INTERNATIONAL COMMISSION FOR PLANT-POLLINATOR RELATIONSHIPS

Bee Protection Group

16th INTERNATIONAL SYMPOSIUM

Sevilla, Spain.

October 15 – 17, 2024

HAZARDS OF PESTICIDES TO BEES

Location: Caixa Forum

C. López Pintado, s/n, 41092 Sevilla, Spain

History ICPPR-Bee Protection Group conferences:

1st Symposium, Wageningen, the Netherlands, 1980
2nd Symposium, Hohenheim, Germany, 1982
3rd Symposium, Harpenden, UK, 1985
4th Symposium, Řež, Czech Republic, 1990
5th Symposium, Wageningen, the Netherlands, 1993
6th Symposium, Braunschweig, Germany, 1996
7th Symposium, Avignon, France, 1999
8th Symposium, Bologna, Italy, 2002
9th Symposium, York, UK, 2005
10th Symposium, Bucharest, Romania, 2008
11th Symposium, Wageningen, the Netherlands, 2011
12th Symposium, Ghent, Belgium, 2014
13th Symposium, València, Spain, 2017
14th Symposium, Bern, Switzerland, 2019
15th Symposium, York, UK, 2022

16th Symposium, Sevilla, Spain, 2024

Organizing Committee 16th Symposium

Teresa Martin	BioChem AGROLOGIA
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Dr. Jens Pistorius	JKI

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Program: Posters

No.	Paticipant	Title
Risk assessment and risk management		
1.1.	Johannes Lückmann	Non-Apis bee risk assessment in the absence of a specific protection goal: Decision-making with limited options
1.2.	Max Feken	Pollinator Research Task Force: Industry Collaboration in Advancing the Science to Improve Pollinator Risk Assessments
Semi-field and field		
2.1.	Martina Janke	Image-based multispectral flow cytometry – a new analytical approach for fast and efficient pollen determination
2.2.	Silvio Knäbe	Queen Mortality in Honeybee Colonies during Regulatory Field and Semi-field Studies: An Analysis of Six Years of Data
2.3.	Silvio Knäbe	Change in Abundance of Honeybee Foragers as a Tool for Improving Data Quality in Honeybee Semi-Field Studies
2.4.	Johannes Lückmann	Chronic bumblebee feeding test under natural environmental conditions – Lessons learned so far
Monitoring		
3.1.	Rastislav Sabo	Differences in pesticide residue load in honey bee bread between early and late-season – a case study from Slovakia
Other		
4.1.	Susan Willis Chan	SCOUT IPPM-A tool to co-manage pollinators and pests
4.2.	Dora Henriques	Diversity patterns of P450 and ABC transporter genes in 17 honey bee subspecies
4.3.	Eugenia Soler	Chronic toxicity test with different solvents and a thickener on the solitary bee Osmia bicornis.
4.4.	Eugenia Soler	Method development for the acute oral toxicity test on the solitary bee *Megachiles rotundata.* – LD_{50} toxic reference

4.2. Diversity patterns of P450 and ABC transporter genes in 17 honey bee subspecies

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Honey bees (Apis mellifera) inhabit a vast geographical range, spanning diverse natural and agricultural ecosystems. They are exposed to different levels and types of natural (such as plant allelochemicals) and synthetic (such as pesticides) xenobiotics within this range. Several genes have been implicated in the resistance of insects to pesticides, including the P450 monooxygenases superfamily and ATP-binding cassette sub-family F member 1that contain 46 and 41 genes, respectively. Here, the sequences of P450 monooxygenases and ABC transporters from >1500 individuals representing 17 subspecies of the four honey bee main lineages will be analyzed. The functional annotation and effects of each variant will then be predicted using SnpEff and the allele frequency and FST (fixation index) of each SNP per population and evolutionary lineages will be calculated. It is expected to have highly differentiated SNPs among the different subspecies/lineages.

This work was conducted in the framework of the projects MEDIBEES - Monitoring the Mediterranean Honey Bee Subspecies and their Resilience

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4.3. Chronic toxicity test with different solvents and a thickener on the solitary bee Osmia bicornis.

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Abstract

Following the EFSA recommendation, the PPPs (Plant Protection Products), which arenot soluble, tend to clump or precipitate in a short time, must be mixed with a solvent ora thickener, in order to get them to solubilize or homogeneously spread in the solution.

The most common solvents and a thickener, which are used with the honey bee andbumble bee, were tested on the solitary bee, *Osmia bicornis.*

The solvents and a thickener were tested in a chronic exposition (OECD 245) over a 10 day period. For food, a 33% (w / w) aqueous sucrose solution was used. The dose of each solvent and thickener, the consumed solution in mg / bee / day and the % of mortality were as follows: