

# FEMS 2017

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**ABSTRACT BOOK**



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**Environmental Microbiology/Microbial Ecology /Microbial Communities - Part II**

**THE SEED ENDOSPHTIC MICROBIOTA OF CITRUS LIMON L. BURM. F.**

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**Backgrounds**

Plant seeds possess a complex microbiota which may play a crucial role in many aspects, such as preservation, germination, seedling development, plant growth and health. In particular, seed endophytic microbiota is gaining more and more consideration due to the fact that it may be vertically transmitted to ensure individual competitive advantages. The *Citrus* species, including *C. limon*, are one of the most economically important evergreen fruit crops in the world.

**Objectives**

- i) Identification and characterization of microbial isolates from *Citrus limon* L. Burm. F. seed endosphere.
- ii) Structure of *Citrus limon* L. Burm. F. seed endosphytic microbiota.

**Methods**

- Surface-sterilization of *Citrus limon* L. Burm. F. seeds.
- Strain isolation and phylogenetic characterization by 16S rDNA sequence.
- Next Generation Sequence (NGS) technology analysis of metagenomic DNA by pyrosequencing of 16S rDNA.
- Fluorescence In Situ Hybridization coupled with Confocal Laser Scanning Microscopy (FISH-CLSM).

**Conclusions**

Culture-dependent approaches allowed the isolation of several bacterial strains belonging to the genus *Staphylococcus* and several fungal strains belonging to the genera *Aspergillus*, *Quambalaria* and *Efibula* from seed endosphere. These results were supported by the detection of bacterial cells and micro-colonies in seed cryosections by FISH-CLSM. In particular, this analysis highlighted the presence of Firmicutes and other bacteria colonizing intercellular spaces. In addition, NGS-based characterization using metagenomic DNA from seed endosphere is being carried out in order to elucidate the microbiota structure.