



Background information

Bee safety and Colony Collapse Disorder

No evidence could be found for a causal link between pesticides and the disappearance of bees

Monheim, February 12, 2010 – Since autumn 2006, beekeepers in the USA have been reporting mysterious mass deaths of honeybees. The observed symptoms cannot be assigned to any particular cause or any particular pathogens. There is no scientifically based evidence that individual pesticides are to blame when correctly applied. When colonies collapse, they are abandoned within a short period of time by the adult bees, which leave their hives to die. The few bees remaining behind have revealed an unusual spectrum of bacterial and viral infections, parasite infestation and fungal diseases. For this phenomenon US bee researchers have coined the term Colony Collapse Disorder (CCD).

Only about 26 percent of the cases of higher bee mortality reported in the USA in 2009 are connected with this phenomenon. In 2009, beekeepers ranked CCD only in eighth place among the suspected causes of bee deaths, with pesticides well behind in ninth place. CCD occurred very much less frequently in the winter of 2008/09 than in the years before.

A working group run by researchers at Pennsylvania State University, including representatives of the Federal agricultural ministries, the USDA and a number of countries are currently investigating a wide variety of potential causes for the disorder. A number of possibilities and combination of different factors are being discussed, including unusual climatic conditions in several US states (dry weather), parasites such as the Varroa mite, fungal diseases, poisoning, new and as yet unknown pathogens, unsatisfactory beekeeping practices or pesticide action. First research results published in the Science Magazine September 7, 2007 indicated that a virus

(Israeli acute paralysis virus, IAPV) is implicated. This virus may have been introduced into the USA through the import of queen bees from Australia.

Most recently in August 2009 a new study published in the Proceedings of the National Academy of Sciences under leadership of Prof. May Berenbaum, University of Illinois, showed that bees may be dying not from a single toxin but rather from an assault directed by a collection of pathogens and multiple viruses. The researchers discovered unusually large amounts of ribosomal RNA fragments in the guts of CCD bees. It is thought that pathogens from the family of picorna viruses occupy the ribosomes (the protein factories in the cells) and force them to form viral proteins. The picorna virus family includes the deformed wing virus and the Israeli acute paralysis virus.

Another factor under investigation is stress promoted by the particular conditions of beekeeping in the USA. In the USA, bees are kept on a more or less industrial scale for the pollination of enormous almond, citrus or blueberry plantations. For this purpose, countless thousands of colonies are transported every year from one coast to the other in trucks or by air.

However, scientists in the USA agreed up to now that there is not only one single cause for the disappearance of the bees – a wide variety of factors must be responsible for CCD.

A new scientific study performed by the French food safety authority AFSSA has also made it very clear that a multitude of factors is responsible for the continuing bee mortality in parts of France.

Research and development into measures for the protection of bees and improvements in bee health are a highly complex issue, and not only in the USA. All such measures need to be subjected to detailed analyses of the impact they have on other areas, for example, on the protection of harvests against crop pests, or on the yield situation in agricultural food production. The insistence of a number of pressure groups on doing without pesticides is not a realistic alternative in this highly complex interplay of cause and effect.

Decisions taken today without the necessary far-sightedness or the necessary factual bases usually prove to be wrong in the future. Sustainable solutions can be found only

by taking all the facts into consideration and by carefully weighing up the acceptable risks.

About Bayer CropScience

Bayer is a global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. Bayer CropScience AG, a subsidiary of Bayer AG with annual sales of about EUR 6.4 billion (2008), is one of the world's leading innovative crop science companies in the areas of crop protection, non-agricultural pest control, seeds and traits. The company offers an outstanding range of products and extensive service backup for modern, sustainable agriculture and for non-agricultural applications. Bayer CropScience has a global workforce of about 18,000 and is represented in more than 120 countries. This and further news is available at: www.bayercropscience.com.

Contact:

Dr. Hermann-Josef Baaken, Tel.: +49 2173 38-5598

E-mail: Hermann-josef.baaken@bayercropscience.com

Forward-Looking Statements

This news release may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those described by Bayer in published reports. These reports are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.