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## **INFLUENCE OF HYPHOLOMA FASCICULARE IN PORTUGUESE CHESTNUT GROVES SUSTAINABILITY**

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The chestnut tree (*Castanea sativa*) has an enormous economic importance at national level, mainly due to the value of the fruit (chestnut) and the high quality of the wood. The presence of the fungus *Hypholoma fasciculare* has been observed in chestnut orchard soils of Trás-os-Montes (Portugal). Although it is described as being a saprophyte, preliminary studies have demonstrated that *H. fasciculare* could cause serious damage to the chestnut trees. On the other hand, it has an expressive antagonist action against other soil-borne fungi present in chestnut groves.

In order to assess the consequences arising from the presence of this fungus on soil microbial diversity, the effect of the presence of *H. fasciculare* was evaluated. In this way, the fungal community of soils from three chestnut groves presenting different levels of *H. fasciculare* was compared. After DNA extraction from 10 soil cores from each soil, the ITS regions were amplified using the adequate primers for fungal sequences and 454 pyrosequencing was used for the assessment of soil metagenomes.

Results will be presented taking into account the diversity of fungal trophic groups that could be important for chestnut sustainability, mainly the ectomycorrhizal fungi. These results will contribute to the identification of soil microbial species most affected by the presence of *H. fasciculare*, making it possible to assess the action of this fungus on beneficial mycorrhizal fungi to the chestnut tree.

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