10th CONGRESS OF APIDOLOGY
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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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INSIGHTS INTO POPULATION STRUCTURE AND CONSERVATION STATUS OF NORTH AFRICAN HONEY BEES

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Abstract

The population structure of North African *A. mellifera* subspecies has been overlooked. Here, WG generated from drones were analyzed to assess population structure and the conservation status of three A-lineage subspecies: *A. m. lamarckii* (Egypt, 68 samples), *A. m. intermissa* (Algeria, 69 samples), and *A. m. sahariensis* (Algeria, 68 samples; Morocco, 26 samples). Population structure was assessed by SNMF and PCA. For *A. m. lamarckii*, variable C-lineage introgression was detected (median q-value$_{C-lineage}$=0.068; IQR=0.074) and PCA showed a well-grouped cluster slightly shifted towards C-lineage. Moroccan samples showed a highly compact group close to, but distinct from, the Algerian samples, and without signals of C-lineage introgression. In Algeria, only 28 *A. m. sahariensis* samples showed high purity values for this subspecies, and the remaining 48 samples showed variable introgression from *A. m. intermissa* (q-value$_{intermissa}$=0.127; 0.021). A more concerning scenario was found for *A. m. intermissa*, in which only 17 samples were classified as pure *A. m. intermissa*, 21 samples showed variable *A. m. sahariensis* introgression (q-

value$_{sahariensis}$=0.125; 0.016), and the remaining 32 samples showed to be pure *A. m. sahariensis*. In the PCA analysis, a large portion of Algerian samples formed a cluster containing individuals of both subspecies. The remaining Algerian samples formed five well-defined isolated clusters: three containing *A. m. sahariensis* samples and two containing *A. m. intermissa* samples. SNMF runs at K=7 for the Algerian samples also recovered the existence of these high-purity isolated clusters. While most *A. m. intermissa* samples were located in the northern part of Algeria, some were located farther south. For *A. m. sahariensis,* a large portion of the samples were located close to the Mediterranean coast. These results suggest that, in addition to the C-lineage introgression (especially in *A. m. lamarckii),* the geographical delimitation originally described by Ruttner does not exist anymore in North Africa.