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5.P5. Genetic analyses of Algerian honey bee populations and relationships with other honey bee subspecies.

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The honeybee (*Apis mellifera* L.) is an ecologically and economically important insect species. Two subspecies of 26 identified subspecies are distributed in Algeria. The importation of foreign queens and migratory beekeeping practices are factors that can affect the genetic diversity of the Algerian honeybees. In this way, it is necessary to first accurate knowledge about the genetic structure of the populations. The aim of this research is to study the genetic structure of the Algerian populations of honeybees, to examine their phylogenetic relationships and to investigate the possibility of the gene flow existence as a result of migratory beekeeping and commercial breeding. The genetic diversity was investigated using fourteen polymorphic microsatellite loci. Eight different populations of 438 colonies were analysed and the microsatellite analysis showed that the honeybee populations are characterized by a higher level of genetic variation in terms of average number of alleles and degree of heterozygosity and the majority of the populations are at Hardy-Weinberg equilibrium. Phylogenetic and population structure analyses support clustering of these populations in one principal group, confirm that Algerian honeybees are belonging to the lineage A and are completely separated from the other lineages M, C and O. The microsatellite genetic homogeneity within Algerian populations indicates that the structure of the local populations is not affected by the modern beekeeping practices.

5.P6. Temporal patterns of honey bee (*Apis mellifera* L.) mitochondrial DNA variation in the archipelago of Azores (Portugal)

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Morphological and molecular studies have been carried out on different Mediterranean and Atlantic island populations of honey bees. A previous genetic survey of the Azorean honey bees, carried out by De la Rúa and colleagues (2006), showed their genetic distinctiveness from continental populations and their close relationship with NW African populations. Herein we present the results of a more comprehensive survey (samples collected from all the islands of the archipelago) of the mitochondrial DNA variation exhibited by the honey bee populations of Azores. Using previously obtained results from honey bee samples collected in 2001, we assess the temporal maternal variation of these populations over a 9 year time frame.

5.P7. Spatial patterns of honey bee (*Apis mellifera* L.) genetic diversity in continental Portugal: the story told by mitochondrial DNA

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Over 24 honey bee (*Apis mellifera* L.) subspecies occur naturally in Europe, Africa and the Middle East. Morphological and molecular markers have grouped this wide-ranging diversity into four lineages (A, M, C, O). The Iberian Peninsula harbours two of such lineages (A and M) and the greatest honey bee maternal diversity and complexity across Europe. While the Spanish honey bee populations have been extensively surveyed for mtDNA variation, the genetic composition of the populations inhabiting the Portuguese side of the Iberian Peninsula is virtually unknown. Herein, we present the first comprehensive account of the maternal variation across continental Portugal. Over 1000 colonies were surveyed for the COI-COII mitochondrial DNA region, which showed a high genetic diversity across Portugal, mostly haplotypes of African origin (lineage A).

5.P8. Honeybee (*Apis mellifera* L.) in Turkey: Biodiversity using Geometric Morphometrics Analysis.

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The wing shape morphology of honey bee population of Turkey was examined by geometric morphometric analysis using the coordinates of 18 landmarks located at vein intersections of the right wing. After obtaining the wings images, the vein junctions were detected automatically using DrawWing software. Generalized Procrustes Analysis and Principal Component Analysis were used to compare the shape of venation. The analysis on wing shapes revealed significant information on population differentiation. Projections into the first two canonical plane, slightly separated honeybee populations in three main groups, as well as UPGMA dendrogram: Southeastern Anatolia and Thrace and the other groups including the remaining populations. Honey bees of Southeastern Anatolia remained as a distinct unit and showed different pattern in terms of shape morphometry among honeybee populations of Turkey. Also the ANOVA analysis of the log of centroid size of wings showed differences among all honey bee populations. Geometric morphometrics method can be a very powerful tool in exploring intra-specific variation at the population level and evolutionary studies concerning honey bees in Turkey.

5.P9. Variability of some production traits of selected lines in Republic of Serbia

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Improving population honey bee *Apis mellifera carnica* Poll. Serbia is of interest to the wider region of Southeast Europe. Breeding and selection of honey bees in Serbia carried out by the system of line breeding. Each line is examined a dozen of daughter queens that come from prominent founders of the queen mother. The paper presents results of the production characteristics of four isolated lines in the area of western Serbia. The amount of bees, brood, honey and pollen was investigated in two spring and one autumn view. All bee colony is