

OPEN *Environment*

THE BUZZ ON BEES

by Cindy Matthews



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We have all heard the expressions: "busy as a bee," "no bees, no honey" or "that's a honey of a deal." Bees and their byproducts have become such an integral part of our lives that, over time, we have developed "bee-speak" and incorporated it as part of our common language. What would happen if one day we awoke and all of the bees had suddenly buzzed off?

Todd A. Yakimishen, Vice-President of OAKNOOK Honey Products Ltd., Manitoba, claims that bees are the world's best pollinators. According to Yakimishen, they are so efficient at pollinating that industries have sprung up across North America to service agricultural demand. Today, large western seed companies contract and hire beekeepers' bees to pollinate crops to increase plant yields. Allen Garr, President of the Richmond, BC Beekeepers Association, states that, "bees are the mechanisms by which plants reproduce. Honey is just a pleasant by product that man has used for thousands of years as a natural sweetener and a product with medicinal qualities."

Bees are big business in the agriculture industry. To indicate the role that bees play in our food supply, it is estimated that up to one third of the food on an average dinner plate is directly related to the industrious bees.

What's the buzz on declining bee populations?

Bee stocks continue to decline and experts now speculate about the causes, citing viruses, mites, air pollution or a combination of all three. Some postulate that antibiotics are to blame—too much, not enough, not the right kind—while others fault bee-resistant drugs.

When hives are moved for contract pollination purposes, bees can become stressed. Confinement, temperature fluctuations and even the transport truck's jarring movements can create a stressful environment for the bees. Garr states that populations were down by a staggering 35 per cent in 2008 and as much as 30 per cent in 2007 and he blames the parasitic varroa mite for the decline. The mites attack the bees thereby weakening their immune systems so that other diseases can invade the host body.

Some theorists speculate that the chemicals beekeepers use to help the hives could actually have negative implications on the fertility of the queen bee and may alter worker bee behavior according to Garr. He adds that we should not discount our harsher winters, cooler, wet springs and extended rainy summers as factors that affect the health of a hive.

It is a little known fact that bees can have an alcohol problem! Ethanol is naturally produced when organic materials



ferment. Unfortunately for bees, they can get drunk on the ethanol resulting in toxic nectar and sick humans. Scientists in the 19th century observed intoxicated bees and noted that they spent less time flying, stuck their tongues out more and spent too much time on their backs, wiggling their legs. They were also prone to flying accidents. Similar to intoxicated humans, bees become lost, disoriented and are at risk of death.

It also appears that bee colony reduction or Colony Collapse Disorder (CCD), is quickly becoming a global issue with France, the United States and Romania all experiencing declining bee populations. Yakimishen says Chile and Australia are also reporting a decline in bee populations. Closer to home, Niagara, Ottawa, Durham and Haldimand-Norfolk regions of Ontario have also experienced significantly weakened bee populations. (http://www.uoguelph.ca/news/2007/10/u_of_g_research_13.html)

Interestingly, researchers have identified a sharp decline in hive worker bees. They are finding unattended hives with only the queen remaining with her capped brood. This is unusual since normal bee behavior encompasses the worker bees being present and attendant throughout the lifecycle of the brood. At the same time, researchers are discovering that bee food stores remain undisturbed in the hive.

Our culture is reliant on bees for food production, medicines and food products. Over 70 per cent of the world's plants, and a significant portion of what we eat, rely on bees naturally pollinating plants. Dr. Laurence Packer of the University of Guelph agrees, "If the honeybee were to disappear, we'd be in trouble." While plants native to Canada do not require honey bee pollination, bees are needed to pollinate peach, pear and apple trees. Cucumbers and cantaloupes as well as strawberries, blueberries and raspberries also benefit from bee pollination.

A Honey of an Ideal

The Hergotts, owners of the Hergott Cider Mill in southwestern Ontario, believe public education programs are the answer. They think that with more education, people's attitudes and interest in CCD will help to bring attention to the issue. The Hergotts claim that there are many ways in which people can help to reverse the effects of CCD in their communities. They explain that dandelions are one of the first pollen/nectar crops available to the bees in the spring. Yet, people continue to spray pesticides, mow them and pull dandelions out of their yards. Thistles and burdocks, valuable nectar producing plants, are often cut down during the summer and goldenrod, one of the last great pollen/nectar plants in the fall, is also helpful to bee populations. Instead, we should choose to grow plants that attract bees: lavender, bluebells, trumpet vine, thyme, cone flowers, cosmos, coreopsis, violets, rosemary, sunflowers and clover.

Environmental biologists at the University of Guelph have designed "Feedbee," a registered pollen replacement product that helps to keep bee colonies healthy when natural food sources are scarce. According to the scientists, the product doubles honey production and produces more bees. So far, the substitute bee food is a hit with bee colonies in Spain, Iran, Brazil, Canada, Australia and the United States. (http://www.uoguelph.ca/news/2005/07/bees_abuzz_for.html)

Gerrie Hergott loves to talk about the positive impact of the honey bee and finds that the general aversion to bees and wasps is changing due to an increased awareness of their current decline.

What can you do? Take a tour of an orchard. Value bees' contributions to your environment and food supply. Go outside and plant bee-attracting flowers or flowering trees in your yard this spring and, as you lean back in the tub, sipping a cup of tea with honey after all of your hard labour, remember this proverb: "Bless the flowers and the weeds, my birds and bees," and thank your local beekeeper for his honey. ✦



Photo by Robert Nolan