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The Vanishing of the Bees

A film that gets to the bottom of the mystery of the disappearing bees with some success

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[The Vanishing of the Bees](#) [1] is the cinematic equivalent of “*Watch with Mother*” about the importance to the planet of the honeybee. It patiently unravels the mysterious Colony Collapse Disorder (CCD) implicated in the mass disappearance of honeybees from their hives across the world. Bees have one of the most important jobs in nature. Without their busy pollination of plants and flowers we would lose one in every three bites of the food that we eat.

What you need to know about bees

The UK bee economy is worth £165 million annually [3]. The British Beekeeping Association (BBKA) estimates that it would require 30 million humans to take over the job of pollinating British crops. DEFRA (The UK Department of Food and Rural Affairs) claim that CCD has not yet hit the UK . However the BBKA's survey says that thirty three percent or one in three of the UK 's 240 000 beehives were lost in the winter and spring of 2008. This compares to a previous annual average of five to ten percent losses.

Buglife - The English Conservation Trust - has published a report which says that neonicotinoids (neuro-active insecticides related to nicotine) do damage honeybee health. Buglife, ISIS, The Soil Association and The Pesticides Action Network (PAN) have called for a suspension of all products containing neonicotinoids in outdoor environments [4].

Worldwide bees pollinate some ninety commercial crops including fruits, vegetables and alfalfa, a major food source for cattle. In China , in the province of Sichuan, pear trees have been pollinated by hand after the overuse of pesticides in the 1980's wiped out the honeybee population. In the USA approximately one third of hives have collapsed over the last five years. These losses are attributed to CCD and account for the loss of around 800 000 colonies in 2007 and a staggering

“Promoting natural and sustainable healthcare through the use of good science and good law”

one million colonies in 2008. A Steering Committee has been set up to monitor the progress of CCD in the USA [5]. Bee losses have also been reported around the world in Argentina, Brazil, France, Italy, Germany, Greece and Spain.

Bees are big business, and their industry, worth billions of dollars, is teetering on the brink of collapse. In the USA, commercial beekeepers transport hives around the country so that the bees can pollinate apples, blueberries, cranberries, raspberries, oranges and pumpkins. The annual Californian almond bloom demands almost all the commercial bees to pollinate the nut harvest.

The former president of the US Bee Keepers Federation, David Hackenberg, was the first to blow the whistle on the shocking loss of 60% of commercial bee hives in America since 2006 and says that since CCD has decimated the native bee population, the importation of bees from Australia to pollinate food crops has become the norm.

The prime suspect in CCD is the introduction of a relatively new class of pesticides called neonicotinoids [6]. Neonicotinoids are systemic pesticides that remain in the leaves, pollen and nectar throughout the plants lifecycle. The link to CCD was first noticed in France where honeybee losses were observed and honey production dropped from 40 000 to 25 000 tons between the years 1995-2001. These events occurred after a particular neonicotinoid called imidacloprid was applied as a seed dressing to sunflower crops [7].

Big Pharma plays a big part in bee decline

Bayer CropScience, the manufacturer of neonicotinoids with silly names such as “Gaucho” and “Poncho” say that imidacloprid is safe. Despite this, Gaucho is now banned in Italy, France, Germany and Slovenia, but not in the USA, Canada, or the UK. In 2008, the American Beekeepers Federation officially refuted bad beekeeping practices being blamed for the decline of the honeybee by bringing a civil law suit against Bayer, which is still ongoing.

They are not alone. A German organisation called Coalition Against Bayer Dangers is suing the company for marketing dangerous pesticides and thereby causing the mass death of bees all over the world [8]. An annual turnover of nearly 800 million Euros makes neonicotinoids one of Bayer's most important products. "*This is the reason why Bayer, despite serious environmental damage, is fighting against any prohibitions,*" says Coalition spokesman Philipp Mimkes.

Bayer AG, the parent company of Bayer CropScience is responsible for the development of the drug heroin (diacetylmorphine) which was sold as an over the counter cough medicine under the Bayer trademark up until World War I [9].

Concern about the relationship between the chemical corporations and the environmental agencies is described in the film as, "*The fox guarding the hen house.*" For example, the only scientific research submitted to the US Environmental Protection Agency (EPA) on the safety of neonicotinoid sprays was done by Bayer's own toxicologist. This research took the form of a three day trial of imidacloprid, which was fed to the bees in a sugar solution. No tests were required on the bee brood in its developmental stage, or on the pollen, or on honey, and the results of the feeding trial were revealed at Bayer's discretion.

Plenty of pesticides inside CCD beehives

However, a raft of independent scientific studies done by Maryann Frazier at the Penn State University on samples taken from beehives with CCD found that the bees were exposed to as many as 46 different pesticides [10]. Further tests done at Penn on 108 pollen samples revealed an average of 5 pesticides and as many as 17 pesticides per pollen sample. This accumulation of toxins is caused by a complex synergy of pesticides, fungicides and herbicides which, combined with the industrial agricultural practice of monocultures, spells disaster for bees. Monocultures affect the amount and diversity of food available to bees, and pesticides interfere with their ability to navigate home to the hive.

