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INSIGHTS ON THE INTERACTIONS AMONG NON-NATIVE AND NATIVE HETEROBASIDION SPECIES AND THE ECTOMYCORRHIZAL SYMBIONT TUBER BORCHII ON PINUS PINEA

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The protective role played by symbionts against plant pathogens has been extensively documented. However, little is known on the effects of pathogens on the ectomycorrhizal (ECM) symbiosis. In this work, through a six-months inoculation experiment, we studied the effects of fungal plant pathogens on both the ECM symbiosis and the expression of genes putatively involved in the symbiosis, in a three-actors model system including the non-native and the native pathogens *Heterobasidion irregulare* and *H. annosum*, the ECM symbiont *Tuber borchii* and the common host species *Pinus pinea*. The two pathogens induced the same macroscopic reaction in the plant-symbiont complex with mycorrhizal density increasing with the pathogen colonization along the stem. The gene expression analyses showed that genes regulated in *T. borchii* were more than twice in plants inoculated with the native pathogen compared to that inoculated with the non-native one. Although the consequences of this differentiated gene expression is largely unknown, our results suggest that a recognition mechanism between the native symbiont and the native pathogen through a host plant-mediated signal transduction may be involved.

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