FICHA DE TESIS

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Director(a) de tesis	Michael Seeger
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Resumen de la Tesis	**Abstract**

Arbuscular mycorrhizal fungi (AMF) and plant growth-promoting rhizobacteria (PGPR) are beneficial microorganisms that improve plant stress tolerance, nutrition, and growth. AMF and PGPR enhance the production of plant secondary metabolites, including volatile organic compounds (VOCs) that play a key role in the interaction of plants with the environment and are involved in defence mechanisms. The hypothesis of this study was that AMF and PGPR affect the production of VOCs in grapevine plants. The specific aims were (i) to characterise AMF associated to vineyards of Central Chile, (ii) to characterise PGPR associated to vineyards of Central Chile, (iii) to determine the effect of AMF and PGPR in growth parameters of grapevine plants, and (iv) to determine the effect of AMF and PGPR on VOCs and on the expression of geranyl diphosphate synthase and farnesyl diphosphate synthase in grapevine. The analysis of AMF diversity showed dominance of *Glomeraceae* in all the study sites, while PGPR were mainly represented by *Proteobacteria*. Three experiments were set up to evaluate the effect of AMF and PGPR on VOCs. Grapevines were inoculated with the AMF and/ or PGPR. All microbial inocula promoted plant growth. Additionally, AMF strongly