

Lane County Beekeepers September meeting presentation, “Good News about Honey Bees” by Dewey Caron, referenced many links for members on pesticide use, planting flowers and providing habitat for bees. Several are listed below for your convenience. See article below for complete information and links.

Oregon Pollinator Protection Act 2017 SB 929: www.beyondtoxics.org/work/save-oregons-bees/

White House Pollinator Health Task Force:

https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Blog/PPAP_2016.pdf

Ten pointers to help save the bees: <http://buzzaboutbees.net/save-the-bees.html>

Xerces Society Wildflower Seed Mixes: <https://xerces.org/pollinator-seed/>

Bee City USA: www.beecityusa.org/

Million Pollinator Gardens: <http://millionpollinatorgardens.org/>

GOOD NEWS about Honey Bees

by Dewey M. Caron

At the Lane County Beekeepers September meeting my presentation included resources you might consult. I showed a slide of FAT bees and FAT colonies – that information was in my September LCBA newsletter article. For the early spring note (according to USA-NPN, spring is arriving 2 to 4 weeks early in much of the South & Mid-Atlantic) see their website: <https://www.usanpn.org/>. Good weather is important for bees to rear FAT bees in the fall and an early spring will mean plentiful pollen for faster colony expansion (as older winter bees are dying) – both make beekeeping easier. This year we had an early fall and a colder winter, with a cooler spring in Oregon.

I mentioned the study of bumble bee intelligence from NPR Science Friday. Information at: <https://www.sciencefriday.com/segments/the-secret-smart-life-of-bees/>. Also, see press release https://www.morningagclips.com/ball-rolling-bees-reveal-complex-learning_. More GOOD NEWS: The Rusty Patched bumble bee I used for the illustration in the NPR Science Friday GOOD NEWS article was officially listed as an endangered species on March 21, 2017, the first mainland bee federally protected. It joins seven yellow-faced bees in Hawaii that were placed on the endangered species listing last year.

The information about BAD news on mites is from numerous sources. Marla Spivak quote from a TED talk she gave (find on YouTube) and a USDA quote from Kate Aronsen of Weslaco lab. For a good review of mite information by Meghan Milbrath of Michigan State see the following: https://pollinators.msu.edu/index.cfm/_api/render/file/?fileID=DF89D02E-155D-E635-18277C05F562D8CC. She also says bees are profoundly unhealthy. See *2017 Planning for Varroa* at <https://pollinators.msu.edu/resources/beekeepers/planning-for-varroa/>. For Lane County I have information on the website www.pnw honeybeesurvey.com that includes reports of losses (shows for example PNW commercial beekeepers losses below 25% while backyard Oregon beekeepers had 48% overwintering losses) and what management beekeepers are doing that help to reduce losses

The GOOD NEWS on mites was that controls of both chemicals and non-chemical controls work, but require smart beekeepers and timely use of the controls. The BEST source of information on mite and mite control is from the Honey Bee Health Coalition where the document *Tools for Varroa Management* can be accessed (free download) <https://honeybeehealthcoalition.org/varroa/>. There is a discussion on sampling and information on the controls that work. Site includes videos on how to sample for mites and how to use and information on use of the various controls.

Tools recommend an IPM -Integrated Pest Management - approach that seeks to begin with use of non-chemical methods and, if numbers become elevated, the use of chemicals to knock the numbers back. This would be a consistent with a “Working toward Treatment Free” mite control. The issue of insuring bee health is not that mites, per se, be controlled but the fact that varroa mites transmit and/or enhance replication of several viruses in honey bees. For good health we need control the mites to avoid virus epidemics in colonies. Among the most serious virus is DWV – deformed wing virus. This virus doesn’t kill the larvae (which when they emerge as adults display the deformed wing symptom),

but do live long enough to pass the virus on to sisters. Adults with the DWV infection (adults lack symptoms we can diagnose) do not live as long as normal and do not perform at peak levels. They pass the disease to sisters and when they leave their hive too frequently end up (via drifting) in another colony, spreading the disease to their neighbors. Colonies with high numbers of viruses infected bees collapse in the fall (the condition termed PMS - Parasitic Mite Syndrome).

