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Abstract book

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Table of Contents

Welcome

It is our sincere pleasure to welcome you on the EurBee 10 Congress in Tallinn, Estonia! The Congress is organized by the Estonian University of Life Sciences with assistance by Publicon OÜ.

EurBee is the event, where old and new friends get together to exchange the knowledge of novel scientific findings, associated with honeybees and other pollinators.
We encourage young researchers to meet the leading scientists on their field. Establishing networking and creating new connections is extremely important for sustainable bee research.

The City of Tallinn is the capital of Estonia. Tallinn's Hanseatic old town and nowadays modern architecture is a great mixture for every taste. We recommend you to discover the great Estonian flavors and the interesting culture that Tallinn offers you in abundance on every corner.

Looking further, Estonian nature with its forests, bogs and swamps is unique in the world – all the EurBee guests have the opportunity to experience its magic!

Experience magic – experience Estonia!

Sincerely Yours,

Risto Raimets
President of EurBee 10

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CHALLENGES IN VARROOSIS CONTROL: PRELIMINARY INVESTIGATION OF AMITRAZ RESISTANCE IN VARROA DESTRUCTOR IN PORTUGAL

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Abstract

Varroosis is a disease caused by the ectoparasitic mite *Varroa destructor*, identified as one of the most significant global threats to the honey bee (*Apis mellifera*). The most effective control of this mite is through synthetic or organic acaricides. However, the excessive and repeated use of synthetic acaricides has led to the development of resistance. Amitraz is a synthetic pesticide commonly used in the control of *V. destructor*, but resistance to this compound has been observed. Previous studies observed a substitution of asparagine by serine at position 87 (N87S) of the Octβ2R gene, associated with amitraz resistance in France, and a substitution of tyrosine by histidine at position 215 (Y215H), associated with amitraz resistance in the USA. Building upon this knowledge, we aim to implement the first screening in Portugal for mutations associated with *V. destructor* resistance to amitraz. Unlike several European countries and the USA, Portugal lacks information regarding gene variation implicated in *V. destructor* resistance to amitraz, as well as allelic frequencies and their geographical distribution. To investigate the resistance mechanism, primers were developed to amplify the two known target regions of amitraz in *V. destructor*. DNA was extracted from individual female varroa mites using a commercial extraction kit, and the obtained DNA was PCR-amplified with the developed primers, followed by Sanger sequencing. With the knowledge obtained, we hope to assist beekeepers in selecting the most suitable acaricide to manage *V. destructor* in their apiaries and gain a deeper understanding of amitraz resistance in Portugal.

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