10th CONGRESS OF APIDOLOGY

16.-19.09.2024 Tallinn, ESTONIA

Abstract book

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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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Acknowledgements

The organisers of EurBee 10 wish to wholeheartedly thank all our generous sponsors, supporters and exhibitors for participating in the congress!

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RESISTANCE OF VARROA DESTRUCTOR TO PYRETHROIDS: A PRELIMINARY ANALYSIS IN PORTUGAL

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Abstract

Infestations of *Varroa destructor* are closely associated with colony collapse in the honey bee (*Apis mellifera*). Currently, three classes of acaricidal compounds are utilized to combat these infestations: pyrethroids (fluvalinate and flumethrin), organophosphates (coumaphos) and formamidines (amitraz). The first cases of *V. destructor* resistance to pyrethroids were reported in Italy, followed by numerous instances of resistant populations worldwide. The molecular mechanism of *V. destructor* resistance to pyrethroids is well understood and primarily linked to an amino acid change at position 925, where a leucine (L) is typically found. At this position, three alleles have been described that confer resistance to pyrethroids, where leucine is substituted by valine (L925V), isoleucine (L925I), or methionine (L925M). A novel mutation at position 918 was described in a population from Spain, where the amino acid methionine, normally found at position 918, was replaced by leucine (M918L). In Portugal, gene variation associated with pyrethroid resistance remains unknown. To investigate this mechanism in *V. destructor* populations from Portuguese apiaries, DNA was extracted from individual mites. This DNA was PCR-amplified using the primers 273-IF_VD (5′-AAGCCGCCATTGTTACCAGA-3′) and 1973-IR_VD (5′-CTGTTGTTACCGTGGAGCA-3′) and subjected to Sanger sequencing. The expected outcome is that mutations are found in Portugal at both positions 925 and 918, due to its geographical proximity to Spain. These results will contribute to the Portuguese beekeeping sector by facilitating the development of strategies for handling *V. destructor* resistance.

Project "MITE- Varroa e vírus transmitidos: MonItorização de muTações e dEsenvolvimento de ferramentas moleculares inovadoras" is funded by National Beekeeping Programme 2023-2027.