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Facoltà di Scienze e Tecnologie
Faculty of Science and Technology

Aerial deposition of polyethylene microplastics affects tomato (*Solanum lycopersicum* L.) rhizosphere soil ecology

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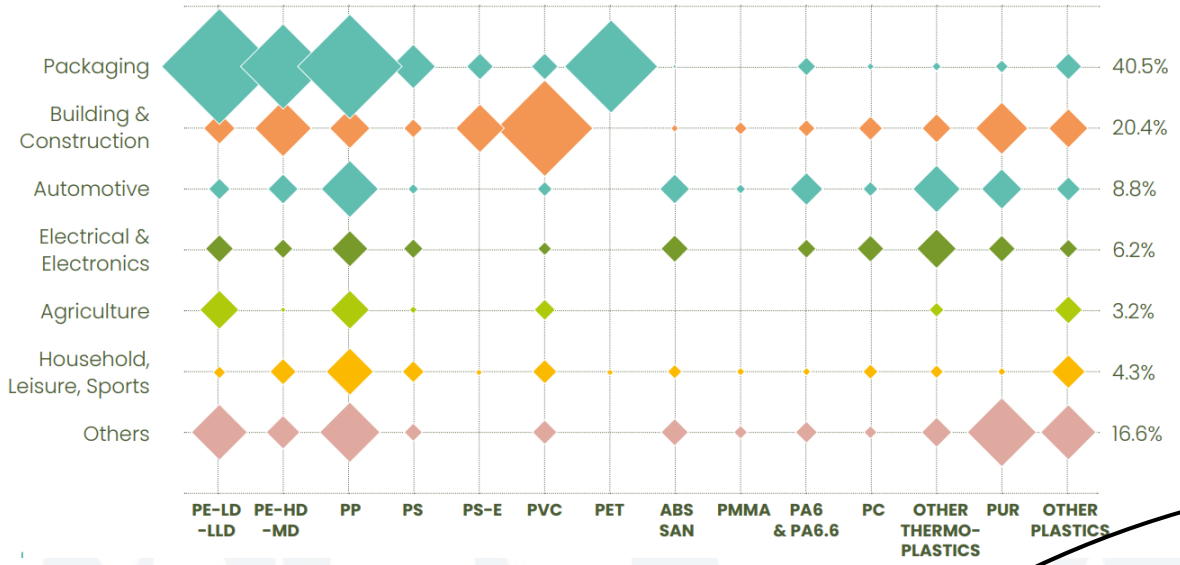
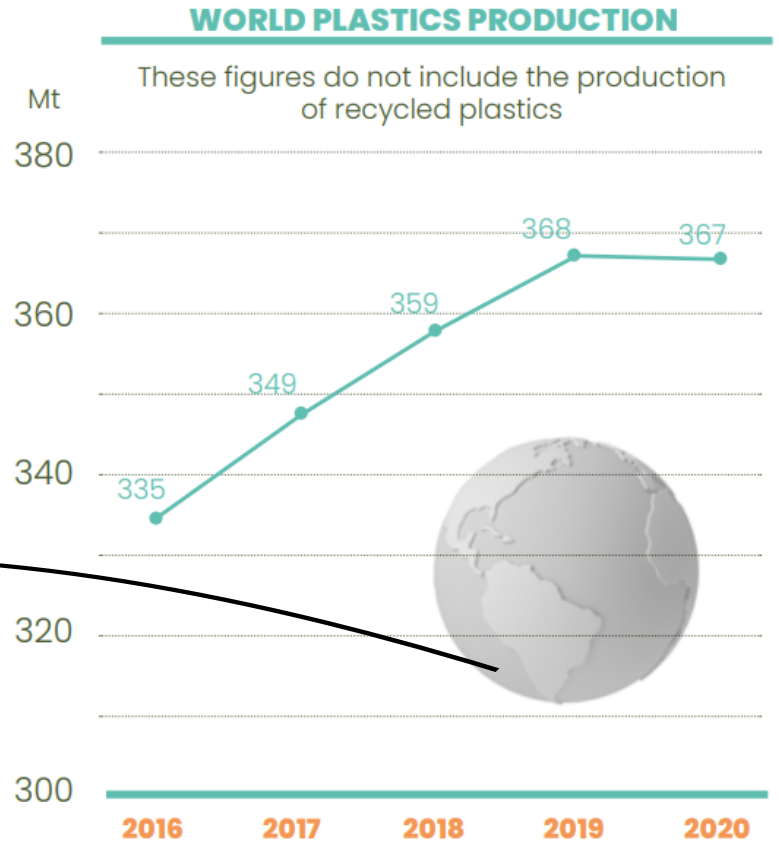
Global Symposium on Soils for Nutrition | 26-29 July 2022

