



**AgroSym**  
2022



**BOOK OF  
ABSTRACTS**

*XIII International Scientific Agriculture Symposium  
"AGROSYM 2022"  
October 6-9, 2022*



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# **BOOK OF ABSTRACTS**

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**Jahorina, October 06 - 09, 2022**

## MICROBIAL COMMUNITY STRUCTURE IN PURSLANE *RHIZOSPHERE* AFFECTED BY DIFFERENT ORGANIC AND INORGANIC FERTILIZER RATES

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### Abstract

*Portulaca oleracea* (purslane) is a wild edible plant of the Mediterranean area that represents an extraordinary food source and a basic ingredient in the so called “Mediterranean diet”. However, little is known about the effects of applying inorganic fertilization versus organic on the plant and on the rhizosphere microbiota within a sustainable use of agricultural resources. Different doses of inorganic fertilization (N-P-K) were applied: a) 300-100-100 (IT1); b) 300-200-100 (IT2); c) 300-200-200 (IT3); d) 600-100-100 (IT4) compared to e) compost extract (equivalent to 300-x-x (OT)). The soil microbial community was analyzed using Illumina MiSeq sequencing. Our results revealed differences in the composition and structure of the rhizosphere bacterial and fungal communities between fertilized and non-fertilized purslane plants according to Non-metric multidimensional scaling (NMDS) analysis. In the case of bacterial communities, only the inorganic fertilization treatments influenced the community composition. The Shannon index significantly decreased under the highest N doses treatment (IT4), showing the OT treatment the highest richness of bacteria and the higher number of indicator families. With respect to the fungal communities, there were three clearly-different fungal communities (C together with IT3, IT1 together with IT2 and IT4, and OT), the values of the richness and Shannon index being significantly lower under the IT1, IT2 and IT4 treatments. This study demonstrates that the responses of growth of purslane plants to fertilization as well as those of the composition and diversity of soil microbial communities are dependent on the fertilizer doses applied and the source of nutrients origin (inorganic or organic).

**Keywords:** *purslane, inorganic fertilizers, microbial community, compost tea.*

**Acknowledgments:** This work was funded by the Spanish Ministerio de Ciencia e Innovación (project PCI2020-112091), General Secretariat for Research and Technology of Greece (Prima 2019-11) and PRIMA foundation under the project VALUEFARM (PRIMA/0009/2019)