What's killing the bees? Pesticides

Posted By Randy Oliver On 6:18 PM 09/02/2013 In Opinion | No Comments

I'm a professional beekeeper and independent research scientist. My sons and I run a 1000-colony beekeeping operation. I talk on a daily basis with beekeepers and researchers around the world. Bees are my life.

I'm also a lifelong environmentalist and organic gardener, coming of age at the time *Silent Spring* was published. So when bee colonies — including my own — started to die at an increased rate in the winter of 2004-5, roughly coinciding with the introduction of the neonicotinoid insecticides, the claim that they were killing off the bees resonated with me. But my scientific training called for me to actually check the facts of the situation.

The first inconvenient truth is that honey bees are not going extinct — colony numbers are actually increasing in both the U.S. and around the world. But it is tougher to keep them alive these days, even in the absence of pesticide exposure, due to novel parasites and declining forage.

Then I visited Ground Zero for neonic use — the American Corn Belt — in which up to two of every three acres of ground are planted with neonic seed-treated corn or soy. To my great surprise, I met many beekeepers who were adamant that current pesticide issues with bees were the least they've ever been! To me, that observation, plus the fact that bees were also thriving on seed-treated canola in Canada, simply did not indicate that the neonics were indeed the cause of today's bee problems. If they were, how could beekeepers in the middle of the most intense applications not be noticing?

As a beekeeper and environmentalist, I have no particular love for pesticides. But the more I investigate pesticide issues and honey bees, the less I feel that they are our number one, or even number two, problem. But that's not to say that they aren't a problem to beekeepers in some areas.

There are occasionally serious bee kills due to the pesticides from the dust involved in the planting of corn (this is a problem which is being intensively worked on) and from the spraying of crops with other pesticides while they are in bloom. And we have long known that some pesticides cause long-term sublethal effects that can result in later colony morbidity or mortality.

So are the neonics making things better, or worse? When I look at the results of the extensive testing for pesticide residues in bee hives, what stands out is that the neonics <u>are seldom found</u>. The independent (meaning trusted by beekeepers) Penn State researchers conclude that the pyrethroid insecticides overall pose <u>far more potential for harm</u> to bees.

So as attractive as the "neonics are causing the extinction of the honey bee" hypothesis is, I simply don't find it to be supported by either the scientific nor on-the-ground evidence. Add to that the fact that no researcher, despite considerable effort in that direction, has ever succeeding in killing colonies of bees by feeding them field-realistic doses of neonicotinoids, even for extended periods of time.

Again, that's not to say that pesticides are not a serious issue to some unfortunate beekeepers. Devastating pesticide spray kills are regrettably all to common, and some agricultural areas are known to beekeepers as death traps.

When I look at the pesticide use in those areas, and at residue analyses of combs, it appears that pesticides other than the neonics are more likely the problem. The evidence to date appears to support the claim that the neonics are indeed "reduced risk insecticides" (with certain caveats regarding planting dust, foliar and drench applications, and landscape use, for which I have some misgivings).

Agricultural pesticides have always been a problem for bees. But things are clearly better these days than in the past. We've phased out the worst pesticides. I can't say with

certainly that the neonicotinoids are better, but when used carefully, they certainly appear to
be an improvement as we transition to even more "friendly" biologicals, new technologies,
and Integrated Pest Management. We've still got a long way to go in protecting pollinators,
but we seem to be moving in the right direction.

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