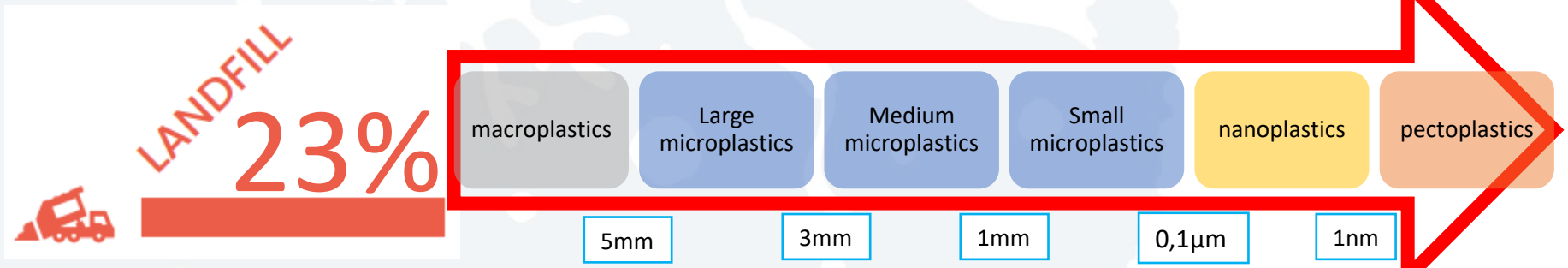
GLOBAL SOIL

Introduction

