1.3 New industry research and approaches that could help to improve the risk assessment on bees

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Abstract

The crop protection industry recognizes the need to review the bee pollinator risk assessment based on scientific progress. However, the EFSA Bee Guidance Document issued in 2013 is not a realistically feasible way forward. It is based on extremely conservative assumptions, its study requirements lack clarity and are not workable and guidelines for a number of studies are unavailable or not validated. Industry therefore believes that a revision of the assessment scheme for use by regulatory authorities is needed. Building on an analysis of the proposed developments in the EFSA Bee Guidance Document, we suggest proactive and practical approaches.

We believe our approaches provide comparable levels of protection to the EFSA approach and are based on the current scientific state of the art for bee pollinator risk assessment. Key features are the focus on honey bees as a representative species, the definition of core data packages, concentration on main exposure routes and the proposal of more realistic assumptions for the risk assessment process.

Industry believes that this practical approach is both a realistic and protective way forward for bee risk assessment and would welcome the opportunity to engage in a technical discussion with Member States experts and EFSA on this topic in order to help establish a workable and protective solution as soon as possible.

1.4 Honey bee nectar foragers feeding themselves and the colony: a review in support of dietary exposure assessment

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Abstract

Quantitative knowledge regarding the foods collected and ingested by nectar foraging honey bees (Apis mellifera) is essential for accurately assessing risk associated with pesticide residues in their diet. Although a very large and diverse body of research is available covering many years of research in the literature, much of this research was designed for purposes other than risk assessment and the accumulated knowledge has not been comprehensively reviewed and consolidated from the viewpoint of pesticide risk assessment. Accordingly, in the interest of advancing all tiers of pollinator risk assessment, and identifying data gaps, we strove to gather, assess, and summarize quantitative data relating to nectar forager collection, consumption and sharing of nectar within the colony. Data pertaining to nectar forager provisioning before foraging flights, quantities of nectar brought back to the hive, frequency and duration of foraging trips and energetics was reviewed. Recommendations for future research in support of refined honey bee risk assessment will be discussed.

Keywords: honey bee, forager, nutrition, diet, pesticide exposure, risk assessment, Monte Carlo

Background – The objective of this review was to compile quantitative information regarding nectar forager ingestion of nectar to support pesticide risk assessment. We also identified data gaps in information needed to support honey bee dietary risk assessment. The current pollinator risk assessment guidance published in 20141, by the U.S. Environmental Protection Agency, Canadian Pest Management Regulatory Agency, and California Department of Pesticide Regulations (the Agencies) follows the typical tiered approach. The Tier 1 assessment involves a deterministic calculation in which laboratory toxicity data and conservative exposure assumptions