Journal of Apicultural Research

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/tjar20

Special issue on pests and pathogens in Apiculture: Navigating Old Challenges and Unveiling New Threats

Melanie Parejo, Adriana Alippi, Dora Henriques & Maria Bouga

To cite this article: Melanie Parejo, Adriana Alippi, Dora Henriques & Maria Bouga (2024) Special issue on pests and pathogens in Apiculture: Navigating Old Challenges and Unveiling New Threats, Journal of Apicultural Research, 63:2, 219-219, DOI: 10.1080/00218839.2024.2318134

To link to this article: https://doi.org/10.1080/00218839.2024.2318134

JOURNAL OF APICULTURAL RESEARCH
2024, VOL. 63, NO. 2, 219
https://doi.org/10.1080/00218839.2024.2318134

EDITORIAL

Special issue on pests and pathogens in Apiculture: Navigating Old Challenges and Unveiling New Threats

In the realm of apiculture, the delicate balance between colonies, bees and the challenges posed by pests and pathogens has been a longstanding concern for researchers and beekeepers alike. The decision to dedicate a special edition to pests and pathogens in apiculture arose from the fact that a myriad of pests and pathogens are some of the main threats to bees across the world. Moreover, the increase in submissions during the recent period indicates a heightened research interest and an urgent imperative to confront the challenges associated with pests and pathogens in apiculture.

The selection criteria for the articles featured in this special edition were conscientious, aiming to encompass a diverse range of pests and parasites while spanning different host species, including *Apis mellifera, Apis cerana*, *Bombus* ssp., and stingless bees. Moreover, we included articles from different countries worldwide. The geographic breadth thus ensures a comprehensive overview of the global landscape of apicultural threats.

Several articles in this special issue shed light on the enduring challenges posed by "old friends" in the beekeeping world, such as the infamous *Varroa destructor* mite, bacterial brood diseases, and the Greater wax moth. Also, microsporidian pathogens like *Vairimorpha* (formerly *Nosema*) *apis* and *V. ceranae* are of concern for honey bees. Despite their familiarity, these adversaries continue to wreak havoc on bee colonies, emphasizing the persistent threat they pose to apiculture. The emergence of resistances, notably Varroa's resistance to pyrethroids and amitraz, and resistance of bacterial pathogens to antibiotics, adds a layer of complexity to the battle against these foes. Further, uncontrolled use of prohibited products or their incorrect application exacerbates the situation, leading to contamination and residues in honey and other bee products.

The imperative for timely diagnosis and the development of alternative, environmentally friendly treatments cannot be overstated. The call for new biocontrol measures that leave no residues in bee products and have minimal side effects resonates throughout this special edition. As we face the urgent need for sustainable solutions, it is crucial to explore treatments that address the challenges posed by both old adversaries and the new pests that have recently been identified, such as mites affecting stingless bees and ants targeting honey bees.

While we have made significant strides in understanding pests and pathogens, particularly in the context of *Apis mellifera*, it is evident that much more research is needed. The knowledge gap is particularly pronounced for other *Apis* species like *A. cerana* and non-Apis bees like stingless bees. These bees demand increased research support to ensure their survival and sustainable management and, in turn, maintain the delicate ecological balance that hinges on the well-being of these important pollinators.

In conclusion, this special issue serves as a compendium of knowledge, highlighting the persistent challenges faced by apiculturists globally. We hope that the insights shared in these articles will stimulate further research, innovation, and collaboration, as we collectively strive to safeguard the invaluable contribution of bees to our ecosystems and food security.

Special issue editors

Melanie Parejo
Applied Genomics and Bioinformatics, University of the Basque Country, Bilbao, Spain
parejom@ibra.org.uk
http://orcid.org/0000-0002-7248-0424

Adriana Alippi
CIDEFI, Facultad de Ciencias Agrarias y Forestales, Universidad Nacional de La Plata, La Plata, Argentina
http://orcid.org/0000-0003-4749-1567

Dora Henriques
Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Bragança, Portugal and Laboratório Associado para a Sustentabilidade e Tecnologia em Regiões de Montanha (SusTEC), Instituto Politécnico de Bragança, Bragança, Portugal

Maria Bouga
Lab of Agricultural Zoology & Entomology, Agricultural University of Athens, Athens, Greece
http://orcid.org/0000-0001-7493-9158

https://doi.org/10.1080/00218839.2024.2318134