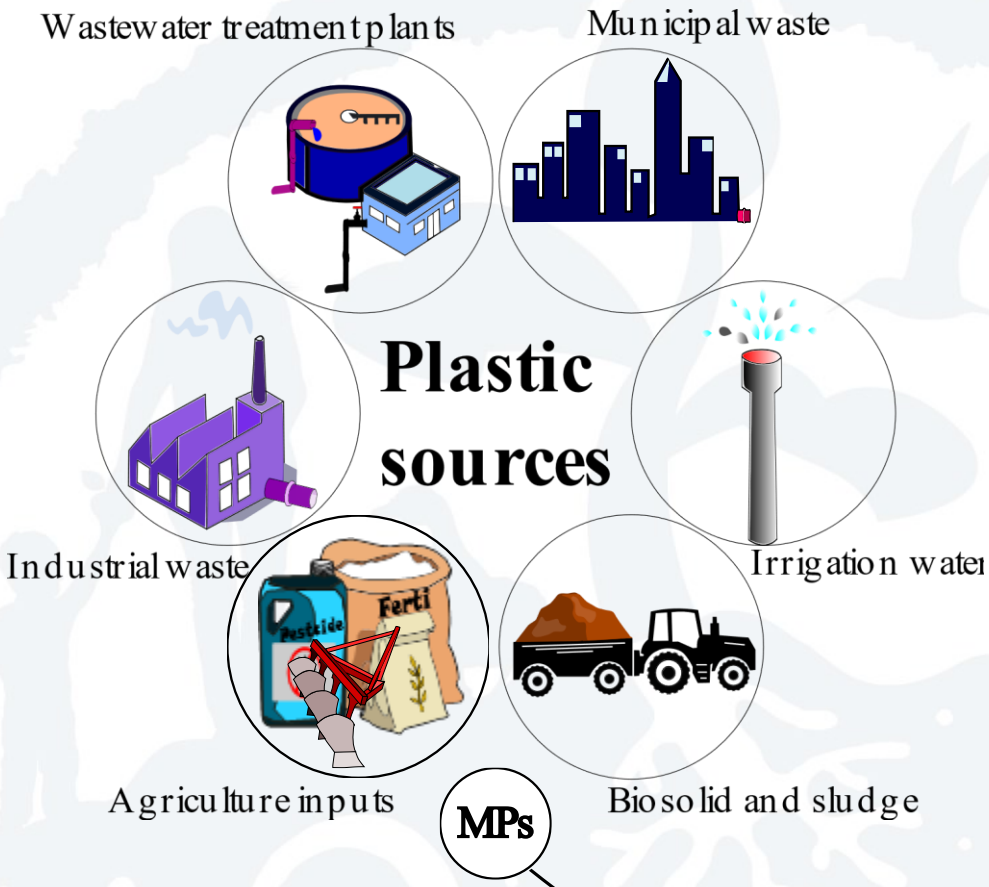


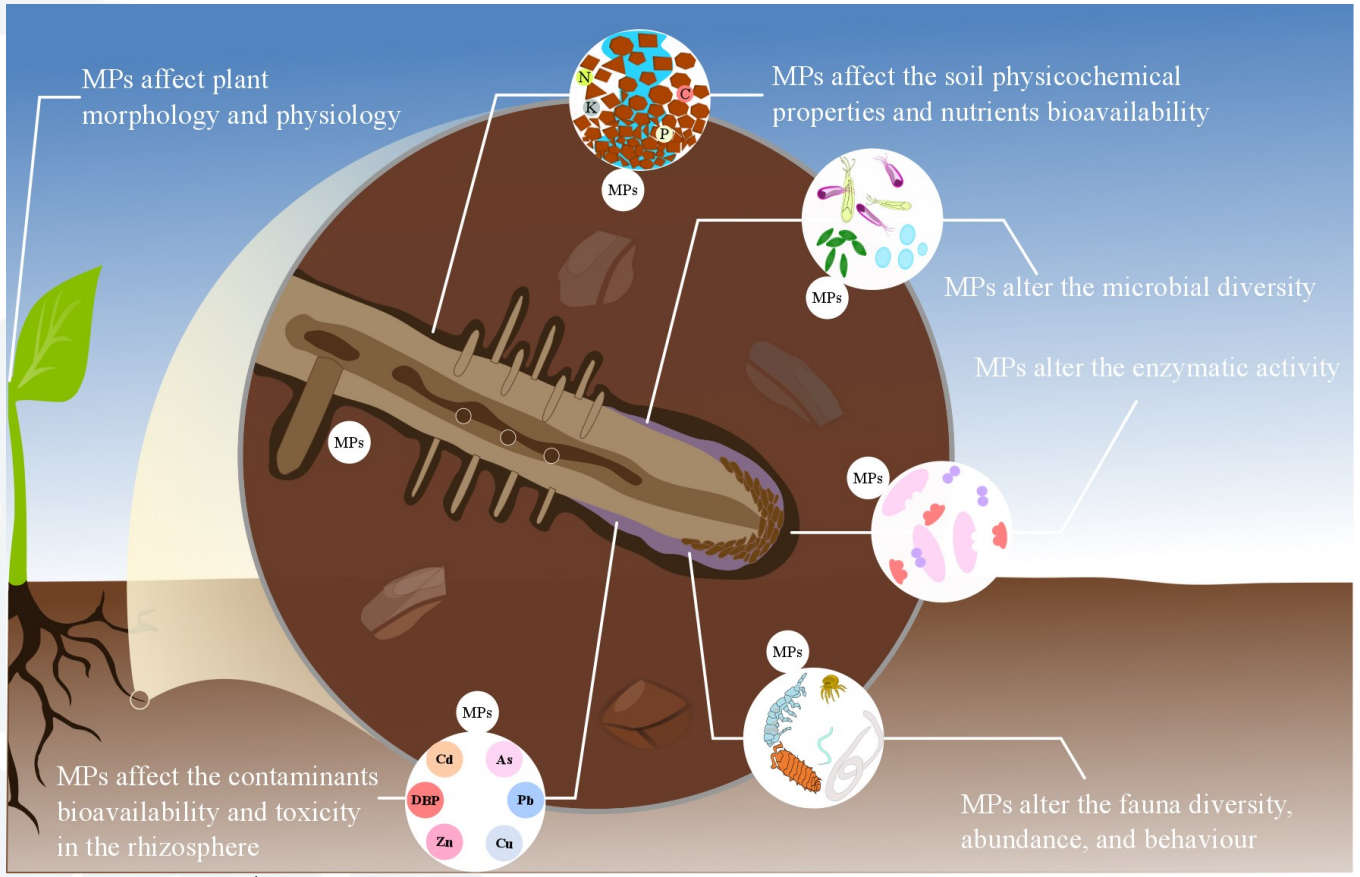


(PlasticsEurop, 2021)



