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Honeybees pollinate crops but endure stress, parasites and disease.
Solutions are coming

Perils of commercial beekeeping

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By Paul Driessen Sunday, April 6, 2014



One of America's earliest food crops – almonds – is also one of the most important for commercial beekeepers. Almonds depend on bees for pollination, but the explosive growth of this bumper crop taxes the very honeybees the industry needs to thrive.

California's Central Valley produces over 80% of the world's almonds, valued at over \$4 billion in 2012. The boom is poised to continue, with new food products and expanding overseas markets increasing demand to the point that no young almond trees are available for purchase until 2016.

Demand for almonds translates into demand for pollination. So every year commercial beekeepers transport some 60% of all US honeybees to California's almond groves in February and March, when it's still winter in most other states. It's one of their biggest challenges.

For one thing, bee colonies, especially those from northern states, lack sufficient time to emerge from their heat-conserving winter clusters. Some beekeepers thus maintain 20,000 to 30,000 hives. Each one requires careful

inspection for diseases and parasites – a meticulous, Herculean task on such a scale.

Complicating the situation, beekeepers are trying to work within a large-scale agricultural system, using an insect whose husbandry practices have changed little since the nineteenth century. The larger the commercial beekeeper's stock, the harder it can be to tend them and recover from financial setbacks in the form of lost bees.

Almond growers will need 1.5 million hives this year, estimates Colorado beekeeper Lyle Johnston. "It takes almost all the commercial bees in the United States," to pollinate the almond crop, he says. The payoff can amount to half an individual keeper's yearly profit.

However, bees can come back from California "loaded with mites and every other disease you can think of," beekeeper Ed Colby explains. That can often mean bee colony deaths. Last year, US beekeepers experienced an average 30% overwinter bee loss; some lost 10% to 15% of their hives, while others lost much more. It's a normal cost of doing business, but it can be painful.

Last year's rate was higher than normal, and higher than any keeper would want. But it was not the "bee-pocalypse" that some news stories claimed. The real story is that efforts to identify a single unifying cause for higher-than-usual losses have failed. Scientists are discovering that multiple issues affect bee health.

Urban, suburban and agricultural "development has reduced natural habitats, clearing out thousands of acres of clover and natural flowers," a 60 Minutes investigative report observed. "Instead, bees are spending week after week on the road, feeding on a single crop, undernourished and overworked."

The migration itself is stressful, notes Glenwood Springs, Colorado Post-Independent reporter Marilyn Gleason. "First, there's the road trip, which isn't exactly natural for bees, and may include freezing cold or scorching heat. Bees ship out of Colorado before the coldest weather, and drivers may drench hot, thirsty bees with water at the truck wash."

The convergence in almond groves of so many commercial bees from all over the country creates a hotbed of viruses and pathogens that can spread to many hives. The varroa destructor mite carries at least 19 different bee viruses and diseases, causing major impacts on bee colonies. Parasitic phorid flies are another problem, and highly contagious infections also pose

significant threats. The intestinal fungus *nosema ceranae*, for example, prevents bees from absorbing nutrition, resulting in starvation.

The tobacco ringspot virus was likewise linked recently to the highly publicized problem known as “colony collapse disorder.” CCD occurs when bees in a colony disappear, leaving behind only a queen and a few workers. The term originally lumped together a variety of such “disappearing” disorders recorded in different locales across hundreds of years, as far back as 950 AD in Ireland. Thankfully, as during past episodes, these unexplained incidents have declined in recent years and, despite all these challenges, overall US honeybee populations and the number of managed colonies have held steady for nearly 20 years.

These days, perhaps the biggest existential threat to bees is campaigns purporting to save them. Extreme-green groups like the Center for Food Safety and Pesticide Action Network of North America are blaming an innovative new class of pesticides called neonicotinoids for both over-winter bee losses and CCD.

Allied with several outspoken beekeepers, the activists are pressuring the Environmental Protection Agency, Canada’s Pest Management Regulatory Agency and government regulatory agencies to follow Europe’s lead – and ban neonics. Instead of protecting bees and beekeepers, however, their campaigns will likely cause greater harm – because they ignore the multiple threats that scientists have identified, and because a neonic ban will result in farmers using pesticides that are more toxic to bees.

The European Union’s political decision to suspend neonic use came because France’s new agriculture minister banned their use. That meant French farmers would be at a distinct disadvantage with the rest of Europe, if they were the only ones unable to use the pesticide, noted British environmental commentator Richard North. They could lose \$278 million per season in lost yields and extra pesticide spraying.

