To Bee or Not to Bee

Although the average resident might not have noticed, a mysterious and potentially critical phenomenon -- colony collapse disorder or CCD -- has caused a significant loss in bee populations across the United States. CCD is mysterious because the adult bees simply vanish -- without leaving dead bees behind -- creating losses of 30 to 90% in the hives. This phenomenon can happen very rapidly, with previously strong hives lost in a few weeks, sometimes even a few days.

The loss of bees may not seem very relevant only because many people are unaware of the critical role that bees and their pollination play in the production of food. According to the U.S. Department of Agriculture, about one mouthful in three in the diet directly or indirectly benefits from honey bee population. Without bees, the very survival of many fruit, vegetable, and nut crops is in question, including apples, blueberries, almonds, melons, cranberries, and of course, honey. When bees are unable to provide adequate pollination in the ecosystem, the effects are measurable -- increased costs of fruits and vegetables and decreased quality in the produce. Since bee pollination contributes to crop seed production, beef and dairy industries are also indirectly affected.

Colony Collapse Disorder specifically affects one type of bee -- the European honeybee, or apis mellifera. Bumblebees and the other approximately 1,500 species of bee are not threatened, but they are no replacement for the honeybee in terms of its role in crop pollination.

CCD was first identified in the U.S. in the Fall of 2006, when major losses became apparent. According to Tim Schuler, a beekeeper and secretary of the South Jersey Beekeepers Association, there are several classic signs which distinguish CCD -- the mysterious disappearance of the adult bees, a remaining queen and a few workers, increased "brood or immature bees, and reluctance of common pests such as wax moths and hive beetles to enter the affected hives. Mr. Schuler reported that 40 to 45% of bees were lost throughout the Northeast in the winter of 2006, including some local hives. One business close to Harrison Township -- Fruitwood Orchards Honey, located on Route 538 east of Route 77 -- has to this point been spared such CCD losses, according to Anita Hepler, a representative of the business. Ms. Hepler said that their losses have been about 10% annually, an expected figure.

Because CCD has such serious potential effects, many research efforts are being pursued to determine its cause, which is so far unknown. Although widespread bee losses have been reported at various times over the past 100 years, it is unclear if CCD is a recurrence or an entirely new phenomenon. In April, 2007 the U.S. Department of Agriculture's Agricultural Research Service held a CCD Research Workshop with over 80 major bee scientists, industry representatives, and others in an effort to develop both investigatory and response agendas to address the problem. According to the USDA-ARS, it is unlikely that there is a single cause; research is focusing on pathogens, parasites, environmental stresses, and bee management practices. Recently, research has identified one potential causal agent -- the Israeli Acute Paralysis Virus (IAPV) which has been found in 96% of CCD-bee samples. However, these data are correlational and are not considered to be cause-and-effect at present.

There are preventative or at least mitigating steps which can be taken in dealing with CCD. Beekeepers need to focus on improving general honey-bee health and habitat and maintaining good management practices. According to the S.J.B.A.'s Tim Schuler, the general public can help by not using pesticides excessively or indiscriminately, letting dandelions and white dutch clover grow instead of destroying them as weeds, and planting "flowering things" which aid in pollination.

Written by Jeff Summerton, HT Environmental Commission, February, 2008