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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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DEHYDRATION AS A POSSIBLE ADAPTIVE TRAIT IN *APIS MELLIFERA SYRICA*

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Abstract

The European honey bee *Apis mellifera* has a large number of subspecies, all adapted to their environment. Among these, *A. m. syriaca* is a subspecies native to some countries of Western Asia as Jordan and Lebanon. Although these two countries share a Mediterranean climate, relative humidity follows different patterns in the two countries, being very high and constant in the Lebanese coast and lower and seasonal in the central Jordan. This provides an opportunity to study the adaptation of the same subspecies to different environments keeping in mind that, the bees are able to evaporate nectar water and regurgitating liquid droplets to regulate both temperature and humidity inside of the hive. To determine if they have developed different adaptations, newly emerged worker bees of *syriaca* subspecies from both countries were exposed to different temperature and humidity conditions in order to calculate the body water loss in each case. Nine different conditions were tested, combining 35, 40 and 45°C temperature with 10, 25 and 50% Relative Humidity. Our results show differences between bees from the two countries: while Lebanese bees seem to have a protective effect of heat stress in environments with higher humidity, Jordanian bees seem to follow a different pattern. On the other hand, Lebanese bees showed higher dehydration percentages compared to Jordanian bees, indicating a higher adaptability to heat environments. Future genetic studies will provide more information about this possible adaptation.

These results are under the project 2011-MEDIBEES, which is part of the PRIMA programme supported by the European Union