respectively. However, knowledge on the impact of plant diversity on the fungal community composition of subtropical forest ecosystems is limited. The study was carried out within the frame of the world’s largest biodiversity and ecosystem functioning experiment in forest ecosystems, located in southeast China. In 2009/2010, two study sites were planted with 42 tree species. These comprise equal proportion ectomycorrhizal or arbuscular mycorrhizal tree species following tree diversity gradient levels of 1, 2, 4, 8, and 16 plants per plot. This is an ideal field experimental platform to study the role of plant diversity on soil fungal community in a subtropical forest ecosystem. In October 2011, soil cores from a subset of 4 and 8 tree species diversity levels were sampled from one of the study sites. The fungal community was analysed employing pyrotag sequencing of the fungal ITS rDNA region, which will provide a deep-resolution of the fungal community. In this poster, we will present results on the fungal diversity and the influence of plant diversity, soil and plant related parameters on the fungal community composition. The main drivers for fungal community composition with the extent of mycorrhizal fungi will be identified for this early stage of forest development and its implication on the functioning of this particular forest ecosystem will be discussed.

Diversity of fungal mycorrhiza in *Eucalyptus globulus* forests in the region of Panafiel, North Portugal

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*Eucalyptus (*Eucalyptus globulus*) is one the plant species known to form both types of mycorrhizal symbiosis (ECMF and AMF) and that may be one of the causes of its high nutrient and water use efficiencies. Eucalyptus is original from Australia, but grows very well in Portugal where it is cultivated for the paper pulp industry. The growth of eucalyptus raises concerns on its impact on biodiversity – since it is planted as intensive and dense forests – and on soil fertility. Taking the perspective that soil is the biggest reservoir of biodiversity, the objective of this study was to assess the diversity of AMF in a forest planted with *E. globulus* in the region of Panafiel, northern Portugal, fertilized or not with nitrogen at the start of planting. AMF diversity was assessed using nested PCR-DGGE. Soil samples were collected in spring and autumn and subjected to DNA extraction, nested PCR-DGGE, sequencing, and analysis of the sequences. The results showed that nitrogen fertilization or season had no influence on the AMF community of *E. globulus*, where there was a predominance of the FMA species *Scutellospora heterogama* (synonymous: *Endogone heterogama* T.H. Nicolson & Gerd, 1968, *Gigaspora heterogama* (T.H. Nicolson & Gerd.) Gerd. & Trappe, 1974). These results are very interesting since it is known that this fungi is very efficient in taking up