So the French agricultural ministry sought an EU-wide ban on all neonicotinoids. After several votes and a misleading report on the science, the European Commission imposed a ban, over the objections of many other EU members, who note that the evidence clearly demonstrates the new pesticides are safe for bees.

Years-long field tests have found that real-world exposures have no observable effects on bee colonies. Other studies have highlighted other significant insect, fungal, human and other issues that, singly or collectively, could explain CCD. Having analyzed scores of 2007-2012 bee death incidents, Canadian bee experts concluded that “...very few of the serious bee kills involve neonicotinoid pesticides. Five times as many ‘major’ or

‘moderate’ pesticide-related bee kills were sourced to non-neonic chemicals.”

In Canada’s western provinces, almost 20 million acres of 100% neonic-treated canola is pollinated annually by honeybees and tiny alfalfa leaf-cutter bees. Both species thrive on the crop, demonstrating that neonics are not a problem. Large-scale field studies of honeybees at Canadian universities and a bumblebee field study by a UK government agency found no adverse effects on bees.

Last October, a team of industry scientists published a four-year study of the effects of repeated honeybee exposure to neonic-treated corn and rapeseed (canola) pollen and nectar under field conditions in several French provinces. The study found similar mortality, foraging behavior, colony strength and weight, brood development and food storage in colonies exposed to seed-treated crops and in unexposed control colonies. This also indicates low risk to bees.

At least two more major, recently completed university-run field research projects conducted under complex, costly scientific laboratory guidelines (“good lab practices”) are awaiting publication. All indications to date suggest that they too will find no observable adverse effects on bees at field-realistic exposures to neonicotinoids.

Meanwhile Project ApisM., a partnership of agro-businesses and beekeepers, has invested \$2.5 million in research to enhance the health of honeybee colonies. Switzerland-based Syngenta has spent millions expanding bee habitats in Europe and North America, through Project Pollinator. Bayer has built bee health centers in Europe and the United States, and Monsanto’s Beeologics subsidiary is developing technology to fight varroa mites.

None of that matters to the anti-pesticide activists. They are using pressure tactics to make Canada and the United States copy the EU. That would be a huge mistake. Science, not politics, should prevail.



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NORAHG RESPONSE

CRISIS ? WHAT CRISIS ?

There is NO bee crisis in Ontario. According to Ontario Premier Wynne — « *Although large bee die-offs have been observed in Ontario apiaries, they are NOT OCCURRING UNIFORMLY across all operations or areas of the province — many bee-keeping operations HAVE NOT BEEN AFFECTED and have been able to maintain strong and healthy bee colonies as evidenced by hive strength and honey production* ». <http://wp.me/p1jq40-7Mw> There is NO bee crisis in Canada. Only A VERY LIMITED NUMBER of Bee-Keepers report losses, LESS THAN 1 PER CENT. In 2012, a mere 43 Bee-Keepers alleged losses. In 2013, only 82 Bee-Keepers alleged losses. There are 7,000 Bee-Keepers keeping 600,000 colonies of honeybees across Canada. Essentially, a mere 1.0 per cent of all Bee-Keepers are reporting losses. These represent the Anti-Pesticide Lunatic-Bee-Keepers of Canada. Over 99 per cent of all Bee-Keepers are reporting NO losses. 1 per cent of Bee-Keepers appear to HAVE NO IDEA WHAT THEY ARE DOING, leading some observers to conclude that Bee-Keepers may NOT BE COMPETENT TO RAISE BEES. Bee-Keepers KNOW ALMOST NOTHING ABOUT PEST CONTROL PRODUCTS. Bee-Keepers know full well that VARROA MITES are the primary problem associated with bee mortality, and NOT Neonicotinoid Insecticides. Science and statistics DO NOT SUPPORT demands to PROHIBIT against Neonicotinoid Insecticides in agriculture. If we had less pesticide use in the environment, WE WOULD STILL HAVE Bee Colony Collapse Disorder, because MANY BEE-KEEPERS ARE NOT COMPETENT TO MANAGE THEIR HIVES. For the whole truth regarding BEES, go to The Pesticide Truths Web-Site ...

<http://wp.me/p1jq40-6WJ> <http://wp.me/p1jq40-2ba>
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GATHERCOLE AND NORAH G <http://pesticidetruths.com/>
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