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Abstracts

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Innovative silvicultural treatments to enhance soil biodiversity in artificial black pine stands: monitoring mycological diversity

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The data presented in this work are part of a LIFE Biodiversity project (SELPBIO LIFE) presented by 5 partners with the main goal to demonstrate the positive effects of an innovative silvicultural treatment on black pine forests. The specific management applied improves growth rates and stands stability and enhance the level of biodiversity of various soil components (flora, fungi, bacteria, mesofauna, nematods and microarthropods). The results regarding the fungal community present before silvicultural treatment in round plots of 314 m², localized 27 on Pratomagno and 27 on Mount Amiata (Tuscany, Italy), are here reported. The study follows classic mycocoenological method counting and identifying fruit bodies of all macromycetes; fungal biomass (fresh and dry weight) weighed to the nearest 0.01 g, was also detected. Over the study period (September- December 2014) 6704 carpophores, 180 different fungal species, with a fresh and dry weight of 44,953 and 5,395 kg respectively, were observed. The most frequent species on Pratomagno was *Russula xerampelina*, followed by *Chroogomphus rutilus*, *Clitocybe nebularis*, *Inocybe geophylla*. On M. Amiata *Galerina marginata* was collected in 23 plots out of 27 and then less frequent *Hemimycena gracilis*, *Mycena arcangeliana* and *Phellodon niger*. To underline the high fungal biomass found on Pratomagno with nearly 36 kg (on M. Amiata it was only 9 kg) due principally to *Clitocybe nebularis* (13 kg). The values of the Shannon and Pielou indexes indicated that the two communities were characterized by a low diversity and a good evenness of the species.