

Grapevine growth response to bioinoculants and biochar application

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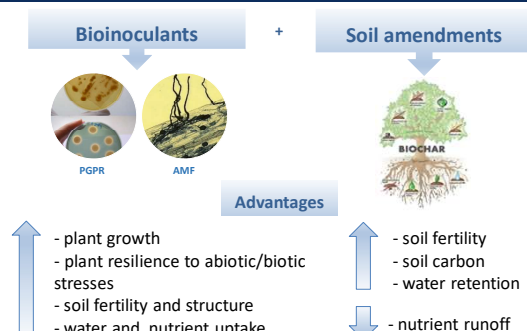
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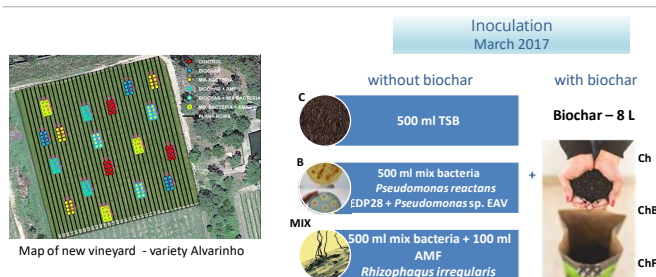
Aim and Scope

Plant growth promoting rhizobacteria (PGPR) and arbuscular mycorrhizal fungi (AMF) can establish symbiotic association with grapevine roots and due to their plant-beneficial traits they can enhance the growth and quality of vineyards.

This work aims to assess the effect of microbial inoculants and soil amendments (biochar) on vegetative parameters of new grapevines and on productive parameters of 10-years old grapevines.

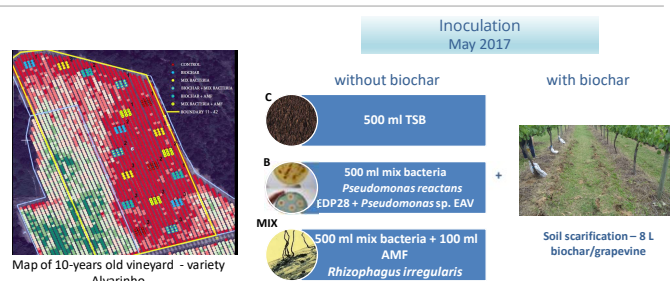


New vineyard

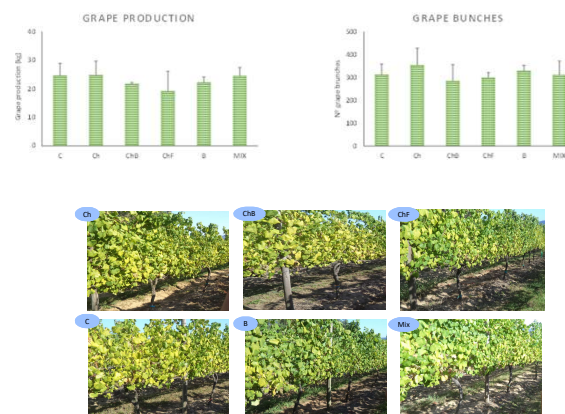
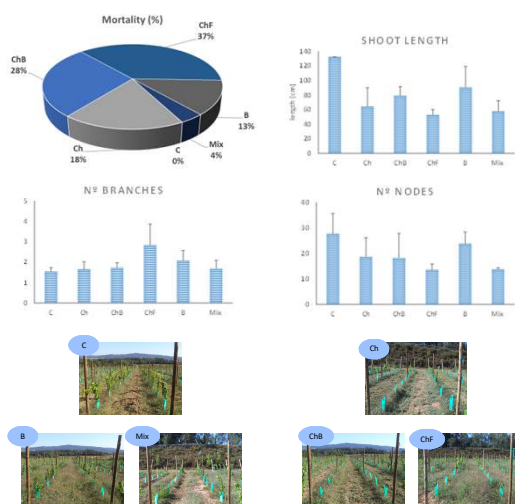


6 treatments x 3 plots: C - controlo; Ch - Biochar; ChB - Biochar + mix bacteria; ChF - Biochar + AMF; B - Mix bacteria; MIX - Mix bacteria + AMF

10-years old vineyard



Results 1st harvest – September 2017



In the first year, no significant differences were obtained between treatments

The time of action of the bioinoculants was very reduced since inoculation occurred in May 2017 and the 1st harvest in September 2017

Conclusions

- This is a multi-year project where plant performance will be followed over successive growing seasons
- Plots will be replanted next year with plants which followed a different inoculation strategy prior transplantation
- The microbial inoculants used in this study have shown to enhance plant performance in previous studies – this raises the question on the transversal use of inoculants across varying environmental conditions and towards different crops
- Field experiments are crucial to validate large scale inoculation strategies.

Acknowledgements

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