The Good News information on our battling of bee viruses is from various sources. There is a YouTube video of Ron Hoskins explaining his bees are holding their own. He has not used chemicals and has selected (he believes) for grooming behavior of his stock – basically survivor stock – like many beekeepers not treating. He explained he had two winters with heavy, heavy losses, but by dividing his colonies in the spring and using queens from the surviving bees (and not importing bees from outside) he now has a stock that is diverse in their virus infections (group B type viruses – deadly but they kill bees and not whole colonies usually) versus the Group A type DWV virus. See this interesting YouTube:

<https://www.bing.com/videos/search?=ron+hoskins+u+tube+video&view=detail&mid=953849625550414175C7953849625550414175C7&FORM=VIRE>

Steve Martin and Decclan Schroeder have published their studies of varroa mites on the Hawaiian islands Bees showing a diverse virus infestation may be the best bee defense – a condition Decclan terms supine virus suppression. Their research found bees on the island of Oahu with only DWV and with heavy colony losses; in 2 year sampling DWV was becoming predominate virus on Big Island (Hawaii) and they were seeing heavy losses. Islands with bees without heavy DWV (and no varroa) had much lower losses. Goggle Hawaiian mite studies – details are in scientific publications which you might not be able to download for free.

Information on Ss1 in PLOS ONE but this single study shows only a correlation (not causation). Sick bees and 50% of mites have these Ss1 bacteria and authors claim it may then explain losses?

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0167752>

GOOD NEWS is our progress toward finding bees better able to help themselves fight mites (and viruses). There are three types of hygienic behavior -- Stocks with VSH (find mite infestations in capped pupae cells so they uncap them and throw out pupae along with the mite feeding on the pupae before it reproduces) or “ankle biters (a selection developed at Purdue University that are superior grooming bees – they bite mites on sisters and discard them) and finally bees that develop sooner do not have a capping stage sufficiently long enough to allow the female mite to raise more adult mites. Website for Adam Finkelstein and Kelly Rausch is <http://vpqueenbees.com>.

GOOD NEWS is there is no one CORRECT way to keep bees. I showed a scale from hands-off to industrial beekeeping and made statement: Where are you on this scale? It depends upon your objective and the season and also on mite numbers - there is no one way to keep bees. If you are hands off (treatment-free) you accept responsibility to continue to purchase new bees as the mites eliminate all susceptible stock whereas the lowest winter and seasonal losses are those of the industrial beekeepers who spends time and introduces “externalities” including 3 or more annual mite control applications. We are now hearing about Darwinian beekeeping or api-centric beekeeping. See publication of Tom Seeley on Darwinian beekeeping – he will soon have a book on same topic.

Dichotomies, a feature of the Bee Audacious conference held in Dec of 2016, Thinking Outside the Box, is a publication on audacious thinking and meeting summary by Mark Winston. http://beeaudacious.com/wp-content/uploads/2015/09/BA_Final_Reportv1.6.pdf

Good news of Api 137 a new antibiotic for humans (but Right now promise only).

<http://www.ajpb.com/news/honeybee-compound-shows-promise-in-antibiotic-development> and <https://www.sciencedaily.com/releases/2017/09/170906170622.htm>

The week of Sept 9-16 was the 1st Mite-a-Thon. We asked for your September mite check using either powder sugar or alcohol wash and then upload results to MITE Check (BIP) for a “snapshot” of mite numbers across the U.S. To check the results go to <https://bip2.beeinformed.org/mitecheck>. Lane County had a one individual report 92% mites and it appears the Willamette Valley is a HOT SPOT. I asked if there is a bee crisis. I pointed LCBA members to an article in Reason.com by Shaun Regan: <http://reason.com/archives/2017/07/19/how-capitalism-saved-the-bees/1>

