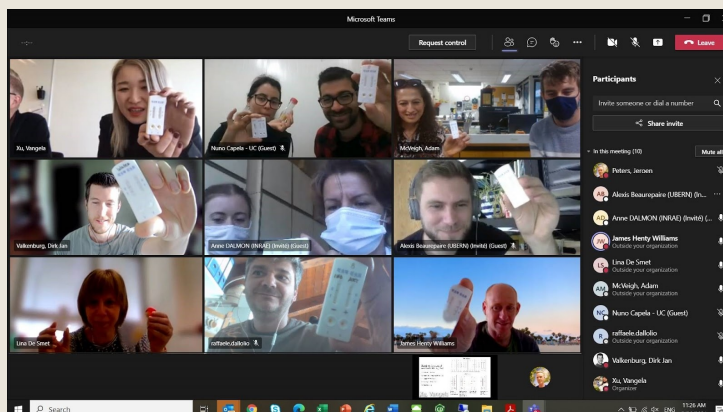


B-GOOD Workshops: forging a bee-friendly world!

First B-GOOD workshop about new technologies for beekeeping

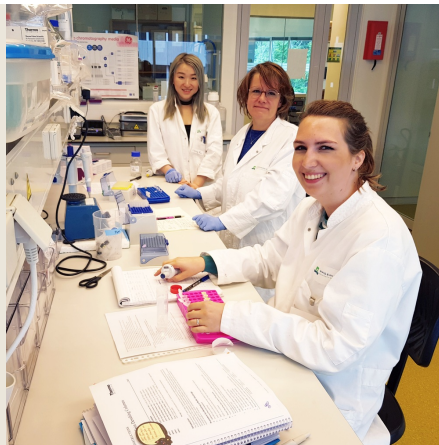
In May 2021, B-GOOD held its workshop about new technologies for beekeeping. The event titled *"Hands-on neonicotinoid detection using the dual-channel neonicotinoid lateral flow device prototype"* was organised by Wageningen Food Safety Research and focused on the presentation of the dual channel neonicotinoid lateral flow device prototype.

Read more about the event [here](#).



A B-GOOD Summer Research Story

During summer 2021, Dr. Anne Dalmon from INRAE visited Wageningen Food Safety Research for [a collaboration](#). The main goal of comprised in developing a portable on-site antibody-based immunoassay for beekeepers to monitor virus infections in their bee colonies.



B-GOOD attends a workshop on "Smart devices used in sustainable beekeeping"

In October 2021, Professor Dr. Daniel S. Dezmirean from University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca visited The Beekeepers Association of the Republic of Moldova (Chisinau, Moldova) for a workshop with the theme "Smart devices used in sustainable beekeeping" as part of the B-GOOD project.



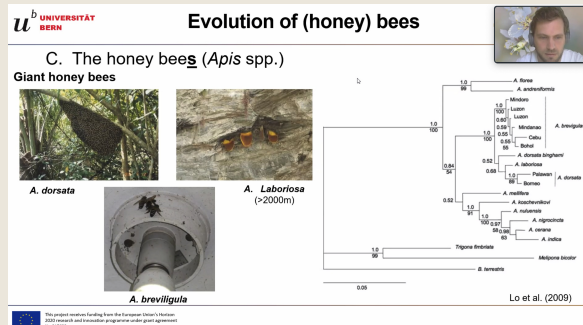
The participants attended the presentations about the B-GOOD project and about the devices used by the project, which was followed by a discussion about this device and feedback. They were introduced to the system through the devices works like analysis of temperature, humidity and vibrations. In the end, beekeepers expressed their interest in a future collaboration and utilization of this devices for a sustainable beekeeping.

B-GOOD's training events: Fostering sustainability and health within the beekeeping sector

In early spring 2022, two distinct trainings took place within the B-GOOD project. The events represented a significant opportunity for stakeholders and scientists to acquire more knowledge and resources while also enabling the expansion of communication and promoting the exploitation of the project's achievements.