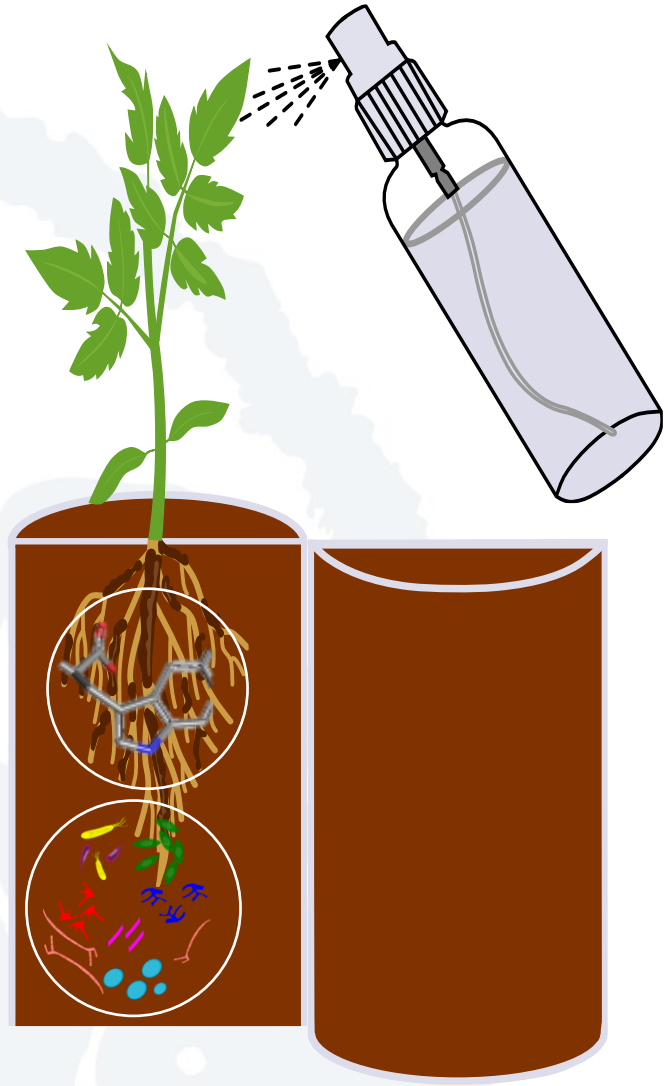
Introduction





(Bouaicha et al., 2022)