The problem, some say, is with backyard or “novice beekeepers” Michael Scott, a Pennsylvania beekeeper provides such argument to Jason Levan for his article, *Novices Pose Biggest Threat to Honey Bees, Local Keepers Say*. See website: https://www.indianagazette.com/news/novices-pose-biggest-threat-to-honeybees-local-keepers-say/article_21791338-6459-11e7-9fe2-eb4a5a3f012d.html. However, for a completely different opinion see, *Can Hobby Beekeepers and “Bee Evangelists” save the Ecosystem*, by John Russo, lavender farmer in California, Sierra September Magazine. <http://sierraclub.org/sierra/green-life/can-hobby-beekeepers-and-bee-evangelists-save-ecosystem>. Also, Russo’s Agri-tourism farm “experience” <http://www.carmelvalleyranch.com/play-for-all-ages/bee-experience>.

HONEY – After mites, honey (imports, artisan) seems to be the biggest problem for economic viability of the largest beekeepers. Honey sells wholesale for just over \$2.00/lb and harvests are now closer to 150 Million tons (compared to previous >200 Million tons).

I began with the BAD NEWS that most of the honey in use in U.S. is imported and some of it is adulterated and/or ultra filtered. Bee Culture Magazine editor, Kim Flottum, does an annual honey report. Information from his 2016 summary: <http://www.beeculture.com/u-s-honey-industry-report-2016/>.

The GOOD NEWS is that Local honey is unequaled, sells for a decent price, is sought after and is unique. Local artisan, locally sourced, specialty honey examples (many offered on internet) were BEE LOCAL <https://www.beelocal.com/> in Portland Oregon and Glory Bee in Eugene.

Henry Storch, Old Blue Honey in Philomath Oregon, is the 2017 Good Foods (www.goodfoodawards.org/) award winner for his Big Leaf maple and blackberry honey, <http://oldbluenaturalresources.com>. Buddy and Meg Sequim, Honey Farm in Washington, ([HTTP://SEQUIMBEEFARM.COM/](http://sequimbefarm.com/)) is also a 2017 Good Foods award winners (2nd year in a row) with their blackberry honey, which is a Certified Naturally grown honey.

Manuka honey is a unique product. GOOD NEWS. Manuka honey can be heated and sterilized and not lose its UMF = unique Manuka Factor), so mainstream medical doctors prescribe it for cuts, burns, skin lesions and body sores. Manuka is one of many honeys that promote faster healing of human (and animal skin) with less scarring. See: <http://www.webmd.com/a-to-z-guides/manuka-honey-medicinal-uses#1>.

Manuka honey is so valuable that hive thieves attempt to steal the colonies before the beekeeper harvests. A New Zealand company, MyApiary LTD, offers their Hive Tracker electronic system that electronically tracks colonies. Any time a colony is disturbed or moved a signal is sent to the owner and it enables the beekeeper to track the whereabouts of their colony and even view the honey stealers as they rob the owner. It has enabled colonies with their Manuka honey to be recovered. U.S. beekeepers use something similar, an electronic chip, to help them ID their colonies in case they are stolen (as happens in almond each year). There is lots of great technology out there. There is a tool in development to help beekeepers determine what is changing in their boxes without first looking.

Mead is (likely) our oldest fermented drink. It and cider are enjoying a revival. Goggle local articles.

General Mills (Honey Nut Cheerios) has a campaign to plant more pollinator plants which can be found at: www.cheerios.com/bringbackthebees. The packets contained non-native seeds and in some states plants that were listed on the invasive species list.

PESTICIDES: It was difficult to find GOOD NEWS about pesticides and bees. I started by saying pesticides are useful for beekeepers to combat mites and for growers to produce high quality, inexpensive crops and food stuffs. Pesticides are not going away, but we still need to do better to protect bees when we use pesticides. The ‘poster child’ of mis-use was the Wilsonville Bumble Bee kill of June 2013. For details see my Bee Culture article <http://www.beeculture.com/pesticide-causes-massive-bumble-bee-massacre/> or information from Xerces, <http://www.xerces.org>.

