



B-THENET: Advancing Sustainable Beekeeping through Knowledge Exchange and Best Practices

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Abstract

The B-THENET project (<https://www.bthenet.eu/>) aims to promote sustainable beekeeping by collecting, defining and providing training on Best Beekeeping Practices in Europe. The development of practices is based on a bottom-up approach, and the methodology involves three phases. In the initial phase practices are collected and prioritised with the help of beekeepers. In the second phase practices are analysed to understand if they are suitable for discussion by researchers, advisors, and beekeeping associations. The final phase involves development, validation and dissemination of selected practices through the joint efforts of beekeepers, advisors and researchers. Here we present the results of the collection and prioritisation of practices carried out in the first three years of the B-THENET project.

4,776 beekeepers and advisors from 13 European countries (Austria, Belgium, Croatia, Denmark, Germany, Greece, Hungary, Italy, Poland, Slovakia, Slovenia, Spain and Sweden) were asked by means of surveys to identify the most relevant Good Beekeeping Practices (GBPs) and Biosecurity Measures in Beekeeping (BMBs). The themes discussed include: "Apiary set-up and management/maintenance", "Colony set-up and management/maintenance", "Bee feeding and watering" and "Record keeping" for the GBPs category, whereas BMBs comprise "Varroosis", "American Foulbrood" and "European Foulbrood". In the final year of the project practices on "Routine (preventive) hygiene practices" for GBPs and "Nosemosis, Small Hive Beetle and *Vespa velutina*" for BMBs will be discussed.

In the first year, 22 practices were identified as priority, of which, 13 were GBPs relative to "Apiary set-up and management/maintenance", and 9 BMBs relative to "Varroosis". In the second year, 28 practices were selected: 20 GBPs referring to "Colony set-up and management/maintenance" and 8 BMBs to "American Foulbrood". In the third year, European beekeepers identified as most important 25 practices, including 19 GBPs relative to "Bee feeding and watering" and "Record keeping", and 6 BMBs relative to "European Foulbrood". The identified practices were developed and validated through collaboration with researchers, national beekeeping associations, and local beekeepers and advisors. The outcome is a comprehensive repository of GBPs and BMBs (<https://www.bthenet.eu/repository-platform/>), translated and tailored to the local conditions of 13 European countries.

Introduction

B-THENET "Best Practices and Innovations for a Sustainable Beekeeping" is the first European Thematic Network funded under Horizon Europe dedicated to Best Beekeeping Practices and Innovations. The project started on 1 September 2022 and will run for four years, ending on 31 August 2026.

B-THENET involves 18 partners across 15 EU countries (Fig. 1A) including research organizations, universities, international and national beekeepers' associations, centres for advisors training, centres for social sciences and humanities, and agencies for communication and dissemination. The project collects, analyses, develops and validates Best Beekeeping Practices (BBPs) in close collaboration with EU beekeepers, advisors, researchers, and other stakeholders in the apiculture sector. This joint effort is coordinated through 13 National B-THENET Centres (Austria, Belgium, Croatia, Denmark, Germany, Greece, Hungary, Italy, Poland, Slovakia, Slovenia, Spain and Sweden) and 3 International B-THENET Centres (in 4 countries: for beekeepers in Italy; for advisors in Sweden and Spain; for other stakeholders in Belgium) (Fig. 1B).

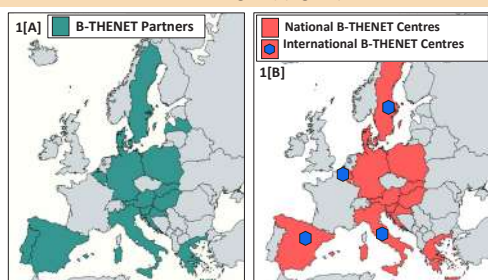


Figure 1. [A] The Project brings together 18 Partners from across 15 EU countries. **[B]** The National and International B-THENET Centres established at the beginning of the project.

Methodology

The project formally defined **Best Beekeeping Practices** as: "Best Practices adapted to a specific geographical context (e.g., different climatic and environmental conditions), and a specific beekeeping context (e.g., different bee genetics, beekeeping equipment, and diseases), therefore representing the state of the art of beekeeping for a given area."

The methodological approach adopted by B-THENET to develop BBPs across different EU countries is illustrated in Fig. 2.

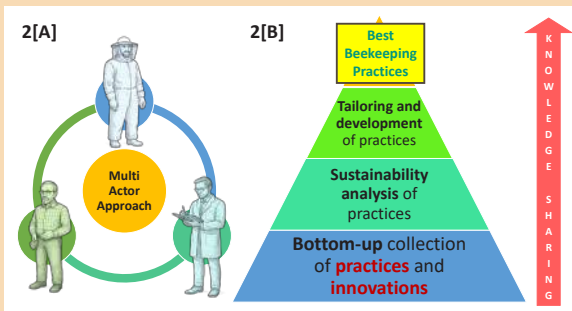
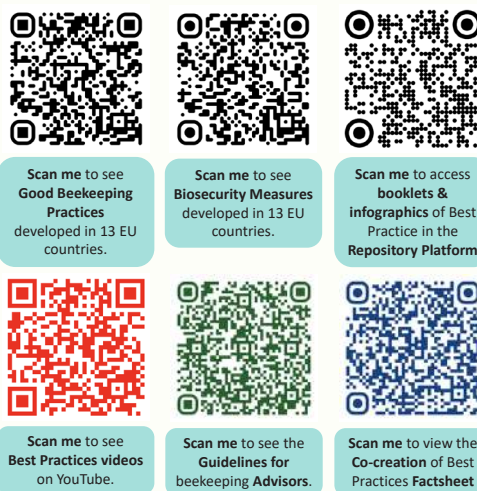


Figure 2. B-THENET Methodology. [A] The Multi-Actor Approach engages beekeepers, advisors, and researchers in close collaboration. **[B]** Best Beekeeping Practices are collected from beekeepers using a bottom-up approach, analysed by researchers and advisors for sustainability, and finally developed and adapted to the national context of the 13 National B-THENET Centres.

Results

Scan the QR codes to explore the main outputs and results of the project, via the **Platforms of B-THENET**.



Conclusions

In its first three years, the B-THENET project has delivered valuable outputs for EU beekeepers and advisors. Among its practical resources is an interactive digital platform that enables beekeepers from 13 EU countries to contribute to the development of Best Beekeeping Practices. It has also produced a wide range of digital learning and training tools dedicated to Best Beekeeping Practices, including videos, booklets, guidelines, infographics and factsheets. Furthermore, through its 13 National and 3 International Centres, the project is fostering a physical space for collaboration, and knowledge exchange and uptake in Europe. In its final year, B-THENET will focus on developing Best Beekeeping Practices on Invasive vespid management, Small Hive Beetle, Nosemosis, and Routine (preventive) hygiene practices. In addition, it will produce related dissemination materials and a comprehensive final Manual of Best Practices for EU beekeepers, bringing together all the work carried out on best practices throughout the project.

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