



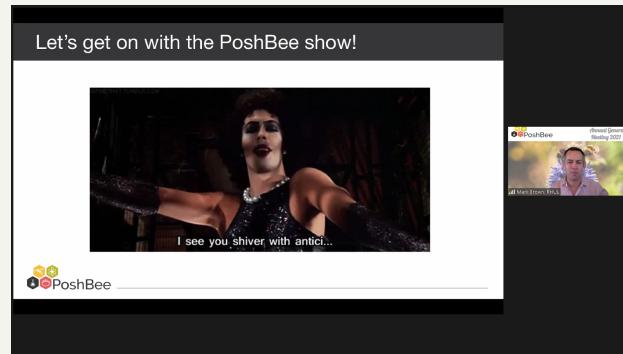
PoshBee

In spite of the obstacles caused by the COVID-19 pandemic, the PoshBee project continues to deliver exciting results and project breakthroughs!

Check out what all the PoshBee Buzz is all about with the third annual PoshBee newsletter!

The PoshBee Buzz **Vol. 3**

The third PoshBee annual meeting took place online



In light of the travel restrictions due to the COVID-19 pandemic, the 2021 PoshBee annual general meeting took place online. Project members and representatives of partner organisations [met up online between 12 and 14 January 2021](#). The three-day long online meeting was marked by insightful presentations, vivid discussions and an overview of the project's developments and future initiatives. The special interactive online environment provided for the meeting proved to be extremely efficient in facilitating dialogues and discussions between partners.

[Read more](#)

PoshBee Research

Immune response in honey bees exposed to neonicotinoid Clothianidin



A research article recently published in the [Nature Communications](#) journal provides evidence on the effects on honey bee health caused by exposure to neonicotinoid Clothianidin. The paper called "[Neonicotinoid Clothianidin reduces honey bee immune response and contributes to Varroa mite proliferation](#)" presents a verification that exposure of honey bees to this type of insecticide can induce immune suppression in developing bees, resulting in increased feeding and reproduction of the parasitic mite *Varroa destructor*.

[Access paper](#)

Using reproductive performance for pesticide risk assessment in honey bees



A recently published research article investigates behavioral and reproductive endpoints for pesticide exposure risk assessment. The paper called "[Pesticide risk assessment in honeybees: Toward the use of behavioral and reproductive performances as assessment endpoints](#)" reviews the ecotoxicology measurements of these endpoints with a focus on pesticide exposure effects on honeybees (*Apis mellifera*).

Data paper: Monitoring bee health through wing morphology and fat bodies



A new data paper published in the [One Ecosystem](#) journal called "[Monitoring bee health in European agro-ecosystems using wing morphology and fat bodies](#)" provides an extensive dataset of wing morphology and fat body content for the European honeybee (*Apis mellifera*) and the buff-tailed bumblebee (*Bombus terrestris*), sampled at 128 sites across eight European countries in different landscape gradients.

Access

Access

PoshBee analysis of EFSA bee risk assessment

[Science](#)
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LETTERS

Holistic environmental risk assessment for bees

Christopher John Topping^{1,*}, Mark Brown², Jordan Chetcuti³, Joachim R. de Miranda⁴, Francesco Nazzari⁵, Peter Neumann⁶, ...

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The honey bee is not representative of less social bee species.

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REFERENCES AND NOTES

- EFSA. Public consultation on the draft EFSA Scientific Committee opinion on a holistic environmental risk assessment approach to the environmental risk assessment of multiple active substances in the framework of the review of existing authorisations/all public consultation draft evaluation report. EFSA J 2019;17(10):5430.
- C.J. Topping, A. Alshaiji, P. Berry. *Science* **367**, 360 (2020).

COMPETING INTERESTS
C.J.T. is vice chair of the EFSA Panel on Plant Protection.

[Read full article](#)

New PoshBee videos

Testing effects of pesticide exposure to bees & bee larvae



▶ 8:00 / 12:51

PoshBee Research: Testing effects of pesticide exposure to bees and bee larvae

163 views • 10 Mar 2021

1 7 0 SHARE SAVE ...

A new PoshBee video titled "[PoshBee Research: Testing effects of pesticide exposure to bees and bee larvae](#)" shows different research techniques performed within the project. PoshBee researcher Piero Onorati presents the different measurements he and his team at the [Swedish University of Agricultural Sciences \(SLU\)](#) perform on adult honey bees of the *Apis mellifera carnica* species and bee larvae to find out the effects on bee health of three categories of agricultural pesticides.

[Watch video](#)

PoshBee field work: Application of samplers in Ireland



A PoshBee field work video by Eleanor Attridge shows the early-spring application of PoshBee samplers on honey bee hives in Cork, Ireland.

The video was created by PoshBee researcher Eleanor Attridge of the [Federation of Beekeepers of Ireland Associations \(FIBKA\)](#), and it demonstrates the application of PoshBee samplers on honey bee hives.

[Watch](#)

PoshBee field work: Field & semi-field experiments in Germany



PoshBee field and semi-field experiments: University of Freiburg

196 views • 13 Jan 2021

10 0 SHARE SAVE ...

A team of PoshBee researchers led by Prof. Alexandra-Maria Klein from the [University of Freiburg](#), Germany, performed field and semi-field experiments to measure the effect of chemicals and other stressors on bees.

The field experiments were conducted near Lake Constanz (Germany). The researchers observed honeybees, bumble bees, and mason bees.

