

On-line Suppl. Table 1. Ecological measures of diversity. P_i is the relative abundance of each identified species per sampling site and calculated by the following formula $P_i = n_i/N$, where n_i is the spore numbers of a species and N is the total number of identified spore samples. H'_{max} is the maximal H' and calculated by the following formula: $H' = \ln S$, where S is the total number of identified species per sampling site. a or b was the total number of identified species per sampling site and j is the number of identified species common to both sites.

Diversity measures	Definition	Measurement
Spore density (SD)	Number of spore in 100 g of soil	
Species richness (SR)	Number of identified arbuscular mycorrhizal fungi species per soil sample	
Relative abundance (RA)	Refers to how common or rare a species is relative to other species in a community	$RA = \frac{\text{spore number of a species (genus)}}{\text{total number of identified spore samples}} \times 100$
Isolation frequency (IF)	/	$IF = \frac{\text{number of soil samples where a species (genus)}}{\text{total number of soil samples}}$
Shannon-Wiener index of diversity (H')	Mathematical measure of species diversity in a community	$H_0 = -\sum P_i \ln P_i$
Evenness (E)	Also called equitability. Refers to homogeneity of the species, $0 < E < 1$, $E=1$ means that all species have the same frequency	$E = \frac{H'}{H'_{max}}$
Simpson's index of dominance (D)	The probability that two randomly selected individuals in a community belong to the same species. $0 < D < 1$.	$D = \sum [n_i(n_i - 1) / N(N - 1)]$
Sorensen's coefficient (Cs)	A statistic used for comparing the similarity of two sites	$Cs = 2j / (a+b)$