The first training was conducted in March 2022 and grouped together 46 beekeepers from 12 countries across Europe. An

overview of the project was first presented to them, followed by a practical view of B-GOOD technologies, as well as virtual hands-on training tutorials to learn how to set up and use some of these technologies.



The three-day-long B-GOOD European course "Introduction to honey bee research and modern beekeeping" grouped together 20 participants from 12 countries. During the course, the participants followed diverse lectures on general honey bee biology, health, and beekeeping. On the third day, the B-GOOD project and technologies were presented to them in greater detail.

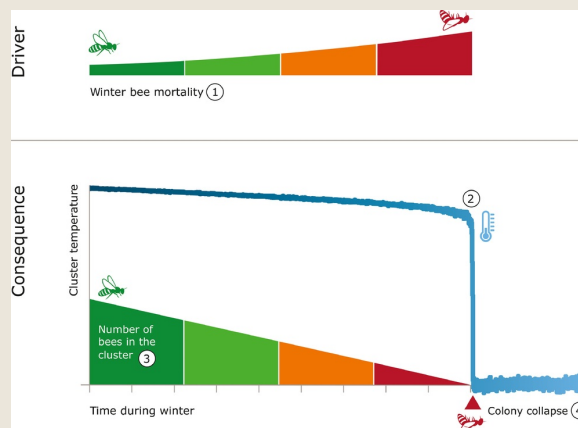
Find out more about the trainings [here](#).

Honeybee Science Center

B-GOOD research examines colony mechanisms to prevent honeybee colonies from dying

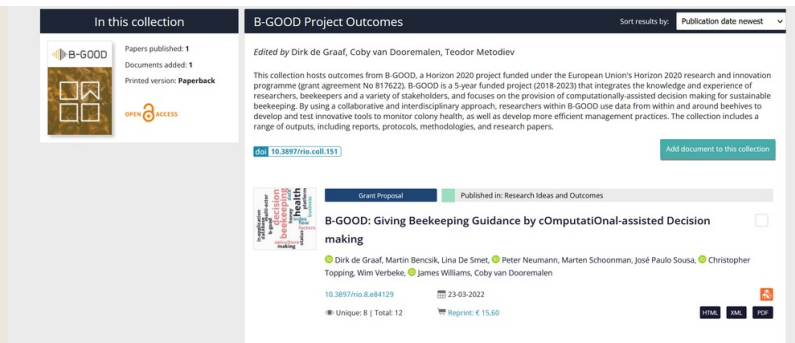
The open-access journal Current Research in Insect Science published an article titled "[Understanding social resilience in honeybee colonies](#)" that examines the mechanism in colonies that allow recovery and maintenance after stressor exposure.

Read full paper [here](#).



New Research Ideas and Outcomes (RIO) collection

In an effort to increase the project's visibility and improve the dissemination of all publicly available project outputs, B-GOOD launched an [open research collection](#) in the [Research Ideas and Outcomes \(RIO\) journal](#). The collection will host a wide range of project outputs, including reports, protocols, methodologies, research papers and more, as well as links to publications in other journals.



The new B-GOOD YouTube series!

We launched a new video series highlighting project developments.

[This first video](#) of the new B-GOOD video series features the project coordinator Prof. Dirk de Graaf, Ghent University and showcases the progress made by B-GOOD in the first half of its lifetime.



[In the second episode](#), Prof. Dirk de Graaf talks about the development of the health status index for bees. He explains that the collection of Big Data is happening over the course of 3 consecutive years and makes a review of each one.

[In the third part](#) of the progress video series, Prof. Dirk de Graaf presents other innovative tools which B-GOOD has developed to further expand the data collection in the final years of the project.

The upcoming videos will continue to set focus on healthy and sustainable beekeeping and some of the fieldwork carried within the project - [subscribe](#) to stay tuned!

Watch full playlist here

The B-GOOD Story in Features!

The B-GOOD project was recently featured in the "[Bee Farmer Magazine](#)" December 2021 edition. The article featured an overview of the project's objectives and developments.



