounds and that provided by natural enemies of lygus bugs will be combined in an attempt to provide acceptable levels of lygus management in large plots of alfalfa grown for seed. We will attempt to further enhance natural enemy numbers in these studies through modification of crop habitat (border treatments).”

These very “border treatments” will now be under threat of contamination from Sulfoxaflor applications, degrading their prospective evidence-based solution of providing habitat for natural predators of crop pests. Similar border treatments in other crops would be as beneficial. But the 12-49 feet of blooming crop border could be contaminated with the bee toxic pesticide, Sulfoxaflor. Blooming field borders support true IPM (Integrated Pest Management), providing costs savings to the farmer in reduced chemical inputs, and conserving crop losses through the pest management of beneficial insects.

While Pollinator Stewardship Council appreciated the initial revised Sulfoxaflor label as an improvement over the previous label, limiting the use of the pesticide after bloom on mostly non-bee attractive crops, Sulfoxaflor is still a bee toxic pesticide with unknown synergisms when tank-mixed. With little to no data on the degradates of Sulfoxaflor, and no research of tank mixes with Sulfoxaflor, it remains a bee toxic pesticide contaminating bee forage through drift and residue. With the expansion of the use of Sulfoxaflor EPA is ignoring the threats to essential agricultural and ecological pollination services, and to the very livelihood of beekeepers tasked with providing the managed honey bees to pollinate our crops.

4 http://www.regenerativeagriculturedefinition.com/
https://www.agweb.com/article/epa-restores-sulfoxaflor-insecticide-use-for-farmers/
Member Drive During National Honey Month

Become a Member today or renew your membership during the month of September and you will be entered into our drawing for one of two native pollinator houses or one of sixteen packets of pollinator habitat flower seeds. Pollinator Partner Members and Individual Beekeeper Members will be entered into the drawing for native bee houses and flower seeds (packets cover 250 square feet); winners to be drawn Oct. 1. Winners of the drawing will have the native bee house and habitat seeds mailed to them. The habitat seeds can be planted this fall for food for pollinators next spring.

State Beekeeping Associations who become a member or renew their membership will be entered into a drawing for one to three presentations by Pollinator Stewardship Council at your 2020 state conference within 520 miles of Akron, Ohio (the Program Director’s worksite). Travel expenses will be waived for those winning state associations. This drawing for two State Beekeeping Associations one to three presentations by Pollinator Stewardship Council at their 2020 State Conference will be held Oct. 31.


Member benefits: (depending on level of membership)

Monthly newsletter, participation in advocacy actions, Club’s name listed on our website as a member, possible collaborative programs, member’s logo and weblink posted on our Home page of website, assistance in filing bee kill reports; one to three presentations by our staff in person or via skype (dependent upon schedules and distance-travel expenses not included); assistance with a singular research or presentation project for the club or a club member; assist with grant writing/research for a local project; assistance in filing bee kill reports, one lab analysis of hive products (in association with Pesticide Research Institute); support through our advocacy software of state legislative issues, assist with nonprofit development.
Neonicotinoid ban: how meta-analysis helped show pesticides do harm bees

April 30, 2018 6.40am EDT Julia Koricheva, Professor of Ecology, Royal Holloway, printed in The Conversation

The EU has announced a near-total ban on three insecticides that we now know are harmful to bees and other pollinators. And yet for years, scientists weren’t sure whether these neonicotinoid insecticides had any significant effect on bees, thanks to numerous studies that appeared to contradict each other.

This isn’t an uncommon experience, as anyone who follows the latest scientific news will know. Sometimes it feels like we are constantly bombarded with contradictory claims on every possible topic from climate change to cancer treatments. How do we know what’s true and how are we supposed to put recommendations from scientific studies into practice if scientists cannot seem to agree among themselves?

Luckily, scientists have a tool that can not only help sort through large amounts of confusing data but also reveal conclusions that were statistically invisible when the information was first collected. This practice of “meta-analysis” is what helped researchers see there was a problem with neonicotinoids, paving the way for the risk assessment that ultimately led to the ban. In fact, meta-analysis is now so widespread that it affects our lives on a daily basis.

To understand how this process works, we need to know why scientific studies can contradict one another. Initial studies on new and topical subjects make attractive headlines due to their novelty. But these early studies are often small and usually severely overestimate the effects they are assessing. As a result, their conclusions are often overturned by the follow-up studies.