Objective



PE-MS

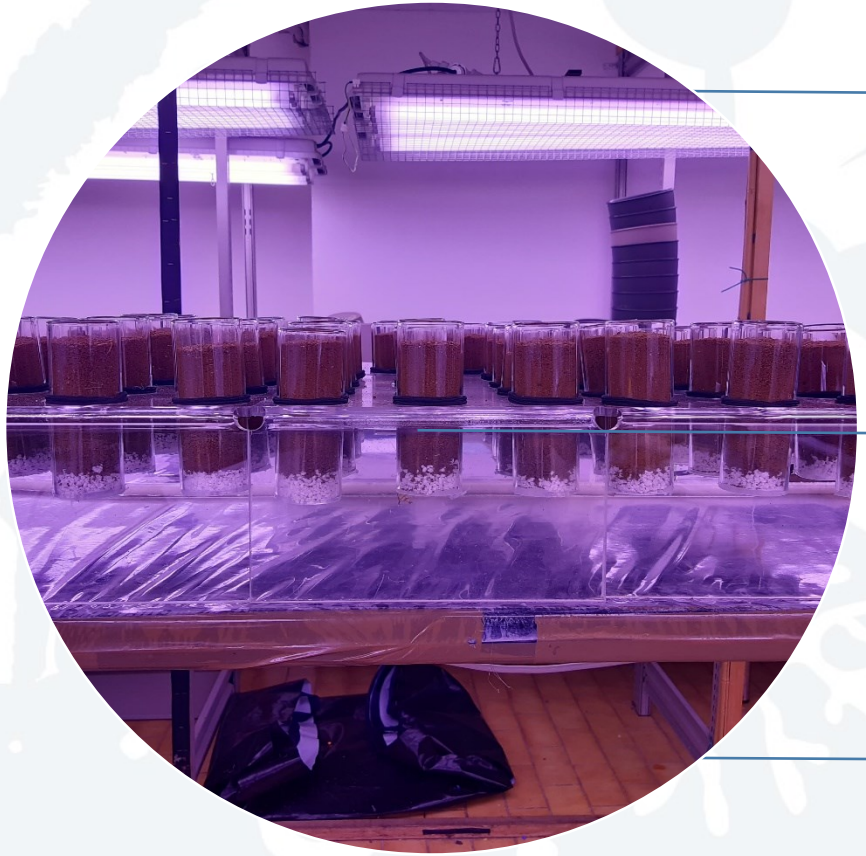
Control (DSW)