The B-GOOD Story

Helping beekeepers with new management and monitoring technologies. **Alexandra Korcheva** writes

Pollinators, amongst the most well known being honey bees, are of crucial importance to food, environment and economic development. However, the decline of bee populations is a global concern, and the need to understand the reasons for this decline is a global priority. The European research project B-GOOD aims to provide evidence of the various negative effects of pesticides, parasites, viruses and other stressors on the health of bees, and to develop new tools and solutions to promote sustainable beekeeping and a number of technologies are now being developed to efficiently manage honey bee colonies. Research in the area of sustainable beekeeping is an interdisciplinary field that involves beekeepers, scientists and other stakeholders. The health of managed honey bee colonies strongly depends on the beekeeper's management practices. The European research project Growing Beekeepers' Knowledge by Computational Decision Making (B-GOOD) aims to help beekeepers make more sustainable and healthy bee populations, through the development of research and technologies that support better decision making in beekeeping.

What is a Healthy Colony?

In order to be a single queen colony, the queen is more important. The knowledge that honey bee health is determined by the management and the beekeeper's management. The beekeeper's management practices are absolutely necessary for a healthy colony and therefore a crucial objective. The presence of a queen bee is essential throughout the bee season, depending on the state of the colony. The queen bee is the only one that can lay eggs and produce new bees. The health of managed honey bee colonies strongly depends on the beekeeper's management practices. The European research project Growing Beekeepers' Knowledge by Computational Decision Making (B-GOOD) aims to help beekeepers make more sustainable and healthy bee populations, through the development of research and technologies that support better decision making in beekeeping.

The B-GOOD project partners

B-GOOD aims to achieve a number of objectives, including establishing methods for non-invasive monitoring of the composition and quality of honey, increasing the beekeeping bee health – such as nutrition and different beekeeping business models – and increasing the impact of research in beekeeping.

Research Developments and Outcomes

B-GOOD aims to determine the health status of the colonies in honey beekeepers, using multiple indicators and factors. Researchers within the project aim to reproduce the bee colony health status (B-GOOD) using a set of parameters that can be monitored under very different circumstances. The project researchers are currently conducting modelling (B-GOOD) in order to develop a reliable model of honey bee colonies that can assess the health status of the colonies.

Project coordinator Professor Dirk de Graaf

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B-GOOD project at the 2021 EU Pollinator Week

The B-GOOD project was presented at the 2021 edition of the EU Pollinator Week which took place online between 27-30 September. Project partner Dr. Coby van Dooremalen from Wageningen Research (WR) presented the objectives and development of the B-GOOD project, as well as the methods that project partners apply to achieve the project's main objectives.

B-GOOD: giving Beekeeping Guidance by cOMputatONal-assisted Decision making

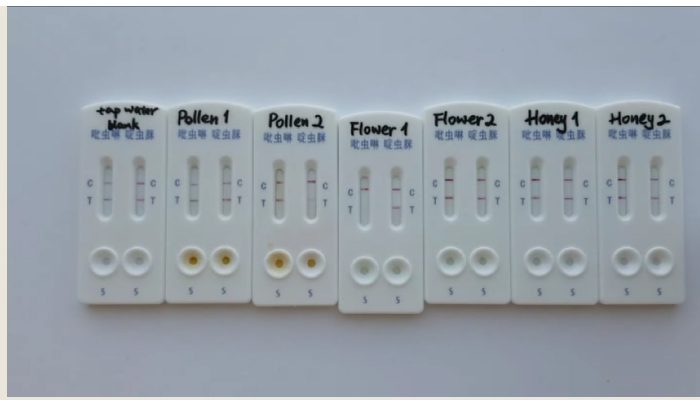
Development of technologies:

- Vibration measurements
- temperature on the frames
- measuring gas emissions
- bee counters
- pesticide and virus detection (LFD)
- Detection of honeybee resistance to varroa

[Check out Coby's presentation here.](#)

B-GOOD featured on Mirage

B-GOOD's lateral flow device was covered in an article of the Australian news website Mirage. The article titled "Small testing strips aid in bee protection" describes the work of Zhejiang university in the development and implementation of the lateral flow device (LFD) technology.



