

Supplementary material

Section S1. An exhaustive synthesis of the analysis of introgression rate of hybrids in the native populations of the western honey bee.

We synthesized the published data of the analysis of the introgression rate of allochtone bees in the native populations of *Apis mellifera* (i.e. in Europe, Africa and western Asia). The mitochondrial DNA analysis (mtDNA) is a suitable method to witness of introgression in the local populations. This approach estimates the introgression rate of single or multiple mtDNA haplotypes origins in a population. The population is defined as a set of colonies at the same sampling site. Human-mediated introgression is identified whenever a presumed pure population includes multiple mtDNA haplotypes. Current flows in the population of the western honey bee are essentially related to trade and human translocation of beehives and selected queens. Given that the mitochondrion is maternally inherited, the mtDNA analysis at population level expresses the level of introgression of the given population (i.e. the proportion of imported haplotypes in a population). We selected the studies that (i) used the standard molecular method of mtDNA analysis, (ii) recorded the lineage identity, and (iii) when the sampling size (number of colonies) was sufficient to estimate the proportion of each lineage in a given population (i.e. ≥ 3 colonies).

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