Comparative studies on antagonistic effects between invasive and native fungal pathogens and ectomycorrhizal fungi

UNIVERSITÀ DEGLI STUDI DI TORINO

COMPARATIVE STUDIES ON ANTAGONISTIC EFFECTS BETWEEN INVASIVE AND NATIVE FUNGAL PATHOGENS AND ECTOMYCORRHIZAL FUNGI. **L. Giordano, G. Lione, E. Zampieri, P. Gonthier.** *Department of Agricultural, Forest and Food Sciences (DISAFA), University of Torino,*
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The North American pine-associated root rot agent *Heterobasidion irregulare* was introduced in central Italy during World War II and is currently distributed in forest stands along 103 km of coastline west of Rome. Although many papers dealing with the ecological impacts associated with the invasion have been published, little is known on the consequences that this non-native pathogen may have on host plant symbionts such as ectomycorrhizal (ECM) fungi. Here we tested, through dual culture technique, whether *H. irregulare* and the native Eurasian species *H. annosum* differ in their antagonistic effects against the ECM fungus *Suillus luteus*. Morphological observations and measurements were performed during the experiments and, for each genotype in dual culture, the Inhibition Growth Rate (IGR in %) of average mycelium surface relative to the control was calculated. Results showed that *S. luteus* was considerably and significantly inhibited by native and non-native species of *Heterobasidion* spp. (*S. luteus* IGR>70%; $P<0.05$) indicating that the pathogens can modulate the growth of the symbiont. Nevertheless, it was not possible to distinguish the effects of the non-native pathogen from that of the native one on the ECM fungus, suggesting that the IGRs observed depend on the genotypes rather than on the species of *Heterobasidion*.