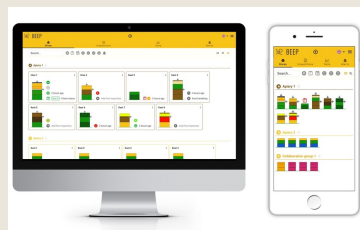
B-GOOD experimental gives on BEEP bases: ARD feature

A short documentary by the German broadcaster ARD featured B-GOOD partner Prof. Robert Paxton and his work on the project. Robert and his team at the institute for biology, Martin Luther University of Halle-Wittenberg, conduct their research in both the laboratory and in the field. Read more [here](#).



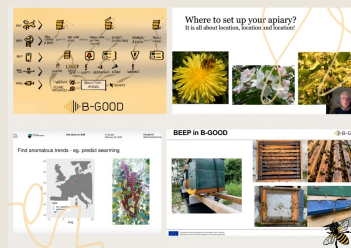
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BEEP BEEP: A reflection of B-GOOD's progress!



The BEEP app receives new functionalities!

The BEEP team worked hard over the last few months to create the [latest edition](#) of the BEEP app, which has a new layout and better features!



BEEP Community Event:

On February 22nd 2022, BEEP held a community event for BEEP users. Eight presenters gave a short presentation for the 120 participants across the globe.

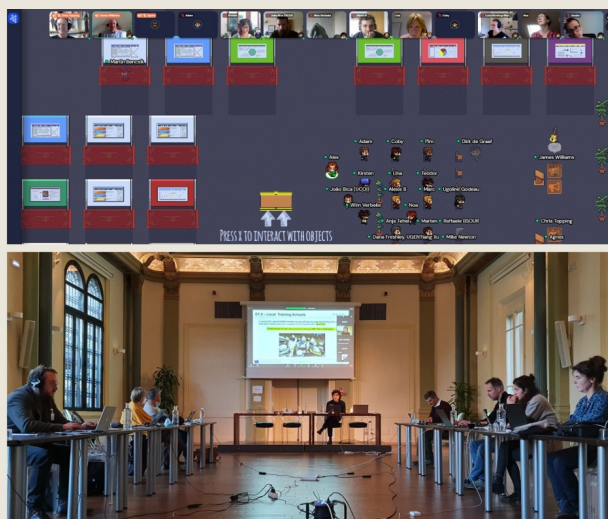
Read more [here](#).

Read more about the BEEP app and the BEEP base [here](#).

Consortium Meetings in 2021

In June and December 2021 Consortium Meetings [5](#) and [6](#) took place.

Consortium Meeting 5 took place online and was marked by a number of interesting presentations including the measuring of the effects that vibrations have on bees, updates about disease monitoring of B-GOOD mini-apiaries in 2020, the optimisation of on-site rapid testing technology (LFDs), assessment of floral resources, and results on the socioeconomics of beekeeping. The second day of the meeting began with panels that were dedicated to SWOT analysis of different actions of the project. The last day held an insightful workshop on lateral flow devices (LFDs) and an interactive panel on the creation of end-user tools for B-GOOD mapping and assessing of floral resources in Europe, and a presentation of the developments of the ApisRAM agent-based model.



Consortium Meeting 6 was a hybrid format with a physical focus group in Italy. Day one focused on results and progress developments, as well as timelines for future plans. The second day of the meeting delivered more targeted discussions and presentations - starting with a general assembly panel, a breakout group on beekeeping and bee health indicators took place, followed by a breakout discussion on BEEP developments. More breakout discussions on the economic dimensions of sustainable beekeeping and the organisation of the European beekeepers local training schools took place throughout the day. The last day of the conference highlighted B-GOOD's action plans for the near future.

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