

EFSA and bees

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The European Food Safety Authority EFSA

EFSA has a number of panels. The Panel on Plant Protection Products and their Residues (PPR) is about plant protection products. It deals with three different types of questions:

1. Questions from the EFSA (related to the assessment of compounds)
2. Questions from the Panel (self tasking)
3. Questions from the European Commission

About EFSA and bees

The centrepiece of the Authority's work in this area is a guidance document on the risk assessment of plant protection products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees), which will be published this year 2012 (see attachment below). EFSA's advice was requested by the European Commission in 2011 after members of the European Parliament and beekeeper associations voiced concerns about the appropriateness of the current risk assessment scheme. The guidance will be preceded by another important document: an opinion on the science behind the development of a risk assessment of plant protection products on bees, which will be completed by the end of April of 2012.

Terms of reference

EFSA has received a request about the risks of plant protection products and bees. After consultation with DG SANCO it was proposed to define the term of reference as follows:

- A scientific opinion of the PPR Panel on the science behind the development of a risk assessment of plant protection products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees) and a guidance of EFSA on the risk assessment of plant protection products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees)

Issues to be assessed

The assessment of the acute and chronic effects of plant protection products on bees, including colony survival and development;

- The estimation of the long term effects due to exposure to low concentrations;
- The development of a methodology to take account of cumulative and synergistic effects;
- The evaluation of the existing validated test protocols and the possible need to develop new protocols, especially to take account of exposure of bees to pesticides through nectar and pollen.

Working group members

- Gérard Arnold, National Center of Scientific Research, France.
- Jos Boesten, Alterra, The Netherlands
- James Cresswell, University of Exeter, United Kingdom
- Andy Hart, Food and Environment Research Agency, United Kingdom
- Robert Luttik, National Institute of Public health and the Environment, NL (chairman)
- Jens Pistorius, Julius Kühn Institute, Germany
- Fabio Sgolastra, University of Bologna, Italy
- Noa Simon Delso, Centre Apicole de Recherche et Information, Belgium

- Walter Steurbaut, Ghent University, Belgium
- Helen Thompson, Food and Environment Research Agency, UK
- Perhaps in the future as hearing expert:
- Ann Alix, Dow Chemical, UK

More EFSA involvement in bees

EFSA's Pesticides Panel has also commissioned a literature review on topics of relevance to the revision of the guidance documents on aquatic and terrestrial ecotoxicology. In respect to bees, an overview of available scientific information on interactions between pesticides and other factors was requested and should be made available by mid-2012.

References

More information and news on: www.efsa.europa.eu and www.efsa.europa.eu/en/press/news.
 At the moment of finalizing the symposium proceedings for printing, EFSA published the results of its review on its website, as cited below: Pesticides and bee health: EFSA reviews the science News Story - 23 May 2012

EFSA has published a state-of-the-art scientific review of the risks posed by pesticides to honey bees, bumble bees and solitary bees. This major piece of work will support the development of specific guidance for the assessment of possible risks to bees from the use of plant protection products. The guidance will provide up-to-date advice to those involved in the evaluation of plant protection products and their active substances, including industry and public authorities.

The opinion published today on the science that will underpin the guidance was requested by the European Commission and responds to growing concerns among MFs and beekeeper associations about the appropriateness of the current risk assessment scheme. It is also part of EFSA's coordinated response to the decline in the numbers of honeybees, wild bees and other pollinators in Europe.

EFSA's Panel on Plant Protection Products and their Residues (PPR) started from the premise that to develop robust environmental risk assessment procedures, it is crucial to know what to protect, where and over what period. The Panel noted that bees play a valuable role as pollinators, contribute to biodiversity and provide hive products such as honey and royal jelly (for honey bees). The scientific experts then looked in detail at four key areas, as suggested by the European Commission:

- the acute and chronic effects of pesticides on bees, particularly colony survival and development
- how to estimate the long-term effects of exposure to low concentrations
- the need to take into account the cumulative and combined effects of different pesticides
- existing test protocols and possible new protocols that take account of the exposure of bees to pesticides through nectar and pollen.

The document proposes two separate assessment schemes: one for honey bees, and one for bumble bees and solitary bees. In the initial stage it is suggested to include toxicity testing that covers an exposure period of seven to ten days for adult bees and larvae. Both life stages can involve exposure of longer than one day, a risk that is not covered by standard tests.

EFSA's pesticides experts also recommend improvements to existing laboratory, semi-field (cages, tunnels and tents) and field testing procedures. Several exposure routes (intermittent and prolonged exposure of adult bees, exposure through inhalation and the exposure of larvae) are not currently evaluated in laboratory tests, and the effects of "sub-lethal" doses of pesticides are not covered fully. In field and semi-field testing, the experts identify several weaknesses that lead to uncertainties in the actual exposure of honeybees. They highlight the need to improve the methods for detecting bee mortality, the observation of sub-lethal effects and the statistical analysis of test results.

The use of pesticides is cited widely as one of the possible contributing factors to the decline in bee numbers in some parts of the world – along with other factors such as disease, parasites, climate change and other environmental factors, and the effects of genetically modified organisms. This decline is causing concern because bees, particularly honey bees, play an important role in the pollination of a wide range of crops and wild plants. It is estimated that the production of about 80% of the 264 crop species cultivated in the European Union depends directly on insect pollinators, mostly bees, and the global annual monetary value of pollination is estimated to be in the range of billions of dollars.

Given the importance of bees in the ecosystem and the food chain and given the multiple services they provide to humans, their protection is essential. EFSA has an important role to play in ensuring the survival of bees given the Authority's mandate to improve EU food safety, safeguard animal health and welfare and ensure a high level of consumer protection.

EFSA's scientific experts are currently developing a dedicated and co-ordinated work programme related to bees in the areas of pesticides, animal and plant health, and genetically modified organisms. The Authority is also carrying out a gap analysis for risk assessment and data collection and will identify areas for further research. EFSA's pesticide experts are also preparing a statement on two articles published recently in the journal *Science* which suggest links between neonicotinoids and bee colony survival.

Scientific Opinion on the science behind the development of a risk assessment of Plant Protection Products on bees (*Apis mellifera*, *Bombus* spp. and solitary bees).