

1 **Volatile organic compound patterns predict fungal trophic mode and**
2 **lifestyle**

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8 **Supplementary Information**

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10 **Supplementary Figure S1**

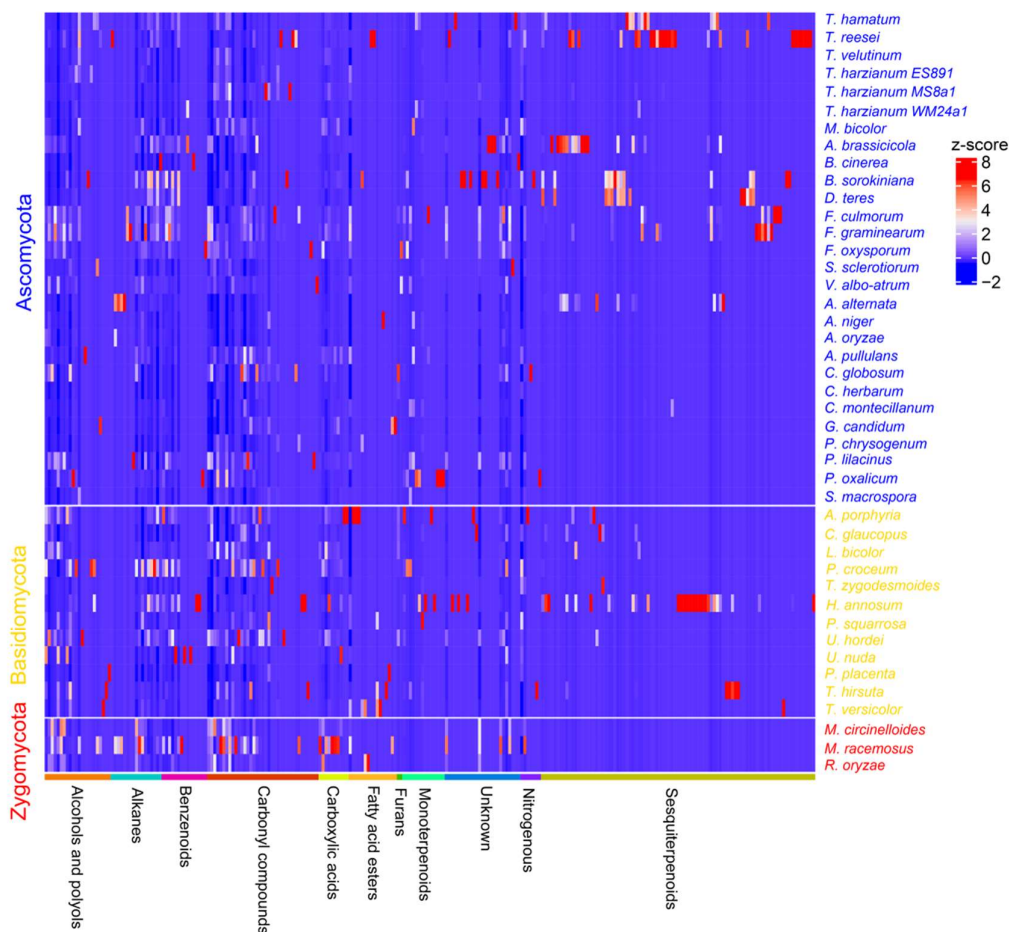
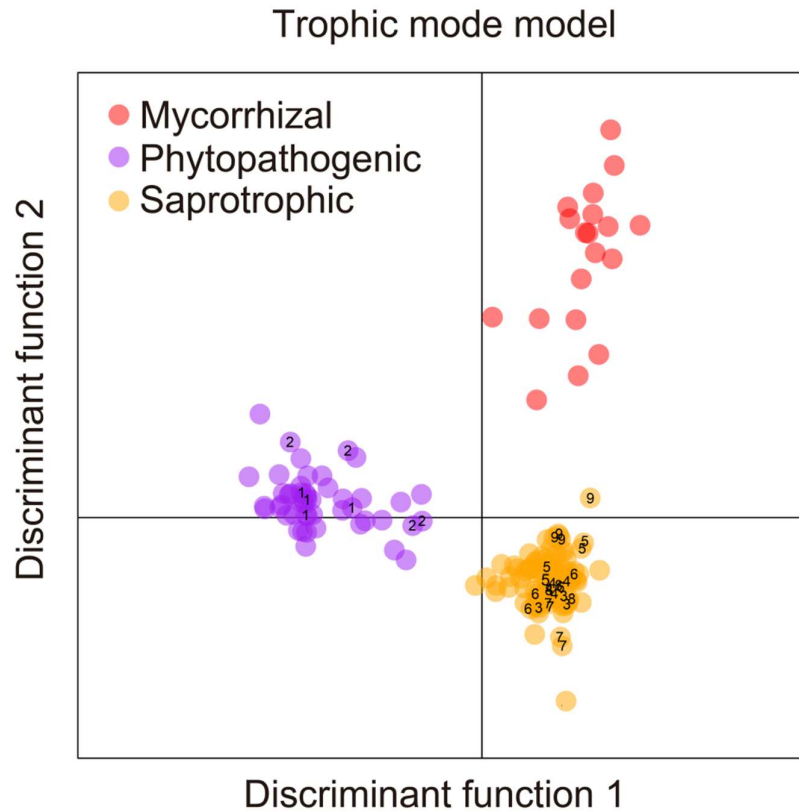