The problem has become worse over the last few decades, as modern technologies have allowed scientists to generate new data much faster than before. This has often resulted in a sequence of extreme, opposite results being published.

To make sense of such situations, scientists developed a robust statistical approach that involves analysing all available studies on a given topic: meta-analysis. Because all of studies might have been carried out in slightly different ways, their results are first converted into some sort of a common currency so they can be compared.

This common currency is a measurement of how large the effect being studied is (effect size). For example, how much a particular medical treatment increases patients’ odds of survival as compared to placebo or another treatment.

Effect sizes are then statistically combined across the different studies to estimate the overall effect. Larger studies usually contribute more to the overall effect estimate than smaller, less precise studies. We then evaluate whether it is a positive or negative effect and whether it is big enough to be of importance.

READ the complete article at http://theconversation.com/neonicotinoid-ban-how-meta-analysis-helped-show-pesticides-do-harm-bees-94180
Use Methods For Controlling Varroa That Are Tested, Legal and Work

By Jennifer Berry, as first printed in Bee Culture magazine, Aug. 29, 2018 (and presented at the recent EAS Conference)

Last year, a new method of using oxalic acid (OA) was publicized by Randy Oliver, Scientific Beekeeper. According to his updates, he was having pretty good results with the new method. Beekeepers, along with myself, became hopeful that this new formulation would be the silver bullet we’ve all been waiting for. . . . In October 2017, I published an article briefly discussing the study but at that time, we had not completed analyzing the data. We were still hopeful we could have results within a few months but unfortunately, we were a bit too optimistic. The data set was very large and took us much longer to analyze than we had anticipated. Read the full article at https://www.beeculture.com/go-with-what-we-know/

Database Summarizes Research on Pesticides & Invertebrates

The Xerces Society is developing an IPI database that examines the impact of pesticides on invertebrates. The database contains summaries of research articles on pesticides, their effects on invertebrates, and pesticide movement in the environment. Articles have been reviewed and summarized to highlight key findings by Xerces Society staff.

The database is not comprehensive. It includes a selection of recent articles (primarily since 2015), with new studies added as they become available. If you would like to recommend an article for inclusion here, please contact us at pesticides@xerces.org.

Searching the Database
To search the database, you may enter search terms separated by a comma in the search bar (for example, “neonicotinoids, bees”). Search terms may include chemical class, active ingredient, species name (common or scientific), journal, author, or other key words. Alternately, you may use the links provided to view articles grouped by pesticide type or invertebrate.

Resources
The Xerces Society has produced several fact sheets, reports, and guidelines to inform conservation efforts to protect invertebrates from pesticides, including How Neonicotinoids Can Kill Bees and Beyond the Birds and the Bees: Effects of Neonicotinoid Insecticides on Agriculturally Important Beneficial Insects. For information about these and other resources addressing pesticide impacts and alternatives, visit xeres.org/pesticides/. You can find the IPI database at https://pesticideimpacts.org/
Food for thought: Using an evidence-based approach to manage honey bees in light of wild bee declines

Margarita M. López-Uribe
Center for Pollinator Research, Pennsylvania State University
Native Pollinator Advisor to the Pollinator Stewardship Council

Honey bees are critical for crop pollination in the United States. The US is the first global producer of almonds and blueberries, and both of these crops require large numbers of managed honey bee colonies to maximize yields. In California, almond trees cover 1.4 million acres that supply about 70% of the demands worldwide. In Michigan, the acreage of blueberries has reached over 20,000 acres that produce about 100 million pounds of blueberries every year. The intensification of these (and many other) agricultural systems has increased the demands of honey bee colonies that need to be available for pollination services at times of the year when large acreages of these crops are in bloom. However, managed honey bee colonies in the US are dying at unsustainable rates of around 40% every year. The high number of honey bee colonies that beekeepers lose yearly has turned on the alarms about the drivers of these losses and what strategies can be used to improve the survival of managed honey bee colonies.


Special Issue: Honey Bee Research in the US: Current State and Solutions to Beekeeping Problems

The collection of empirical and review papers in this special issue show that the current challenges of reducing annual honey bee colony losses are a major driver of the apicultural research in the US. However, these studies have also generated a large body of literature on basic aspects of honey bee biology that need to be understood to guide beekeeping practices that can improve honey bee health.

Some of the key topics of critical need for apicultural research include better biomarkers of queen health—as it is a major factor impacting the industry, a better understanding of genetic, physiological and behavioral mechanisms of resistance to viruses, and how management practices can help mitigate biotic and abiotic stressors of honey bees. The studies presented in this special issue make some headway in the advancements on these topics and hopefully will inform some meaningful changes into solutions to the current beekeeping problems in the US and the world.