The GOOD NEWS from the Wilsonville kill incident was the public outcry and the energizing of environmentalists resulted in the banning in Oregon of the 2 neonicotinoids involved, fining of the applicator, plus an Oregon Legislative Task Force that has resulted in passage of 3 new bee health initiatives which included the hiring of a new Extension Bee Health specialist at OUS, Andony Melathopoulos. A great resource for information on neonicotinoid insecticides is the Xerces Society pamphlet “*How Neonicotinoids Can Kill Bees: The science behind the role these insecticides play in*

harmbees.” This is a free pdf download. <https://xerces.org/neonicotinoids-and-bees/>

We hear a good deal about use of seed coatings (neonicotinoids on corn for example) which have apparently caused serious problems for some beekeepers. <http://www.agriculture.com/news/crops/purdue-study-corn-seed-treatment-insecticides-pose-risks-to-honey-bees-yield-benefits> and <https://www.scientificamerican.com/article/widely-used-pesticide-is-a-buzzkill-for-honeybees/>

Some GOOD NEWS – On September 15 the EPA asked for public response to use of a new microbial biopesticide (ZAP Males™) that creates infertile eggs in female mosquitoes – there have already been colony losses in South Carolina from Zika spaying with naled (a pesticide used over 50 years for mosquitoes – a known bee killer) <https://www.nytimes.com/2016/09/02/us/south-carolina-pesticide-kills-bees.html> and <https://www.epa.gov/pesticides/epa-requests-comment-proposed-registration-new-biopesticide-help-control-spread-zika-and>.

Lawsuits: Beyond Pesticides and the Organic Consumers Association (OCA) have filed a lawsuit against SUE BEE (www.suebee.com) for ‘deceptive and misleading’ use of the word natural on their label because it contains glyphosate (Monsanto Roundup® herbicide). Samples (69 total) of both U.S. and imported (including organic) honey were collected from Philadelphia grocery stores contained glyphosate. (<https://www.organicconsumers.org/>).

California has added glyphosate to Proposition 65’s list of cancer causing chemicals, which may mean that this information might have to go on honey jars. Proposition 65 information: <https://oehha.ca.gov/proposition-65/cnrn/glyphosate-listed-effective-july-7-2017-known-state-california-cause-cancer>

Beekeepers win in two court cases, both in 9th Circuit Court. November 2015 EPA issued a cancellation order for all previously registered sulfoxaflo, a neonicotinoid-type insecticide, http://pollinatorstewardship.org/?page_id=3706. November 2017 the registration of a highly toxic pesticide to honey bees has been revoked due to the flawed and limited data collected and reviewed by EPA. The pesticides involved are clothianidin and thiamethoxam, neonicotinoids, which are a newer class of systemic insecticides that are absorbed by plants and transported throughout the plant’s vascular tissue, making the plant potentially toxic to insects. <http://www.sierraclub.org/texas/blog/2017/05/win-for-us-and-honeybees-court-rules-epa-approval-bee-killing-pesticides-violated>

Are honey bees the ‘Canary in the Gold Mine’, the ‘poster child’ for the harm we are doing to our environment? An example of working with elected officials is Beyond Toxics efforts to seek legislation (Oregon Pollinator Protection Act 2017 SB 929.) See www.beyondtoxics.org/work/save-oregons-bees/.

The GOOD NEWS on the White House Pollinator Health Task Force can be found at https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Blog/PPAP_2016.pdf and the 10 pointers to help save the bees are at: [HTTP://BUZZABOUTBEES.NET/SAVE-THE-BEES.HTML](http://BUZZABOUTBEES.NET/SAVE-THE-BEES.HTML). Most recommendations revolve around pesticide use, planting flowers and providing habitat.

