



Burpee News Service—April 2015 The Burpee Bee & Butterfly Brigade (BBBB) Project

FACT SHEET

The Problem: Colony Collapse Disorder

- Colony Collapse Disorder (CCD) is a syndrome defined as a dead colony with no adult bees, or dead bee bodies but with a live queen and usually honey and immature bees still present. No scientific cause for CCD has been proven.¹
- Beginning in October 2006, beekeepers began reporting 30-90 percent losses in their hives—an unusually high magnitude of loss. The total number of managed honey bee colonies has decreased from 5 million in the 1940s to only 2.5 million today.²
- Researchers estimate nearly one-third of all honey bee colonies in the country have vanished due to CCD.³
- Honey bee pollination directly or indirectly benefits about one mouthful in three of the American diet.⁴
- Scientists studying the disorder believe a combination of factors could be making bees sick, including pesticide exposure, invasive parasitic mites, an inadequate food supply and a new virus that targets bees' immune systems.⁵
- Scientists are exploring five general categories for the cause(s) of CCD:⁶
 - Pathogens—including Nosema, Israeli Acute Paralysis Virus and possibly unknown pathogens. No one pathogen directly correlates with the majority of CCD incidents.
 - Parasites—Varroa mites are often found in colonies affected by CCD.
 - Management stressors such as poor nutrition due to overcrowding, and increased migratory stress by honey bees being transported cross country.
 - Environmental stressors— pollen and nectar scarcity, lack of diversity in nectar and pollen, availability of only pollen/nectar with low nutritional value.
 - Pesticides—accidental exposure to pesticides.
- Researchers have concluded that no one factor is the cause of CCD.



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- What will happen if colonies do not recover?
 - Of the 100 crop species responsible for providing 90 percent of food worldwide, 71 are dependent on bee pollination.⁷
 - Pollination is worth between \$37 billion and \$91 billion, annually.⁸
- The production value of one ton of pollinator-dependent crop is approximately five times higher than one of those crop categories that do not depend on insects.⁹
- Driving forces of pollinator instabilities:¹⁰
 - Habitat degradation
 - Invasive species
 - Chemical drifts from agriculture spraying
 - Biological pathogens introduced to beekeeping activities
 - Diet
 - Colony splitting and selection
 - Increased pathologies
 - Pollution
 - Systemic insecticides
 - Antibiotics and chemicals used against mites in beekeeping activities
 - Transport of managed bee colonies
 - Climate change

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