READ the full article at https://www.mdpi.com/2075-4450/10/1/22
Honey Bees and Native Pollinators Need You to **Plant Seeds!**

*Plant pesticide-free forage for pollinators*

Pollinator Stewardship Council has partnered with Ohio Prairie Nursery in support of pollinator habitat. *Go to our website, [www.pollinatorstewardship.org](http://www.pollinatorstewardship.org) and select “Support Our Cause” to view featured seed selections to benefit pollinators.*

Pollinator Seed mixes include:

- Woodland edge mix
- Butterflies & Hummingbirds Mix
- Septic/ wet area field mix
- Eastern Great Lakes mix
- ESHPA mixes
- Econo Native Short Meadow
- Native tall Meadow
- Quick Growing Wildflowers mix
- Fall Pollinator Fuel Mix

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**Pesticides and their Half-life Impact Upon Pollinators**

*A half-life is a measure of how long it takes for 50% of a chemical to degrade.*

(Half-life is the period of time it takes for one-half of the amount of pesticide in the soil to degrade. Each half-life that passes reduces the amount of pesticide present in the soil by one-half, i.e. 1 to 1/2 to 1/4 to 1/8 to 1/16, etc.)

**Insecticides**

Pyrethrins- a few hours (highly toxic to bees)

Pyrethroids--Bifenthrin  7-8 months (highly toxic to bees)

- Cypermethrin- 8 days to 8 weeks; 100 days in water (highly toxic)
- Deltamethrin- 1-2 weeks (highly toxic to bees)
- Esfenvalerate- 15 – 90 days in soil, 2-4 weeks on vegetation, 21 days in water (highly toxic to bees)
- Permethrin- 43 days to 5 years (highly toxic to bees)
Board Members Must Know Their Role & Responsibilities

The most important aspect of a nonprofit beekeeping association is the bee club comes first, not personal agendas, not personal profit. The bee club is the “entity” all of the members and the Board must protect, strengthen, and help to ensure its longevity.

- The board is responsible for its own operations, including periodic (i.e., at least once every two years) evaluation of its own performance.
- The board should have stated performance expectations and hold board members accountable for attendance at meetings, participation in fundraising activities, committee service, and involvement in program activities.
- The board should establish a rigorous board development strategy for recruiting and selecting new members and ensuring that the board has an appropriate mix of talent, connections to the community, and diversity.
- Board policies should include limits on the number of consecutive terms a board member may serve.
- The board is responsible for the orientation, education, and (where appropriate) the removal of board members. New board members should receive an introduction to the Standards for Excellence code or similar Guidance document from your State Attorney General.

Learn more about the Standards of Excellence for nonprofits at https://standardsforexcellence.org/Home-2/code

A Good Nominating Committee Protects Against Difficult Board Members

These practices help the board guard against erosion and instill self-correcting mechanisms when problems arise.

- Clear standards: have written Board member role and responsibilities
- Everyone leads: all participate in the club’s management and activities
- Collective action: all Board members work for the good of the bee club
- Hang on to the buck: all Board members must understand and manage the club finances prudently
- Thank you and goodbye: if a Board member cannot follow any of the above they should remove themselves from the Board or asked to resign.

Learn more at http://www.massnonprofit.org/expert.php?artid=2181&catid=22

The Antidote to Difficult

These practices help the board guard against erosion and instill self-correcting mechanisms when problems arise.

- Start Strong
  The stronger the board, the better chance it has of avoiding problems altogether. To become strong and stay strong, continually be mindful of best practices.
- Self-Starter
- Strategic and unhurried recruitment: Board members genuinely search for people who can add value and take the time to meet them, woo them, learn their strengths and weaknesses, and develop confidence that the fit will be successful.


“Problems are best avoided through written policies, governance structure, and organizational culture.”
Plan to Expand Your Beekeeping & Pollinator Education

Sept. 20, 2019 – Cleveland Pollinator & Native Plant Symposium
https://www.clevelandpollinatorsymposium.org/

Sept. 28, 2019- Ohio Hunger Dialogue, Walsh University
https://www.walsh.edu/dialogue

October 11 and 12, 2019--Tennessee Beekeepers Association Annual Conference

2020
https://www.abfnet.org/

Jan. 8-11, 2020 – American Honey Producers Association Conference https://www.ahpanet.com/


October 9 and 10, 2020-- Tennessee Beekeepers Association Annual Conference
http://www.tnbeekeepers.org

One of Pollinator Stewardship Council’s projects:
33 acres of pollinator habitat on reclaimed mining land. A collaborative project funded by the Ohio Environmental Education Fund.