Foraging/food for pollinators: The GOOD NEWS is there are significant efforts to provide bees with better and safer forage. Examples: efforts with parks plus roadside plantings, golf courses and public right-of-way lands such as gas pipe lines, electric transmission lines, etc. The Xerces Society has useful publications on several of these habitats such as roadsides and golf courses. They also have great information on wildflower seed mixes, keyed to different regions of the U.S. <https://xerces.org/pollinator-seed>. It is critical to avoid weeds (such as occurred in the Cheerios cereal mix see packet) and with Palmer Amaranth, labeled as the most troublesome weed in the U.S. that was being included in one mix. It is glyphosate resistance so it will show up in round-up ready agricultural crops.

I mentioned The New York Phenology Project, a networked community science initiative focused on climate and urbanization impacts on plants and pollinators. Two community examples I included were for the Seattle Pollinator Pathways and City of Eugene, Oregon with expanding efforts to Protect Pollinators (with ban on neonics on city landscaping) and provide more food alternatives.

Two programs that seek to both do and educate are the BEE CITY USA, www.beecityusa.org/, designation (Ashville, North Carolina was the 1st, then Talent Oregon. There are many now and even some county/city joint efforts (Anne Arundel County and cities of Annapolis and Highland Park) and also college campuses such as Portland State University and Southern Oregon University. Washington DC is about to become a BEE CITY and also a part of the Million Pollinator Gardens, <http://millionpollinatorgardens.org/>. An interesting initiative is the I-35 corridor, from Texas to Minnesota, seeking to plant wildflowers beneficial to monarch butterfly migrating into the U.S. from Mexico.

<http://texasbutterflyranch.com/2015/05/27/ih35-to-become-pollinator-corridor-for-bees-monarch-butterflies-and-other-pollinators/>

The Website [HTTP://BUZZABOUTBEES.NET/SAVE-THE-BEES.HTML](http://BUZZABOUTBEES.NET/SAVE-THE-BEES.HTML) was offered as an example of where you can get great information and great downloads.

The website of Beekeeper Eric Patno of Lynwood Washington, with his NW Honey Bee habitat restoration 501c3 appeal, although well-intentioned, unfortunately depicts a pollinator other than a honey bee (he has a flower fly). It is important to get it right. <http://www.nwhoneybee.org/mission.html>

The neat Wild bee abundance map (showing how few exist in Washington DC or Key Largo, Florida) is at www.uvm.edu/giee/?Page=news&storyID=24083&category=gundhome. Oregon has a great resource from the Oregon Department of Agriculture *Common Bee Pollinators of Oregon Crops*; a free download is available at: <https://digital.osl.state.or.us/islandora/object/osl%3A87155>

I closed with the BEST NEWS of all; there is more good information, more collaboration, more funding, more mentors and classes to learn beekeeping and more interest in the general public. Inquiring minds want to know how to start Beekeeping.

Additional comments from Dewey M. Caron, OSU Affiliate Professor, on “Responsible Beekeeping” that were not included in his LCBA September presentation and are his opinions and viewpoints on mites, treatments and hive styles.

NOTE: Responsible beekeeping advocates and teaches Langstroth hive beekeeping and pro-active mite control – because if left unchecked mites will eventually destroy ALL (or nearly all) colonies. Most individuals would never consider purchase of an animal (pet; livestock) and then leave it alone to fend for itself – animals (including honey bees) in our care need some minimal care of feeding/shelter/water/human assistance. It then stands to reason that we SHOULD NOT consider becoming a beekeeper unless we are willing to provide “reasonable” care –stewardship is much more than just putting them in a box (hive) and then not feeding or using mite control (If mite numbers get out of hand). Responsible beekeeping is not allowing the bee colonies to be infested with mites and die just because we can replace them relatively inexpensively with a new nuc or package next spring. Those mite infested colonies will share their mites with other colonies so we must be responsible to our neighboring beekeepers. Unfortunately that is what is happening, and is one of the reasons for heavy winter losses.