



Scientific Facts on **Bee health.**

Highlight of international initiatives taken to manage the issue of bee losses.

Source document:
EFSA (2013)

Summary & Details:
GreenFacts

Context - Over the past 10 to 15 years, beekeepers have been reporting unusual weakening of bee numbers and colony losses, particularly in Western Europe and North America.

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This is a faithful summary of the leading report produced in 2013 by the European Food Safety Authority (EFSA):
"Bee health"

The full Digest is available at: <https://www.greenfacts.org/en/bee-losses-causes/>

i This PDF Document is the Level 1 of a GreenFacts Digest. GreenFacts Digests are published in several languages as questions and answers, in a copyrighted user-friendly Three-Level Structure of increasing detail:

- Each question is answered in Level 1 with a short summary.
- These answers are developed in more detail in Level 2.
- Level 3 consists of the Source document, the internationally recognised scientific consensus report which is faithfully summarised in Level 2 and further in Level 1.

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1. Are the causes of bee losses now well identified?

According to the **European Food and Safety Authority (EFSA)** no single cause of declining bee numbers has been identified. However, several possible contributing factors have been suggested:

- intensive agriculture and pesticide use;
- starvation and poor bee nutrition ;
- viruses, attacks by pathogens and invasive species – This includes the Varroa mite (*Varroa destructor*), the Asian hornet (*Vespa velutina*), the small hive beetle *Aethina tumida* and the bee mite *Tropilaelaps* ;
- genetically modified plants;
- environmental changes (e.g. habitat fragmentation and loss).

Similarly, for the **National Stakeholders Conference on Honey Bee Health** in the US (2013) also emphasize that a complex set factors is associated with Colony Collapse Disorder.

The **United Nations Environmental Programme (UNEP)** concluded in a recent report that the available information on the decline of pollinators is not sufficient to demonstrate that there is a worldwide pollinator crisis.

2. Which initiatives are taken by the European Food Safety Authority (EFSA) related to bee losses?

A number of the EFSA's Scientific Panels and Units contribute to this work. Among these initiatives, a report was published **by EFSA on honey bee mortality and the ways that colony losses are monitored in Europe**. It underlined the general weakness of the surveillance systems in the 24 countries investigated. In 2012, EFSA also published a report from a task force which made recommendations on how this work should be undertaken, and a major **guidance document on the risk assessment** of pesticides in relation bees.

The same year, **an EFSA Scientific Colloquium on holistic approaches to the risk assessment** of multiple stressors in bees convened in response to the growing consensus among scientists about the multifactorial origins of bee colony losses. In 2013 EFSA published risk **assessments of the potential effects on bees of the pesticides thiamethoxam, imidacloprid, clothianidin and fipronil**, showing that a risk for bees from exposure to these substances could not be ruled out.

A recent qualitative assessment of the ongoing projects (March 2014) showed that there were still important gaps in research in Europe, mainly on the joint effect of multiple factors, and on other species of bees than the honeybee. The assessment also noted that projects on in-hive treatments and on the exposure of bees to chemicals were also scarce, as were those focusing on protection goals, bee diversity and pollination services. This report presents a new set of recommendations for future scientific work.

3. What is done at the European Union level about the issue of bee losses?

In the end of 2010, a Communication from the European Commission on honeybee health [see http://ec.europa.eu/food/animal/liveanimals/bees/docs/honeybee_health_communication_en.pdf] provided a series of specific actions that will help better understand the reasons behind the worldwide issue of high bee mortality covering EU animal health framework for bees, the availability of veterinary medicines for bees, residues in honey and food safety aspects, pesticides and genetically modified organisms (GMOs). It covered also the research projects made in the EU on bee health and the protection of bees: including sustainable honey production, pathogen transmission and synergic interactions between pathogens and pesticides at individual and colony levels, varroa resistance or diagnostic tools to detect fungi parasites and honey bee activity.

In 2013, the use of three pesticides, *thiamethoxam*, *imidacloprid*, and *clothianidin* was restricted for a period of two years in the EU.

4. What are the actions taken in the U.S. related to bee losses?

In the US, a multi State research committee on bees health coordinates research that is relevant to bee colony health. Committee members work closely with other stakeholders to develop strategies to unravel the causes of CCD and other significant bee health problems. In 2013, a comprehensive scientific report on honey bee health was published by the U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA). It recognized in particular the parasitic *Varroa* mite as the major factor underlying colony loss in the U.S. and other countries and that Increased genetic diversity and improved nutrition is needed among honey bee colonies. It also underlined the need for improved collaboration and information sharing on best management.

5. Is the issue of bee losses also managed at a worldwide scale?

The UNEP report of pollinators recommended a renewed focus on the study, conservation and management of native pollinating species to complement the managed colony tradition. It presented also the main policies in place that serve as guiding governance, and highlights some scientific network and transcontinental collaborations.

6. What is done to find medicines to treat and protect bees?

In 2006, the **UN Food and Agriculture Organization** (FAO) issued a practical guide describing the common diseases and pests of honey bees. It provides a guide to the basic technology available to beekeepers. More recently, the **European Medicines Agency** (EMA) published in March 2010 the minutes of a workshop on the availability of medicines for bees in Europe, in particular what medicines are needed and what the Agency can do to increase the availability of needed medicines. Among the overall conclusions the participants recommended a strategy that should identify for each bee disease whether medication was appropriate, and if medication is the choice of treatment, which medication should be applied as well as the conditions for the appropriate action or treatment be clarified. More specifically, in the UK, **the Department for Environment, Food and Rural Affairs (Defra)** has an *Action Plan on the Availability of Medicines for Bees*.