

**On Nutrition: by Helayne Waldman, Ed.D., N.E.**

## **Why the buzz about the bees?**

I didn't think too much about recent headlines citing declining bee populations until I read this sobering quote from none other than Albert Einstein:

"If the bee disappeared off the surface of the globe then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man."

With that, I sat up and took notice. Like thousands of others, I pored through available articles on the subject, trying to make sense of the rapid and furious onset of "Colony Collapse Disorder."

Something is killing millions of honeybees, putting at stake approximately \$14 billion of American crops, according to a Cornell University study – from oranges in Florida, to pumpkins in Pennsylvania, to almonds in California. In fact, "every third bite we consume in our diet is dependent on a honeybee to pollinate that food," says Zac Browning, Vice President of the American Beekeeping Federation.

Exactly what is killing the honeybees is hard to decipher, as thousands of bees are simply disappearing without a trace. The ones that are found dead in their hives appear to be harboring evidence of nearly every disease that has afflicted bees for the past century – almost as if the infected bees, like AIDS sufferers, have suffered a total breakdown of their immune systems.



Theories about the disappearing honeybees abound, but two suspects keep cropping up.

Dave Hackenberg, a beekeeper leading the drive to publicize the issue strongly believes that new varieties of nicotine-based pesticides are at fault. "It may be that the honeybee has become the victim of these insecticides that are meant for other pests," he said. "If we don't figure this out real quick, it's going to wipe out our food supply."

Others claim that this new breed of pesticide known as neonicotinoids, don't kill the bees per se, but disrupt their sense of orientation, leaving them incapable of finding their way back home to their hives.

And the crisis does not appear to be limited to the U.S. Alarm bells are sounding in Germany, Great Britain and other European countries -- even from Brazil in South America.

Could it be that the honeybees are eating something that is weakening them enough to allow parasites to gain entry? Hans Hinrich Kaatz, a professor at the University of Halle in Eastern Germany suspects so. He directed a study that concluded

in 2004 in which scientists looked at the effects of pollen on bees from a type of genetically modified crop known as "Bt corn". Although there was no apparent effect immediately in the experimental bees, there was an odd delayed effect. When those same bees were later infested with a parasite, "a significantly stronger decline in the number of bees occurred," according to Kaatz and his colleagues.

Fascinated by this finding, I searched for some corroborating data. Fortunately I was able to quickly find additional information, originally published in 2005 in the journal Ecological Applications, and cited recently by the Organic Consumer's Association ([http://www.organicconsumers.org/articles/article\\_3665.cfm](http://www.organicconsumers.org/articles/article_3665.cfm)).

It turns out, that after counting thousands of bees who feasted on organic crops, conventional crops or GM crops, "there was no pollination deficit in organic fields, a moderate pollination deficit in conventional fields, and the greatest pollination deficit in GM fields."

The issue is now on the front burner. "The planting of transgenic corn and soybean has increased exponentially", according to a recent article in the San Francisco Chronicle. Pick up most any packaged food in your local supermarket, and it is apt to be laced with GM corn or soybeans, or their by products, making you and me part of a momentous experiment.

Scientists and consumers worldwide must now ponder the same questions: are genetically modified crops safe for bees to eat? How about humans and other animals? Aside from their potential effects on our own health, what can we expect for the health of the ecosystem that sustains us?

Perhaps we should revisit the visionary wisdom of Albert Einstein. Better still, perhaps we should pay careful attention and learn from the bees.

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