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6.15

**The impact of apiculture on the genetic structure of Atlantic island honeybee populations (*Apis mellifera* L.).**



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Beekeeping practices such as importation of non-native honeybee queens may interact with the conservation of honeybee subspecies and ecotypes biodiversity. Island honeybee populations are especially appropriate to test the impact of the introduction of foreign subspecies into their genetic diversity and structure. Here we used microsatellite markers to test whether genetic introgression from introduced honeybee queens is taken place in the honeybee populations from the Canary Islands, Azores and Madeira (Macaronesian region). We found introgression signals from foreign honeybee populations on these Atlantic islands based on Bayesian structure analysis and population parameters. Fst pairwise comparisons with Iberian, North African and other European populations and structure analyses suggest different sources of honeybee queens into the islands: while honeybees from the Canary Islands showed introgression from European honeybees, the honeybees from Azores and Madeira showed a closer relationship with those from the Iberian Peninsula. On the other hand, the existence of endemic honeybee populations on the Canary Islands prone to be conserved can still be depicted from the aforementioned analyses.

6.16

**APESLOW: a collaborative project to save the autochthonous Sicilian bee *A. m. siciliana*.**

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Efforts for *A. m. siciliana* conservation on Sicily began in the late '80s, when three colonies were isolated on the small Ustica island to avoid introgression with the Italian yellow bee *A. m. ligustica*. A professional beekeeper, Carlo Amodeo, and CRA-API (Honeybee and Silkworm Unit of the Council for Research and Experimentation in Agriculture) cooperated over 30 years to preserve a pure population.

The special biological traits shown by *A. m. siciliana* have recently fuelled interest in this race on behalf of Sicilian beekeepers. Moreover, Slow Food International Foundation for Biodiversity places a spotlight on the Sicilian bee. In Dec. 2011 a three year reintroduction project (APESLOW: "Reintroduction and conservation of endangered subspecies *Apis mellifera siciliana*, Dalla Torre 1896: a tribute to Prof. Genduso") has started, with the aim to establish protected breeding areas for *A. m. siciliana* and to obtain a better knowledge of its biological and productive traits.

Here we present an overview of the abovementioned project and also molecular, morphometric and enzymatic data from past and recent monitoring activity on *A. m. siciliana* populations on both conservation islands and on Sicily main island.