MICRO BIOTEC 17

CONGRESS OF **MICROBIOLOGY** AND **BIOTECHNOLOGY** 2017

7th - 9th DECEMBER 2017

PORTO, PORTUGAL

BOOK OF ABSTRACTS

SPM Sociedade Portuguesa de Microbiologia

spbt sociedade portuguesa de biotecnologia

CATÓLICA ESCOLA SUPERIOR DE BIOTECNOLOGIA PORTO

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P-132 - GRAPEVINE GROWTH RESPONSE TO BIOINOCULANTS AND BIOCHAR APPLICATION

Sofia Pereira[1]; Helena Moreira[1]; Alberto Vega[1]; José Couto[1]; João Porto[2]; Natacha Fontes[2]; António Graça[2]; Paula Castro[1]

1 - CBQF – Centro de Biotecnología e Química Fina – Laboratório associado, Escola Superior de Biotecnologia – Universidade Católica Portuguesa/Porto; 2 - Sogrape Vinhos S.A.

Background

Grapevine is a perennial crop that is highly responsive to local environmental conditions and viticulture practices. Along with this, soil microorganisms should be taken into consideration since they provide important ecological services to the plant. Plant growth promoting rhizobacteria and arbuscular mycorrhizal fungi can establish symbiotic association with grapevine roots and due to their plant-beneficial traits they can enhance the growth and quality of the vineyard and the grape. Therefore, the use of such microorganisms as bioinoculants can benefit vegetative and productive parameters of grapevine. Soil amendments, such as biochar, can also improve plant performance and soil structure. Biochar is a product of pyrolysis of organic materials and its importance as an amendment has been recognized in the improvement of soil fertility and water retention.
This work aims to assess the effect of microbial inoculants and biochar on productive parameters of 10-year old grapevines and on vegetative parameters of new grapevines.

Method

The experiment was conducted at a 36-ha vineyard located in North Portugal inside the Vinho Verde appellation, on adult (10 year-old) and on new grapevine plants. In total, 6 treatments with three replicates each were applied in the experimental area, in a total of 18 plots (variety Alvarinho). The treatments applied comprised different combinations of PGPR, AMF, and biochar. Bioinoculants and biochar were applied at the time of the plantation in the new grapevines. In the 10-year old grapevines, bioinoculants were inoculated around plants and a soil scarification was done between lines to apply biochar. Plant performance will be followed for at least 3 growing seasons.

Results & Conclusions

The effect of bioinoculants and biochar application was evaluated at harvest. The number of grape bunches and total fruit yield were measured. Grape quality and nutrient content of 10-year old grapevines were assessed as well as biometric parameters of new grapevines.
This is a multi-year project where successive inoculations are planned to enhance plant performance over the years.

References & Acknowledgments

This work was supported by National Funds through FCT under the project UID/Multi/50016/2013 and by the project Biological tools for adding and defending value in key agro-food chains (bio– n2–value), nº NORTE-01-0145-FEDER-000030, funded by FEDER, under Programa Operacional Regional do Norte-Norte2020. S.I.A. Pereira received an individual research contract within the project bio–n2–value. A. Vega had the support of PhytoSudoe grant SOE1/P5/E0189 funded by FEDER, INTERREG SUDOE. H. Moreira had the support of FCT grant SFRH/BPD/105152/2014. The authors thank to IberomassaFlorestal the supply of biochar.

Keywords: grapevine, bioinoculants, grapevine biofertilization