



UNIVERSITÀ DI PAVIA

Corso di Dottorato in Scienze della Terra e dell'Ambiente

1. Project title

Environmental conditions and microbial communities of *Apis mellifera* L.1758

2. Proposer

Surname	Capelli
Name	Enrica

3. Research Unit

Surname	Name	Institution
Capelli	Enrica	Università di Pavia -Dipartimento di Scienze della Terra e dell'Ambiente
Brusoni	Maura	Università di Pavia -Dipartimento di Scienze della Terra e dell'Ambiente
Mazzoni	Emanuele	Università Cattolica del Sacro Cuore-sede di Piacenza, Facoltà di scienze agrarie, alimentari e ambientali, Dip. di Scienze delle produzioni vegetali sostenibili (DI.PRO.VE.S.) SD: Agr/11 Entomologia Generale e Applicata
Reguzzi	Cristina	Università Cattolica del Sacro Cuore-sede di Piacenza, Facoltà di scienze agrarie, alimentari e ambientali, Dip. di Scienze delle produzioni vegetali sostenibili (DI.PRO.VE.S.) Agronomist collaborator
Camerini	Giuseppe	MIUR- Natural Science Teacher in High School
Rattini	Daniele	Parboritz spa https://www.parboriz.it/

4. Key words

(Max. 5 – at least 2)

Soil; Microbial biodiversity; environment; metagenomics; NGS sequencing

5. Abstract

(Max.1.500 characters with spaces)

The aim of this proposed project is to investigate the microbial composition (bacterioma and mycoma) of honey bee (*Apis mellifera* L.1758) collected in three areas of the Po Valley characterized by a different level of anthropization. In recent times it has been possible to acquire a relative knowledge of the bee microbiota, while its relationship with the environment remains partly unexplored and this gap of knowledge deserves to be filled. The microbiome depends on heritable components colonizing gut and skin which



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are influenced by environmental factors such as nutrients, climate conditions and pollutants. This research project aims to analyze the microbiome of European honey bees (*Apis mellifera* L.1758) bred in different areas in the province of Milan and Pavia, in order to highlight differences linked with the varying environmental stress conditions. Points of interest are given by the evaluation of the variations of the microbiota with the season progress, from the beginning of the bottling activity to the end of the activity outside the hive and the correlation with the characteristics of plant communities in cultivated, semi-natural and natural habitats. The results obtained could be useful both for possible conservation management plans, but also to understand the relationships between bee health, vegetation characteristics and pollution levels.