10 mg L^{-1}

100 mg L^{-1}

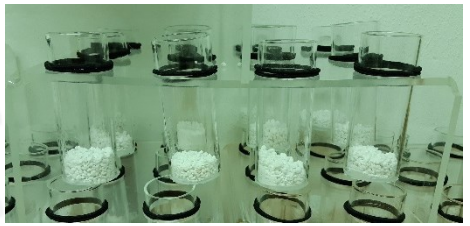
1000 mg L^{-1}

Material



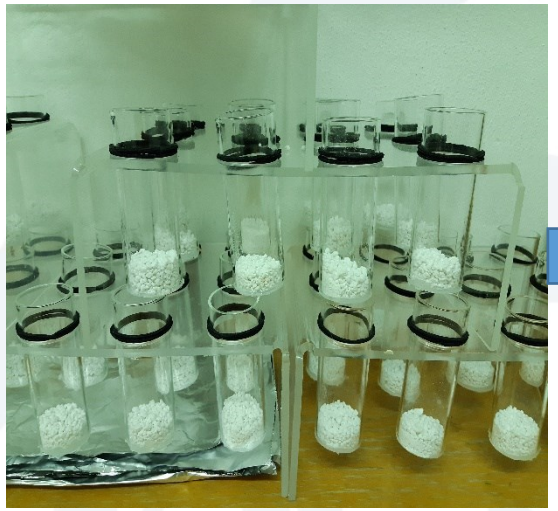
Cospheric

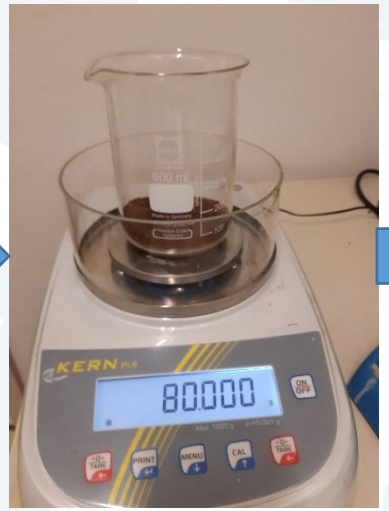
SIGMA-ALDRICH

