

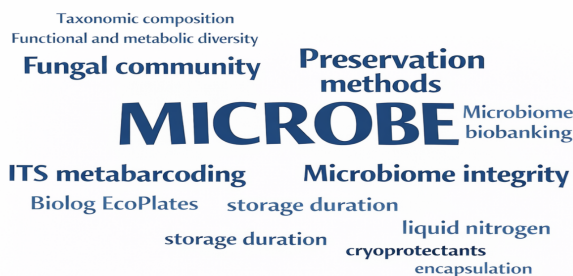
Preserving viable seed microbiota: what happens to fungi ?



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Context & objectives :

MICROBE is an EU project dedicated to preserving the taxonomic and functional composition and diversity of viable microbiome communities through technological validation.

Our research focuses on the effects of 9 preservation conditions on the taxonomic composition and functional diversity of seed microbiota. This poster focuses on the fungal portion of the community.

Results

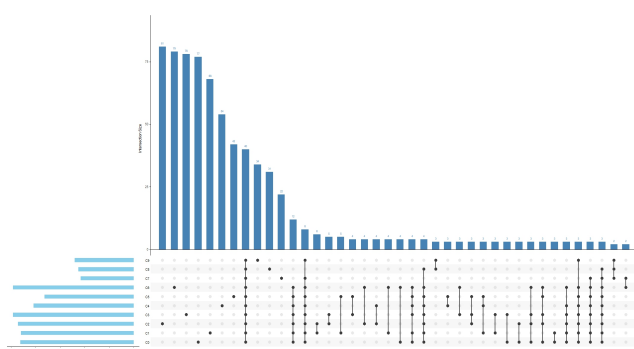


Figure 1: Upset plot showing shared and condition-specific ASVs across conservation conditions (C0 : initial condition). Left bars indicate total ASVs per condition, top bars indicate exclusive ASVs per intersection.

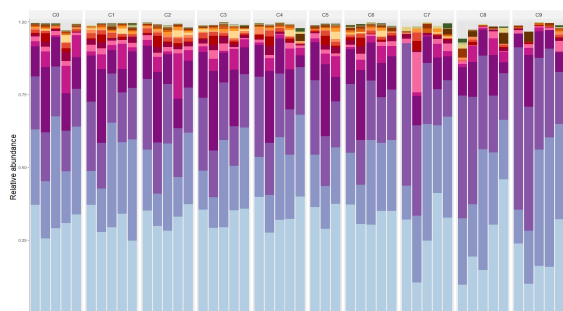
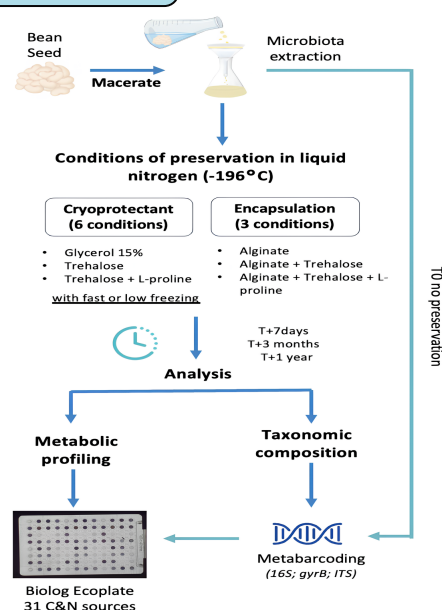


Figure 2: Taxonomic profiles at the genus level (20 most abundant genera) of the fungal community, based on ITS primers, for the initial condition (before conservation) and all tested conservation methods.

Experimental design



Preliminary results at the ASV level show that the initial condition has a certain number of unique ASVs (77), while the others, more than twice this number, are shared with at least one of the other conservation methods.

Moreover, except for several genus, all of the 20 most abundant genera showed no significant differences between the initial condition and the various tested conservation methods.

Conclusions & perspectives

You want to learn more about the project ?



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The conservation methods evaluated appear robust, as they do not alter the major characteristics of fungal communities, these approaches preserve the overall integrity of the microbiome in terms of diversity and dominant taxonomic composition. Nevertheless, fine-scale analyses reveal subtle variations at the ASV level, indicating that specific components of the microbiome may respond differently to conservation conditions without affecting the community as a whole.

Future work should extend this analysis to the bacterial community and explore metabolic and functional responses using the data obtained with EcoPlates. Highlighting taxa that are selectively favored by specific conservation methods. These approaches will provide a more comprehensive understanding of how conservation conditions influence both the structure and functionality of the seed microbiome.