Fig. S1. Heatmap of fungal volatile organic compounds (fVOC) emission profiles from the examined 43 fungal species. The emission intensity of fVOCs grouped in structural classes is shown for each fungal species. The emission rates (ncps cm⁻² s⁻¹ and pmol cm⁻² h⁻¹) based on PTR-MS and GC-MS data, respectively, are color coded: red indicates high and blue indicates low emission.

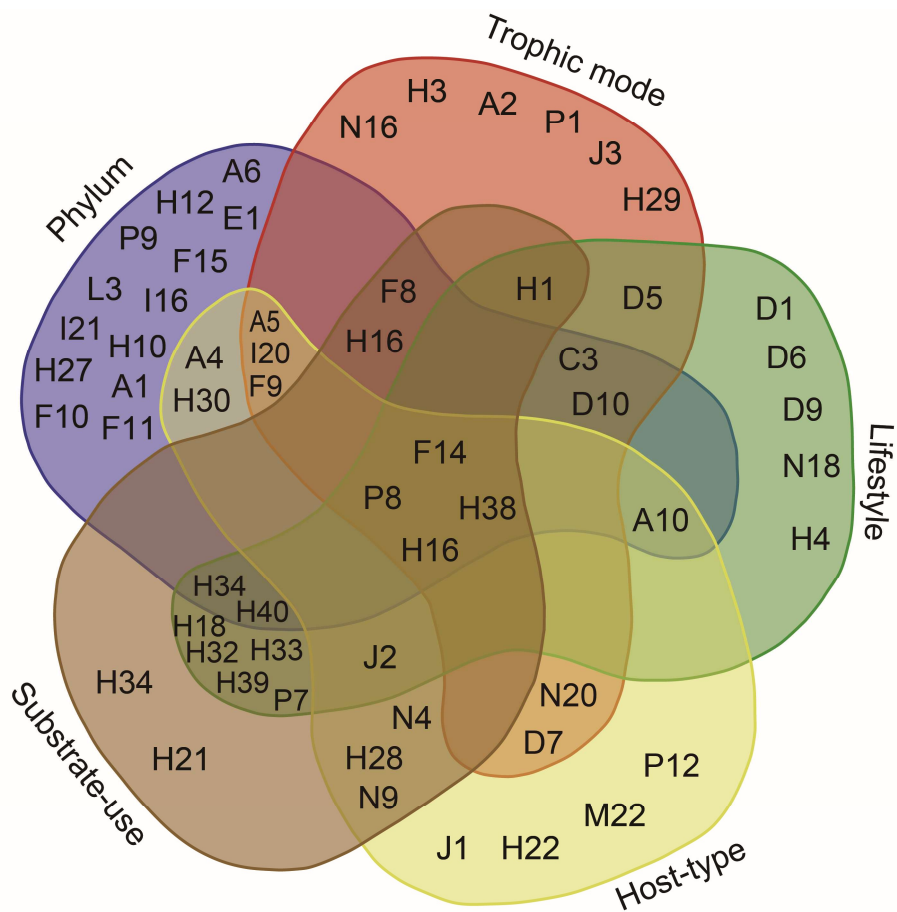


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23 **Fig. S2.** Functional characterization of fungi using the complete fungal volatile organic
 24 compound (fVOC) profiles. The discriminant analysis of principal components (DAPC)
 25 model comprise trophic mode when an alternative grouping of the fungal species to
 26 different guilds is used. The numbers 1-7 denote the fungal species for which the trophic
 27 mode was changed to the alternative group (i.e. *Alternaria alternata* (#1) and
 28 *Aspergillus niger* (#2) were moved from saprophytes to phytopathogens, *Fusarium*
 29 *oxysporum* (#3) from phytopathogens to saprophytes and *Trichoderma* spp. (#4-7) from
 30 mycoparasites to saprophytes; for details of the alternative guild and related references
 31 please see Supplementary Table S1¹). The results show scatter plots with dots denoting
 32 individual fungus. Detailed parametric configurations of DAPC models are provided in
 33 the materials and methods.