[Watch](#)

PoshBee field work: Large-scale semi-field experiment in Switzerland



Wild Bees Fly for Research: A semi-field experiment by Agroscope

242 views • 10 Nov 2020

1 0 SHARE SAVE ...

A PoshBee experiment, led by a team from Agroscope, aims to track whether wild bees that are well nourished can better cope with stressors such as plant protection products.

Marked bees are released into 33 large flight cages aiming to measure the nesting and foraging behavior of bees, and the effects of plant protection products on these behaviours.

[Watch video](#)

PoshBee News

PoshBee on EIP-AGRI report & newsletter

The PoshBee project was part of the [final report of EIP-AGRI's Focus Group on bee health and sustainable beekeeping](#). Experts from the Agricultural European Innovation Partnership (EIP-AGRI) Focus Group have explored the question of how can the sustainability of beekeeping be ensured in the face of challenges linked to pests and diseases, intensification of agriculture and climate change. The project was also featured in the [EIP-AGRI Newsletter](#) for September 2020.



[Access report](#)

Working together for Biodiversity: Outcomes from the All-Ireland Pollinator Plan

A new booklet titled '[Working Together for Biodiversity: Tales from the All-Ireland Pollinator Plan 2015-2020](#)' was published recently to mark the conclusion of the first phase of [the All-Ireland Pollinator Plan](#) - an initiative founded by Dr. Una FitzPatrick of [the Irish National Biodiversity Data Centre](#) and PoshBee researcher Prof. Jane Stout of [Trinity College Dublin](#). The booklet was launched by the Minister of State for Heritage and Electoral Reform of Ireland, Malcolm Noonan.

Working together for Biodiversity

Tales from the All-Ireland
Pollinator Plan 2015-2020



As Dhomhain Orlaíseach
The Heritage Council

Online edition: ISSN 2009-6852

Print edition: ISSN 2009-6844

Implementation coordinated by the
National Biodiversity Data Centre
A Heritage Council Programme
www.pollinators.ie

Access booklet here

PoshBee in Bee Craft magazine: Brood day by day

An article about PoshBee was featured in the November 2020 issue of the [Bee Craft](#) magazine. The article titled "Brood day by day: What can we learn?" provides insight on the brood monitoring procedure that is applied in the PoshBee project.

Author Matt Allan of [Atlantic Pollination Ltd](#). describes the process of acquiring comprehensive data on adult and juvenile bee mortality by using image recognition software for monitoring. Within the PoshBee project, the method is used for analysis of honeybee colonies when exposed to field realistic doses of plant protection chemicals such as pesticides.

Brood day by day
What can we learn?

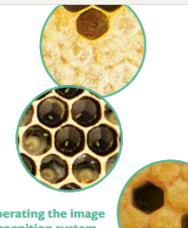
Matthew Allan, Atlantic Pollination Ltd

As keepers of honey bees, we all memorise key dates of the development stages from egg to adult for workers, queens and drones, and use these in our day to day examinations of colonies. It is a form of detective work which enables us to work out the recent history and what will happen to our colonies. This simple arithmetic is even more critical in queen-rearing operations: three days an egg, five days a larva, and so on. We all have a grasp, more or less, of these figures, and we are fortunate in that in the honey bee colony, these dates tick by, not exactly without variation, but for the most part like a metronome (unlike bumble bees and solitary bees, where the development periods are much more variable, depending on temperature and food resources.)

There has always been interest in following the lives of individual bees, from egg to emerging adult. For many years, the method was to place a sheet of acetate over a frame of brood, and mark on the acetate the locations of young bees and, with a colour code, the stage of development. This would be repeated over successive days.

European quantification of the exposure hazard of chemicals not only to managed honey bees but also to bumble bees, and to determine the chemicals alone, in mixtures, and in combination with pathogens and nutrition, affect bee health.

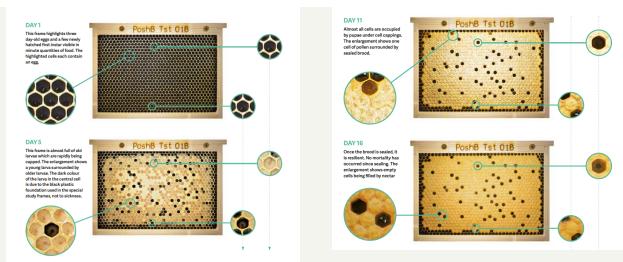
The key elements to a study¹ are:



Operating the image recognition system

In each study hive, one frame is selected. The frame is set on that frame for 24 hours in order to obtain many eggs of similar age. The same frame is photographed repeatedly according to a timetable. These photos are transferred to the computer and sorted according to date and time. The five photos shown here are of the same frame at different times.

The software ensures that the photos match. It then overlays the photos so that every cell registers on every photo – ie, it identifies each cell with a unique identifier. The next step is to identify the contents of each cell, everything from egg to pupa, with pollen, nectar, empty, etc – even rubbish. This is done automatically.



[Read article](#)

The irresistible decline of bees

A recent article in the [DailyScience](#) magazine (Belgium) titled "[The Irresistible Decline of Bees](#)" features an extensive overview of the PoshBee project and its purpose. The article provides information about the research performed within PoshBee, as well as the coordination and communication with various stakeholders, including policy makers such as the European Commission (EC) and the European Food Safety Authority (EFSA).



[Read more](#)

For more exciting news and updates from the PoshBee project, make sure to [subscribe to the PoshBee Buzz annual newsletter](#) and the project channels on [Twitter](#), [Facebook](#), and [Youtube](#)!

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