How Can We Serve You Better? – A Member Survey

We want to learn what you know about our work, how we can better serve you, as we work together to protect our managed and native pollinators from the adverse impact of pesticides. Your input is invaluable to us. Please complete this brief survey, and share with us your concerns and ideas. Take our survey at https://www.surveymonkey.com/r/6WHP7FY
Our Members /Supporters

People and Pollinators Action Network http://www.peopleandpollinators.org/
Seib’s Hoosier Honey  http://www.seibshoosierhoney.com/
Strachan Apiaries https://www.strachanbees.com/
Beekeepers of Middle Tennessee  http://bomtn.org/
Hackenberg Apiaries http://hackenbergapiaries.org/
Old Mill Honey Co.
Wind River Honey Co.
South Dakota Beekeepers Association
Miksa Honey Farms
Sunshine Apiary, Inc.
Hiatt Honey LLC
Rick Smith
Bob McDonell
Headwaters Farm
Bret Adee
Robert Bergman
Charles Scott
Tom Sullivan
Brians Bee Haven
Acorn Beekeeping Equipment, LLC
Jubilee Honeybee Co., LLC
Joe Hurley
R.T. Marshall
Vincent Aloyo
Janet Katz
Lynn Sparks
Laura Wyatt
Sustainable Futures Fund
Scotts MiracleGro Foundation
International Mating Nucs
Mel Disselkoen
Ruby’s Apiaries
S & M Honey
Sammy Ramazani
The Studio Digital http://www.thestudiodigital.com/
Beekeeping Insurance Services http://www.beekeepingins.com/
Gene Brandi Apiaries
The Beekeepers of Indiana http://indianabeekeeper.com/
The Organic View https://www.theorganicview.com/
Bee Squared Apiaries https://bethsbees.com/
Fleur-de-lis Apiary
Los Angeles County Beekeepers Association
John Accornero, Lee Albritton, Linda & Manley Bigalk, William Cannon
Amy Davis, Margaret Donharl, Sara Grimm, Lynn Hazelrigg
David Hill, Janet Hofman, Ray Hopper, Linda Howitt, Eric Kimble, Leigh Wiley, Paula Breen, Bob Brandi,
Susan Rhodes, Janel Rogers, Wayne Ross, Susan Rudnicki, Kim Schneider, Jacob Troyer, Tom Theobald,
Stephen Wilson, Eileen Whitacre, Samuel george, Joel Hausser, Lynn Wilson, Smith Farm Pure Honey
Renew Your Membership / Become a Member Today

Our mission is to defend managed and native pollinators vital to a sustainable and affordable food supply from the adverse impact of pesticides. Join us! You can complete this form and mail it, go online and join us, or make a donation today at www.pollinatorstewardship.org.

Name__________________________________________________________
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I would like to charge my dues/ contribution to:

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Expiration Date ____________
Security Code________
Signature________________________________________________________

Member dues and donations support our work, provide matching funds for grant funded projects, and support our collaborative work in education, advocacy, and research.

Please return this completed form and your check made out to the:

Pollinator Stewardship Council
1624 Idlewood Ave., Akron, OH 44313
832-727-9492

Make your tax deductible donation today!

MEMBERSHIP

Pollinator partners
___ $25 individual, non-beekeeper
___ $10 students K-college; university scientists
___ $50 nonprofit partners with similar mission
___ $500 Beekeeping Supplier Partner
___$1,000 agricultural stakeholder partner with budgets $1M+

Beekeepers
___ $25 individual beekeeper with 25 or less hives
___ $75 individual beekeeper with 26 to 300 hives
___$1.00 per hive for commercial beekeepers with 301+ hives

Beekeeping Associations
___ $ 100 for a local beekeeping assn. with 10-50 members
___ $ 200 for a local beekeeping assn. with 51-100 members
___ $ 250 for a local beekeeping assn. with 101-300 members
___ $ 500 for a State/Regional Beekeeping Assn., and beekeeping clubs of 301+ members

To view the benefits of membership go to www.pollinatorstewardship.org

We welcome donations to support our work

___ $ __________________ donation