34 **Supplementary Figure S3**

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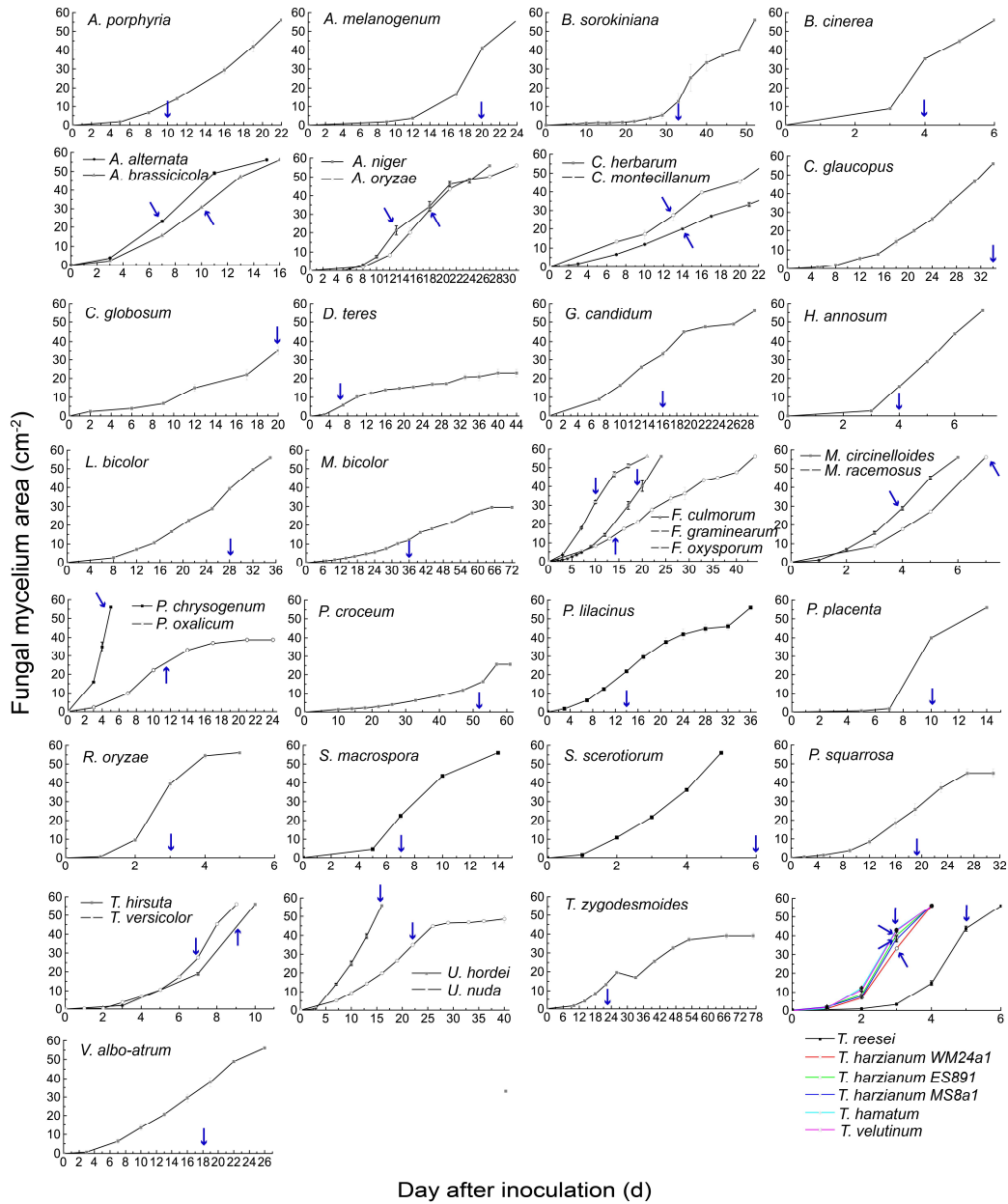
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38 **Fig S3.** The Venn plot indicates the number of unique and shared fungal volatile organic
39 compounds (fVOCs) between fungi grouped according to phylum, trophic mode,
40 lifestyle, substrate-use and host-type. The letter-number combinations refer to the
41 compounds listed in Supplementary Tables S2 and S3¹.

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Supplementary Figure S4



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46 **Fig. S4.** Growth curves of the 43 investigated fungi. The time points for emission
47 measurements were chosen to lie in the exponential growth stage of each fungus and
48 were determined in preceding experiments from the maximum of the first derivative of
49 the growth curve. Blue arrows indicate the time points for the start of fungal volatile
50 organic compound (fVOC) measurements. Data are shown as means \pm SE (n = 5
51 biologically independent samples).
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53 **References:**

54 1 Supplementary Data: Supplementary Tables S1-S6. [DOI:10.17605/OSF.IO/BVA2Q](https://doi.org/10.17605/OSF.IO/BVA2Q)
55 <https://osf.io/bva2q/>

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