Reverse the decline of honeybees

By Reese Halter

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Over the past three years, more than 50 billion honeybees have died. Scientists understand the causes and now we need everyone to lend a helping hand.

The humble honeybee has been inextricably linked to humankind since prehistoric times.

At first we were drawn to this remarkable creature because of its sweet honey. Honey is to a bee what electricity is for humans – energy. One teaspoon of honey weighing 21 grams contains 16 grams of sugar, or 60 calories, and it took 12 bees their entire foraging lives, combined flying time of about 6,000 miles, to produce those 21 grams.

To understand the importance of honeybees, consider that every third bite on your plate is a result of their primary role on the planet as pollinators – the most important group on Earth.

Honeybees contribute at least $44 billion a year to the U.S economy, pollinating crops like almonds, apples, avocados, blueberries, broccoli, canola, carrot seeds, cherries, citrus, cranberries, cucumbers, grapes, lettuce, macadamias, melons, peaches, plums, pumpkins, onion seeds, squash, sunflowers, kiwis, tomatoes and zucchinis. Then there are alfalfa and clover for beef and dairy industries, cotton for our clothes, as well as honey, candles and medicines.

Bees have been on the planet for more than 100 million years, or about 14 times longer than the first human progenitor. Bees have a memory; they vote, are being trained to count and are helping people as an early detector of disease by sniffing skin and lung cancers, diabetes and tuberculosis.

The Red Cross estimates there are 80 million to 120 million land mines in 70 countries and 40,000 new land mines are being deployed weekly. Each year, these brutal weapons of destruction maim tens of thousands of children. Researchers from the University of Montana are using bees to find TNT residue – the primary ingredients in land mines – while conducting surveys many miles away from the hive.

Many blue chip corporations depend on honeybees for some of their products, including General Mills, Häagen-Dazs, Starbucks and Burt's Bees, a specialty personal care company with more than 150 products.

A combination of factors has collided to create the perfect storm responsible for memory loss, appetite loss and autoimmune system collapse resulting in the rapid decline in honeybee populations worldwide.

Each year 5 billion pounds of pesticides are applied globally. Many of them are neonicitinoids, a nerve poison that prevents acetylcholine from allowing neurons to communicate with each other and muscle tissue. In humans, it would trigger Parkinson's and Alzheimer's.

Imidacloprid, one form of neonicitinoids, has killed millions of bees and been restricted or banned in several nations, yet it's still used widely throughout the United States..

In 2008, researchers from Penn State found 43 different pesticides in a Pennsylvania apple orchard. Many farmers combine or stack their chemicals to reduce applications costs. Stacking chemicals, however, is known to increase toxicity levels – in some cases by 1,000-fold.

Research from Europe showed that bees exposed to electromagnetic radiation from cellular towers made 21 percent less honeycomb. It also showed that 36 percent of bees taken a half-mile from the hive were unsuccessfully able to navigate home.

In 2006, the honeybee genome was decoded and the genetics revealed only half as many genes for detoxification and immunity compared to other known insects. Scientists found specific "good" bacteria inside their stomachs and intestines crucial for fighting pathogens and digesting the silica casing around each pollen grain, providing access to its protein.

Bees evolved to feed on a wide assortment of pollens, but today we use them in monoculture fields. Pollens provide their only source of protein. Proteins grow eggs, larvae, brains and autoimmune systems.

The abnormally high temperatures of 2006 were likely the tipping point for bees in North America. The searing springtime temperatures during the onset of flowering are believed to have caused sterile pollen in many plants. Sterile pollen produces little if any protein.

In 2007, almond, plum, kiwi and cherry pollen that were tested exhibited little if any protein content. Infertile soils lacking essential nutrients, bacteria, fungi, protozoa along with climate change were implicated.

Beekeepers around the globe are now feeding their hives a form of a protein shake with eggs, brewers yeast, pollen and honey and other special ingredients.

Clearly, agriculture must reduce the levels of toxicity from pesticides, herbicide and miticides, globally.

There is hope on the horizon with the fast growth of organics in the United States. First Lady Michele

Obama has an organic garden on the White House lawn with two honeybee hives close by.

Each of us can help by purchasing organic foods and cottons, and supporting local beekeepers by buying organic honey. Do not use herbicides, pesticides or miticides in your yard. Plant a wide variety of native yellow and blue flowers and participate by helping scientists in the U.S. National Phenology Network (www.usanpn.org).

Without the bees, we cannot survive.

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