Meeting on
Plant – Microbe
Interactions

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European chestnut tree (*Castanea sativa* Mill.), as fruit and wood producers, have a great economic importance in Trás-os-Montes region (Northeast of Portugal). In this agro-ecosystem, the *Hypholoma fasciculare* and the *Pisolithus tinctorius* are the most commonest fungi among the saprophytic and mycorrhizal trophic groups, respectively. Although, interactions between ectomycorrhizal and saprotrophic fungi have been previously observed, their effects on plant growth and health are scarcely known. Therefore, the aim of the present work was to assess the effect of the interaction between *P. tinctorius* and *H. fasciculare* on growth, nutritional status and physiology of *C. sativa* seedlings. In pot experiments, *C. sativa* seedlings were inoculated with *P. tinctorius* and *H. fasciculare* individually or in combination. Plants inoculated with *P. tinctorius* showed a higher growth and an increased foliar-N, -P, and photosynthetic pigment contents. These effects were suppressed when *H. fasciculare* was simultaneously applied with *P. tinctorius*. However, when plants were inoculated with *P. tinctorius* and after 30 days with *H. fasciculare* the same parameter values were very close to those from plants only inoculated with *P. tinctorius*. These results are most probably due to the interaction between *P. tinctorius* and *C. sativa* roots and the ability of mycorrhizae formation before *H. fasciculare* application. Once formed, the chestnut seedlings are able to take advantage from the mycorrhizal association. This work confirms the antagonistic interaction between ectomycorrhizal and saprotrophic fungi and demonstrates that fungal interactions affect the physiological processes of the ectomycorrhizal host.

Key words: *Castanea sativa*, fungi interaction, ectomycorrhizal fungi, saprotrophic fungi, mycorrhization

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