

# Book of Abstract



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**SESSION XII**

**SOCIAL INSECTS AND APIDOLOGY**

**Beewild: the Citizen Science and the study of the wild colonies of *Apis mellifera*.**

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The Western honey bee (*Apis mellifera* Linnaeus, 1758), the one managed by beekeepers all over the world, is a native insect in almost all of Europe, Africa and the Near East where is one of the main pollinators of the flora (both wild and cultivated). Until a few decades ago, colonies of wild (i.e., unmanaged) *A. mellifera* were largely common: in hollow trees, in holes in the ground, in cracks in rocks but also in buildings, abandoned and not. However, since the early 1980s there has been a rapid and underestimated rarefaction of the "wild" colonies due to a parasite, the fearsome *Varroa destructor* (Anderson & Trueman, 2000) mite. This parasite initially decimated, both with its direct action and due to the viruses, it transmits, both unmanaged honey bees and those managed by beekeepers, with the difference that the latter immediately understood how to protect their colonies with different techniques also including the massive use of acaricides.

The effect of the *Varroa* mite on unmanaged colonies was instead so strong that today in Europe most of the survived honey bees live in hives managed by beekeepers. Indeed, for many years it has even been thought that in Europe wild honey bees were disappeared or they only derive from swarms originated by those managed by beekeepers. In recent years, however, there has been a significant increase in reports of unmanaged colonies, probably due to the growing empathy of people for this insect. Unmanaged honey bee colonies are primarily important because they are a natural component of our European habitats. Unmanaged colonies of *A. mellifera* are also important for the same beekeeping because they are more directly subject to natural selection. In fact, in these colonies are more likely selected characters of resistance and/or tolerance to parasites and diseases but also of adaptation to local ecological and climatic conditions as well as to their change over time.

The unmanaged colonies are then of fundamental importance for the conservation of local subspecies and populations of *Apis mellifera*. Therefore, knowing the real distribution of the unmanaged *A. mellifera* colonies, living outside the beekeepers' hives, is very important and that is why Fondazione Edmund Mach created the BeeWild mobile application, which can be downloaded for free (and free from advertisements of any kind) both from Play Store and App Store. The BeeWild app allows citizens, through a typical Citizen Science action, to report the presence and survival over time of unmanaged colonies of *Apis mellifera*, geolocating them, also providing some simple observations relating to the environment, the type and position of the nests and allowing users to attach one or more photographs.

**KEY WORDS:** honey bee, varroa, Italy, protection, resilience.

**POSTER**