

## Book of Abstracts



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## **Resistance to copper in *Lysobacter capsici* AZ78: a starting point for the development of a new sustainable management of *Plasmopara viticola*?**

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**Abstract:** Little is known about the biology of members of the bacterial genus *Lysobacter* although it encompasses species with high potential in plant protection. In this work, we investigated on biological features of *L. capsici* AZ78 a strain capable to control of *Plasmopara viticola*, the causal agent of grapevine downy mildew. Interestingly, it has been assessed that AZ78 resists copper ions and its resistance to this metal is probably due to the presence of genes coding for copper oxidase (*copA*) and copper exporting P<sub>IB</sub>-type ATPases (*ctpA*). Resistance to copper allowed *L. capsici* AZ78 to be combined with a low-dose of a copper-based fungicide, leading to more effective control of grapevine downy mildew. Furthermore, *L. capsici* AZ78 persists in the phyllosphere of grapevine plants and tolerates environmental stresses such as starvation, freezing, mild heat shock and UV light irradiation. These biological traits suggest that *L. capsici* AZ78 could be a suitable candidate for developing a new biofungicide to be used in combination with copper to control grapevine downy mildew.

**Key words:** *Lysobacter capsici*, *Plasmopara viticola*, copper, environmental stress