This film makes explicit connections between the chemical companies that supplied the nerve gases designed to maim and kill soldiers during both World Wars and the pesticides developed from them that cause sub-lethal damage to insects in agriculture today. In addition, frightening archive footage shows the busy streets of San Antonio in Texas blanket sprayed with thick clouds of DDT to combat a polio epidemic in 1946. This spraying was part of a wider advertising campaign by the chemical industry that showed cartoon children, farmyard animals, domestic pets, fruits and vegetables singing *"DDT is good for me-e-e!"*



We also see the strange practice of decapitating the queen bees in commercial hives and replacing them with a surrogate queen that has been artificially inseminated. This new queen is introduced gradually to the hive and is supposed to keep production levels high. A subsidiary of another big chemical company called Syngenta Bioline has recently funded research into breeding bees in captivity instead of looking for damage caused by pesticides [11]. Expanding the commercialisation of factory farmed bees pose a variety of risks to wild bees. Son Tufnell, head of the Strategic Communications Team of the UK Chemicals Regulations Directorate, says that the findings of an investigation by The National Bee Unit revealed that most significant threat to the health or mortality of bees is the nosema parasite which is implicated in CCD [12].

Bees and genetically engineered plants

An investigation of honeybee colonies infected with the parasite nosema [13] and fed with Monsanto's GM maize MON810 pollen collapsed much earlier than bee colonies fed with conventional maize pollen did [12]. A further concern was that when microorganisms were

cultivated with the GM pollen it was found that those microorganisms had taken up the pat gene. In other words, that horizontal gene transfer had occurred [14]. That is something the pro-GM lobby swear could never happen. The lead researcher in the honeybee study Prof Dr Hans-Hinrich Kaatz of the University of Halle-Wittenburg was later informed by a German TV Company ZDF that someone at Monsanto had told them his research article on MON810 pollen submitted to *Nature* had been rejected. This raises questions of bias in favour of the chemical industry on the part of the mainstream journal as well as regulatory bodies responsible for protecting public health.

More recently, and worryingly, Monsanto has bought up bought Beelogs, one of the world largest research centres for bee health, stating their mission is, *“to become the guardian of bee health worldwide.”*

According to David Taylor, UK Labour and Co-operative MP for North West Leicestershire an American scientific report on Syngenta's neonicotinoid pesticide, thiamexotham, shows that it is deadly to honeybees. Therefore, he asked Dan Norris the Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs the following question: *“Does the Minister think that the Warwick university research into bee and pollinator morbidity, which is being funded by Syngenta, will have sufficiently wide terms of reference to assess any links that exist between neonicotinoids and the collapse of UK bee colonies?”*. Dan Norris gave this rather furtive answer in response to Taylor 's question during oral questions on Environment, Food and Rural Affairs, 29 October 2009 [15]: *“There is no evidence that authorised pesticides pose an unacceptable risk. However, I understand why my Honorable Friend asks his question: where somebody is paying, one questions whether the research will be reflective of scientific rigour or not.”*

Three early day motions (EDM 1267, 1284, 2664) in the UK Parliament on pesticide use and honey bee health have subsequently been tabled and signed by MPs led by Martin Caton MP, but have so far brokered no Government action on banning neonicotinoids and other harmful pesticides.

Listen to what the bee knows

The Vanishing of the Bees warns that if our favourite foods and flowers such as broccoli, cherries, onions, melons, cucumbers and sunflowers do not get pollinated our diets will consist of lots of rice, wheat and corn, which coincidentally are the main crops that Bayer and Syngenta have huge financial stakes in. It can be no coincidence that the commercial bee keepers who isolated their hives from the crops being sprayed with chemicals have reported no bee losses. Similarly, the organic and biodynamic beekeepers who work on diversified systems of food production and improving the immune systems of their bees have not suffered CCD in their hives.

What the honeybee knows is how to live successfully on the planet for 20 million years before the arrival of humans up until this point in time. Bees are the ultimate selfless workers that have provided mankind with the miracle of honey; the full implications of its contribution to medicine are still emerging [16]. (see [Don't Let Biopiracy Spoil Revitalisation of Indigenous Health Systems/ Honey Beats Superbugs](#)). In addition, the current collapse of world economies and the lost civilizations of history may be mirrored in the complex causes connected to CCD. Therefore, the disappearance of the honeybee carries an important message for humanity as long as we all listen carefully.

How can we humans help?

So how can we humans help the honeybee everyday? Apart from working to ban indiscriminate spraying of pesticides and promoting organic agriculture [17] we can plant native flowers, trees and shrubs in our gardens that are bee friendly. We can learn about beekeeping and get hives going in our own back yards. We can grow, buy and eat food that supports local, organic and small scale agricultural practices and producers. When we take care of the honeybee, we take care of ourselves. Our lives depend on it.

Since the start of 2012 three major studies so far have directly linked pesticides to bee mortality. [18,19,20].

[WATCH THE FILM](#)

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