



PhD project title: Secondary metabolome dynamics in structured artificial microhabitats

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Abstract:

The proposed work aims at establishing structured surface-microhabitats to expose basidiomycetes to various biotic and abiotic stimuli and - in a stepwise approach – to a combination thereof. Primary objective is to mimic complex environmental influences that basidiomycetes are exposed to in a natural habitat and to investigate the consequences on secondary metabolism and, thus, on organismic consortia. The factors/stimuli include, among others, eukaryotic microbes (amoeba, fungi), prokaryotes, invertebrate predators of fungal hyphae, as well as chemical gradients (pH, sources of reduced nitrogen), and light. Methodologically, this work relies on LC/MS/metabolomics, qPCR, and RNAseq to monitor - as response to the above stimuli - the temporal and spatial dynamics of those metabolites that are known or likely to positively or negatively impact microbial communities.