

**P004**

*The influence of diet in microbiota acquisition of Apis mellifera*

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In the last decade, High throughput 'next generation' sequencing technology has become increasingly popular in studies involving bacterial symbionts of insects. In the honeybee *Apis mellifera* for instance, microbes found in their guts were shown to belong to groups able to produce antibiotics, participate in nitrogen recycling and improve digestibility of pollen. While descriptive work on the identity of gut bacteria has been abundant, we still know very little about the costs and benefits of harboring these microbes, their mechanisms of inheritance and their effects in the health of the hive, both in the individual and colony levels. The urgency in clarifying these areas has increased since the diet and management of honeybees have been implied to be involved in causing Colony Collapse Disorder. We hypothesize that the honeybee microbiota is changed when the colony is fed food supplements, which can be especially detrimental for newly emerged bees. On the other hand, both honey and bee bread contain the core microbiota found in adult workers. We tested this hypothesis by feeding colonies with either food supplement or a natural diet (bee bread and honey). At the same time, we attempted to clarify the route of bacterial transmission by manipulating the presence and absence of nurse bees. In this talk we present the results of this experiment, with an emphasis on the role of diet on the colonization of the digestive tract of newly emerged bees.