

Table S1. Description of response variables following Pirttilä and Frank (2011) and Boddy et al. (2008). The serial number of models reflects our dividing methods: models F are built on functional groups, while models H on species groups with a similar host tree preference.

Abbreviation in Fig. 3.	Serial number of model	Description
Full sample	–	Total number of observed macrofungal species.
All terricolous saprotrophic fungi	F1	All the observed macrofungal species colonizing litter or any kind of buried plant debris in the uppermost 10 cm of the soil and never forming mycorrhiza with trees.
All ECM fungi	F2	All the observed symbiotic fungi with the ability to form ectomycorrhiza with trees.
All wood-inhabiting fungi	F3	All the observed macrofungal species colonizing twigs, branches, logs, or snags of dead trees or trunks or roots of living trees.
TS cord formers	F4	Very combative terricolous saprotrophic (TS) fungi establishing via mycelial cords.
Non-parasites	F5	Wood-inhabiting macrofungi colonizing dead plant tissues.
Parasites	F6	Wood-inhabiting macrofungi with a necrotrophic lifestyle completing the full or a part of their life cycle in living trees.
White rotters	F7	Wood-inhabiting fungi causing a white rot.
Brown rotters	F8	Wood-inhabiting fungi causing a brown rot.
Endophytes	F9	Parasitic macrofungi, with a latent endophytic phase in their life cycle, living inside healthy tissues of trees; subsequently, can switch to a pathogenic, a bio-necrotrophic or a saprotrophic lifestyle to feed, grow and mate on dying or dead branches as primary wood-decomposers.
Early ruderals	F10	Ruderal macrofungi with weak combative abilities establishing via latent invasion in living wood or via spores on freshly exposed dead branches and logs.
Combative invaders	F11	Combative white-rotters on logs and branches in early to intermediate stages of decay; from establishment via spores, or via latent invasion in living wood.
Heart rotters	F12	Stress tolerant or combative macrofungi causing white or brown rot in trunks of living trees and logs of early to late decay stages; establishment via heart rot or latent invasion in living trees.
Late stage specialists	F13	Host generalist macrofungi utilizing residual compounds from previous decay, establishing by airborne spores.
W cord formers	F14	Very combative wood-inhabiting fungi establishing via mycelial cords.
All preferring angiosperms	H1	All the observed macrofungi with an exclusive preference for angiosperms.
All preferring gymnosperms	H2	All the observed macrofungi with an exclusive preference for gymnosperms.
All host generalists	H3	All the observed macrofungi with no considerable host tree (or litter) preference.
TS preferring angiosperms	H4	Terricolous saprotrophic macrofungi with an exclusive preference for litter of angiosperms.
ECM preferring angiosperms	H5	Ectomycorrhizal macrofungi with an exclusive preference for angiosperms.
W preferring angiosperms	H6	Wood-inhabiting macrofungi with an exclusive preference for angiosperms.
TS preferring gymnosperms	H7	Terricolous saprotrophic macrofungi with an exclusive preference for litter of gymnosperms.
W preferring gymnosperms	H8	Wood-inhabiting macrofungi with an exclusive preference for gymnosperms.
TS host generalists	H9	Terricolous saprotrophic macrofungi with no considerable host preference.
ECM host generalists	H10	Ectomycorrhizal macrofungi with no considerable host preference.
W host generalists	H11	Wood-inhabiting macrofungi with no considerable host preference.

References

- Boddy, L., Frankland, J. C., van West, P. (eds). 2008. *Ecology of Saprotrophic Basidiomycetes*. The British Mycological Society, Academic Press, London, 372 pp.
- Pirttilä, A. M., Frank, A. C. (eds). 2011. *Endophytes of Forest Trees: Biology and Applications*. Springer Science+Business Media B.V., Dordrecht, 319 pp.