

## **185 - Vergleichende Exposition von Honigbienenbrut durch Pflanzenschutzmittel unter Halbfreiland- und Freilandbedingungen**

*Comparative exposure of honey bee brood (*Apis mellifera L.*) to pesticides under semi-field and field conditions*

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Plant protection products can have lethal and sub-lethal effects on honey bee populations. Based on EU Regulation 1107/2009/EC, the current regulatory risk assessment on honey bees has to address the risk on honey bee larvae. According to the EFSA Bee Guidance Document, 2013, possible higher tier methods for a refinement under more realistic exposure conditions are semi-field and field studies following the OECD Guidance Document 75 or the method by Oomen et al, 1992. In a semi-field OECD GD 75 study the exposure of honey bee brood is driven by pollen and nectar, which is collected by foraging bees from a treated crop inside a tent. An Oomen field study considers an exposure via a treated sugar solution, which is fed directly inside the bee hive. Based on these feeding sources, nurse bees produce larval food (worker jelly), which is offered to the brood and contains residues of the plant protection products. However, it remained unclear if the exposure of larvae in both study types is comparable. Therefore, a study was conducted to evaluate the comparability of an exposure of young honey bee brood to plant protection products through larval food under semi-field and field conditions. In a semi-field study following the OECD GD 75 study design, a tank mixture of an insecticide containing thiacloprid and of a fungicide containing boscalid and dimoxystrobin was applied at their maximum application rates in a bee attractive crop. Simultaneously, in a field study following the Oomen method the same plant protection products were used to spike a sugar solution at field realistic residue levels derived from the same maximum application rates. The results show higher residues in the worker jelly in the study following the Oomen method compared to the OECD GD 75 study and indicate a higher exposure of young honey bee brood when bee colonies are exposed via treated sugar solution compared to honey bee colonies exposed by nectar and pollen.

## **186 - Chlorantraniliprol: Keine negativen Auswirkungen auf die Entwicklung von Hummelvölkern (*Bombus terrestris*) und die Drohnen- und Königinnenproduktion unter Halbfreilandbedingungen**

*Chlorantraniliprole: No negative effects on the development of bumblebee colonies (*Bombus terrestris*) and drone and queen production under semi-field conditions*

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Ziel der Studie war es, die potenziellen Auswirkungen des Insektizids Chlorantraniliprol (Coragen®) auf Hummelkolonien (*Bombus terrestris*) unter Halbfreilandbedingungen (Tunnel) in *Phacelia tanacetifolia* zu untersuchen. Die *Phacelia*-Pflanzen der beiden Chlorantraniliprol-Behandlungsvarianten T1 und T2 wurden in einem Boden angebaut, der mit einer modellierten worst-case 20-Jahres-Plateau-Konzentration von Chlorantraniliprol in den obersten 20 cm des Bodens behandelt wurde (0,088 mg a.s./kg). Zusätzlich wurden zwei Chlorantraniliprol-Spritzanwendungen mit 60 g a.s./ha durchgeführt. In der Behandlung T1 erfolgten beide Spritzapplikationen vor der *Phacelia*-Blüte in den Wachstumsstadien BBCH 51-55 und BBCH 55-59. In T2 erfolgte die erste Spritzapplikation vor der *Phacelia*-Blüte (BBCH 55-59) und die zweite Spritzanwendung während der *Phacelia*-Blüte (BBCH 61-62)