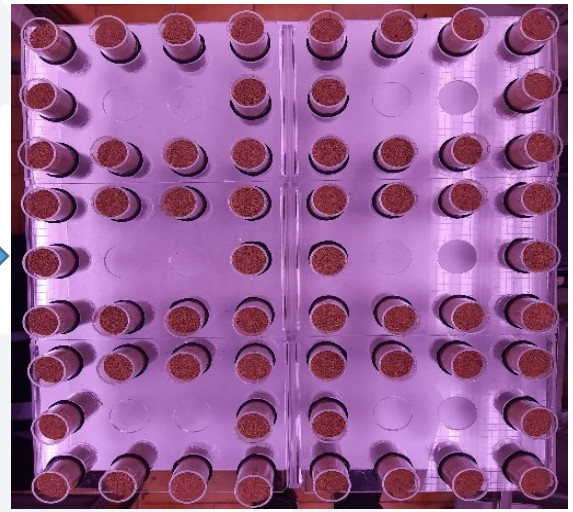


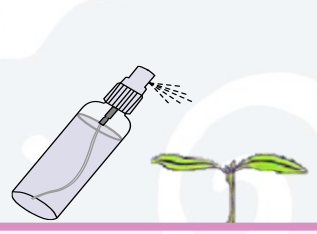
Termeno-Bolzano

Methods



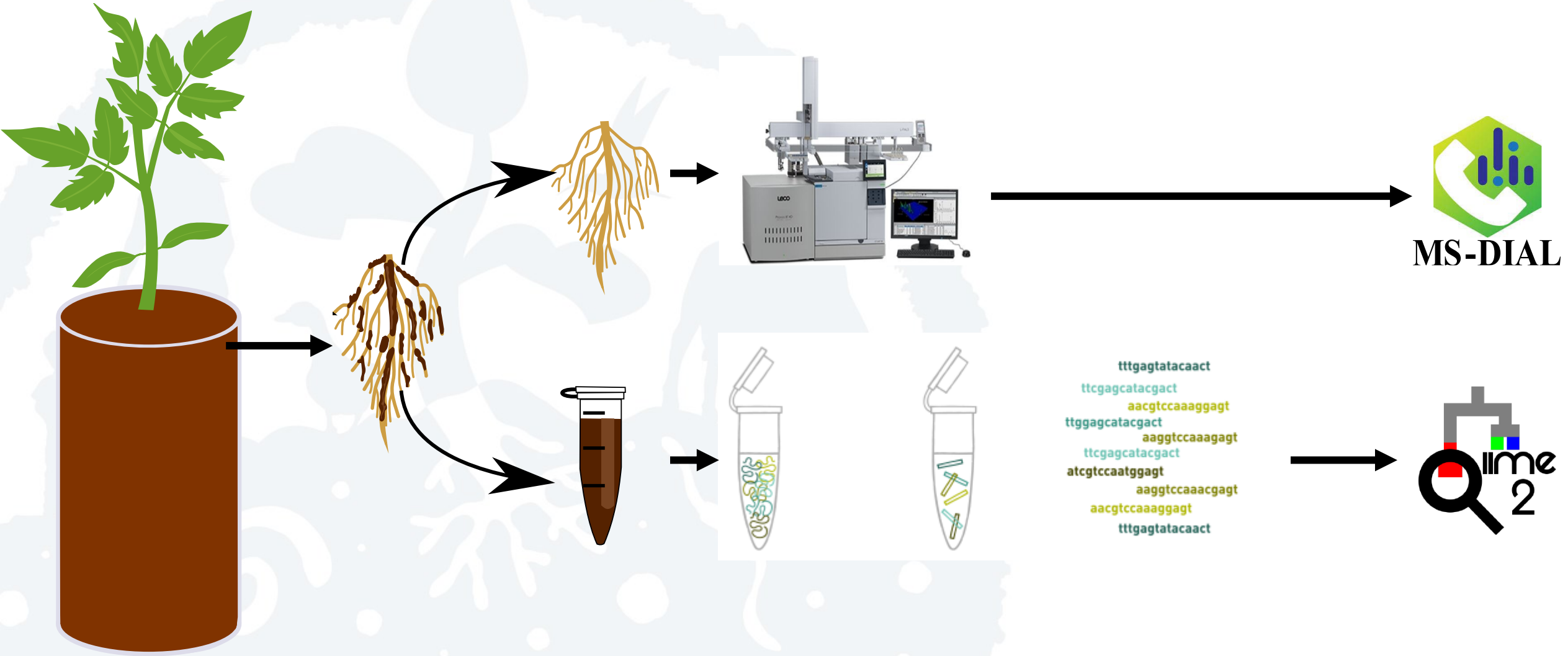






T0.....T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32

Methods


MS-DIAL
