

## Pollinators, pesticides and agriculture: developing regulatory tools for the future

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DOI: 10.5073/jka.2012.437.005

### Abstract

Modern crop management practices have progressively been implemented which have allowed for an increase in agricultural productivity. However, these practices have also led to a reduction in biodiversity and ecosystem functioning. Many plant species are dependent on pollinators for reproduction, and pollinators have a key role in maintaining biological diversity and ecosystem functioning, as illustrated by the estimated 450 crop species that globally depend on pollination by bees and other insects. Because of this particular attention has been given to pollinators in the regulations implemented in many countries to accompany the placing of pesticides on the market. In Europe, for example, Regulation 1107/2009/EC, requires a demonstration of both acceptable risks to human health and the environment as well as demonstration of their efficacy on the target pests to be controlled.

Recent developments in risk assessment procedures for honey bees have been possible via the input of three working groups of ICPBR on (i) semi-field and field testing, (ii) testing on larvae and (iii) risks associated with systemic products. This work has led to the update of EPPD documents relating to pesticides testing and risk assessment for bees. The recent SETAC Pellston workshop has, in addition to a comprehensive review of knowledge, raised the question of protection of non-Apis bee pollinators and over recent years there has been an additional focus on the potential risk posed to bees due to PPP's used as seeding coatings. To address this, a dedicated workshop on treated seeds was held in Paris this year to progress the areas of risk assessment and risk management at the EU level. All these developments and initiatives feed the activities of the OECD PEIP working group who are in charge of identifying and developing testing guidelines that could be needed in future.

In addition to risk assessment, risk management measures complete the toolbox in that they aim at limiting the exposure that can be totally or partly avoided. An effective implementation of risk management measures implies that exposure conditions are appropriately described. A comprehensive characterization of exposure also allows to better design higher tier investigations, including monitoring, the relevance of which relies in the first place on their representivity of expected exposure conditions of pollinators in agricultural conditions.

This presentation aims at providing a snapshot on the regulatory tools, i.e. risk assessments performed a priori to the authorization and risk management measures implemented in the field that complement each other to achieve the protection of pollinators in the field.