

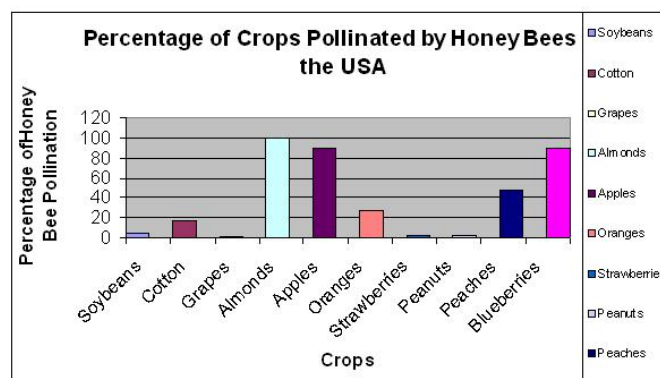
## Solutions for a Sustainable Future

Are mobile phones wiping out our bees? I was recently at a local restaurant in Oberlin, and overheard some professors discussing research that proves that cell phones kill bees. Is this true?



Honey bees (are a subset of bees in the genus *Apis*, primarily distinguished by the production and storage of honey and the construction of nests out of wax. The Honey Bee has played a very specific and important role for well over 1,000,000 years. Honey Bees pollinate flowers, fruits, vegetables, and make honey. Honey Bees are vital to the sustainability of human and animal life because they are able to keep the food chain in balance by maintaining plant life. Fairly recently, there has been an extreme decrease in the Honey Bee population throughout the world. In early 2007, abnormally high die-offs (30-70% of hives) of European honey bee colonies occurred in the U.S. and Québec. Millions of Honey Bees have left their hives and died off without any logical explanation. This epidemic is called Colony Collapse Disorder, or CCD.

Cornell University conducted a study estimating that Honey Bees pollinate more than 14 Billion dollars worth of crops, nuts, seeds, fruits, and vegetables each year. With the large number of bees dying off as a result of Colony Collapse Disorder, the demand for bees to continue this high rate of crop pollination is increasing while the bee population is decreasing, making this even more of a global concern.



**Factoid:** Honey Bees are directly responsible for pollinating a wide variety of crops ranging from fruits to nuts to vegetables. The more the bee population continues to decline, the greater impact it will have on the sustainability of these crops; resulting in a scarcity of food for both humans and other animals. This decline could severely upset the food.

It may seem like a plot of a science fiction film, but some scientists are suggesting that our love of the mobile phone could cause massive food shortages, as the world's harvests fail. They are putting forward the theory that radiation given off by mobile phones and other hi-tech gadgets is a possible answer to the mystery of the abrupt disappearance of the bees. The theory is that radiation from mobile phones interferes with bees' navigation systems, preventing them from finding their way back to their hives. Improbable as it may seem, there is now some evidence to back this theory up. (Note: Does the movie Johnny Mnemonic come to mind)



**Factoid:** There have been a lot of false rumors on the internet that Albert Einstein theorized that if bees disappeared, human kind would only have 4 years to live. Although, Albert Einstein never said that quote he did say this: *"It is evident, therefore, that the dependence of the individual upon society is a fact of nature which cannot be abolished—just as in the case of ants and bees."*

Colony Collapse Disorder (CCD) is evidenced when a hive's inhabitants suddenly disappear, leaving only queens, eggs and a few immature workers. The vanished bees are never found, but thought to die singly far from home. The parasites, wildlife and other bees that normally raid the honey and pollen left behind when a colony dies, refuse to go anywhere near the abandoned hives.

It is still unclear whether cell phones are the cause or this is simply an accelerated phase of the general decline due to more adverse conditions, or a phenomenon. Research has so far failed to determine what causes it, but the weight of evidence is leaning towards CCD being a syndrome rather than a disease as it seems to be caused by a combination of various contributing factors rather than a single pathogen or poison, though the Israel acute paralysis virus has recently emerged as a significant candidate. Recent research has found that an indicator for an impaired protein production is common among all bees affected by CCD. It is conjectured that this virus may influence the genetic material of the ribosomes, which are responsible for protein production of cells.

**Factoid:** In cold climates honey bees stop flying when the temperature drops below about 50 °F and crowd into the central area of the hive to form a "winter cluster". The worker bees huddle around the queen bee at the center of the cluster, shivering in order to keep the center at 81 °. The worker bees rotate through the cluster from the outside to the inside so that no bee gets too cold. The outside edges of the cluster stay at about 46–48 °F. During winter, bees consume their stored honey to produce body heat. The amount of honey consumed during the winter ranges from 30 to 100 lbs.

I am Jim Steigner (Mr. Comfort), and I just wanted you to know. As always please feel free to contact me at [www.mrcomforthvac.com](http://www.mrcomforthvac.com), under the "Ask Mr. Comfort" Section. Thank you, Tom M. from Oberlin, for your question.