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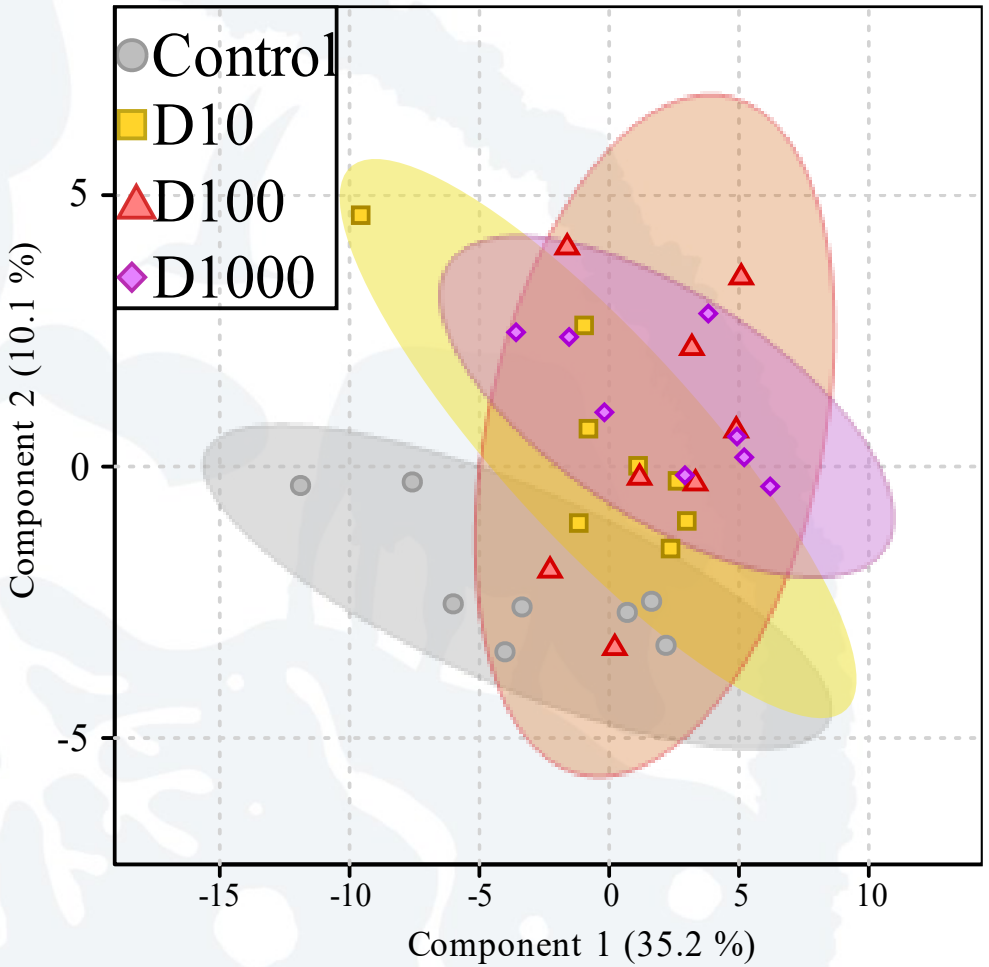
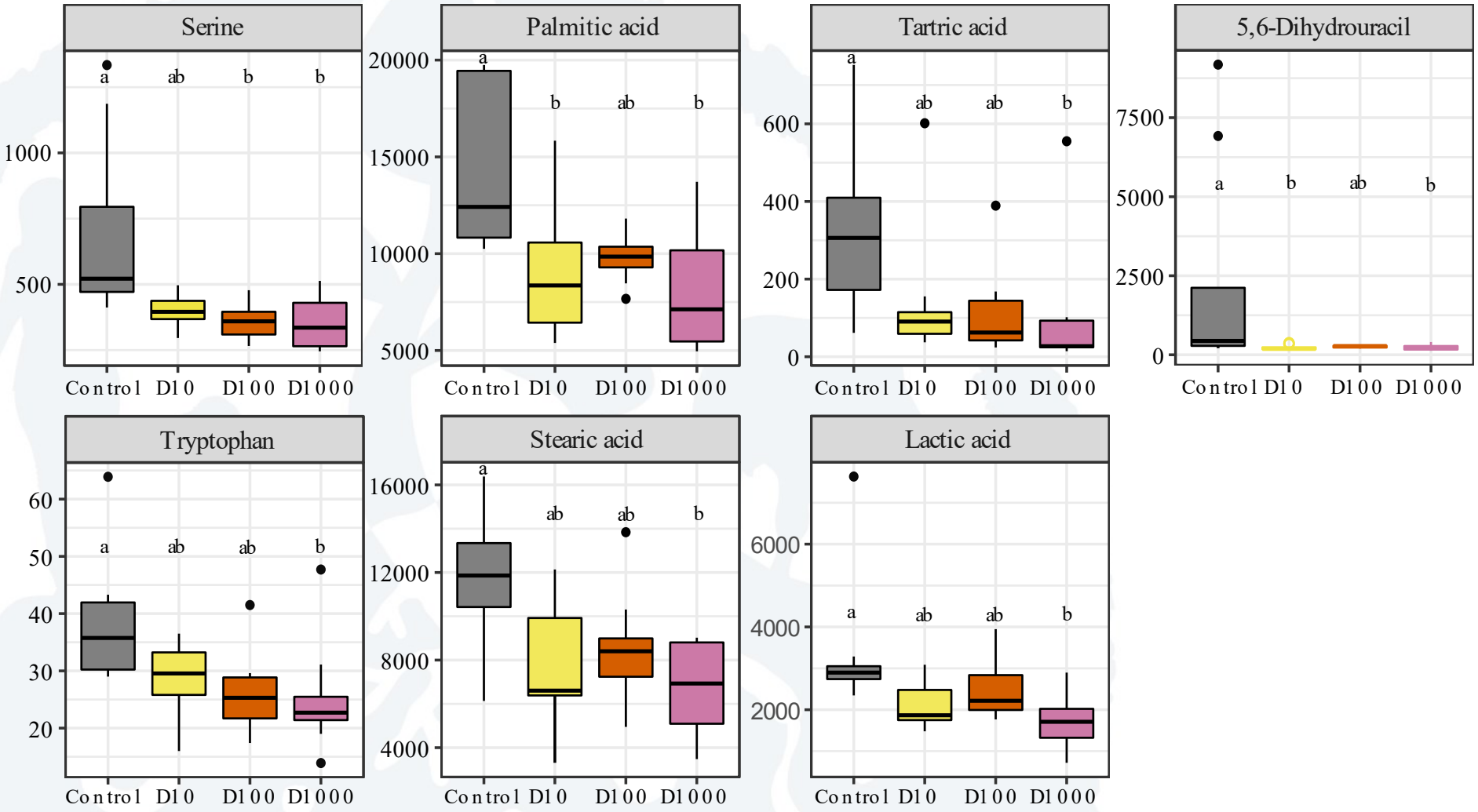
aaggtccaaacgagt
aacgtccaaaggagt
tttgagtatacaact
Qiime 2

Results: Root metabolome



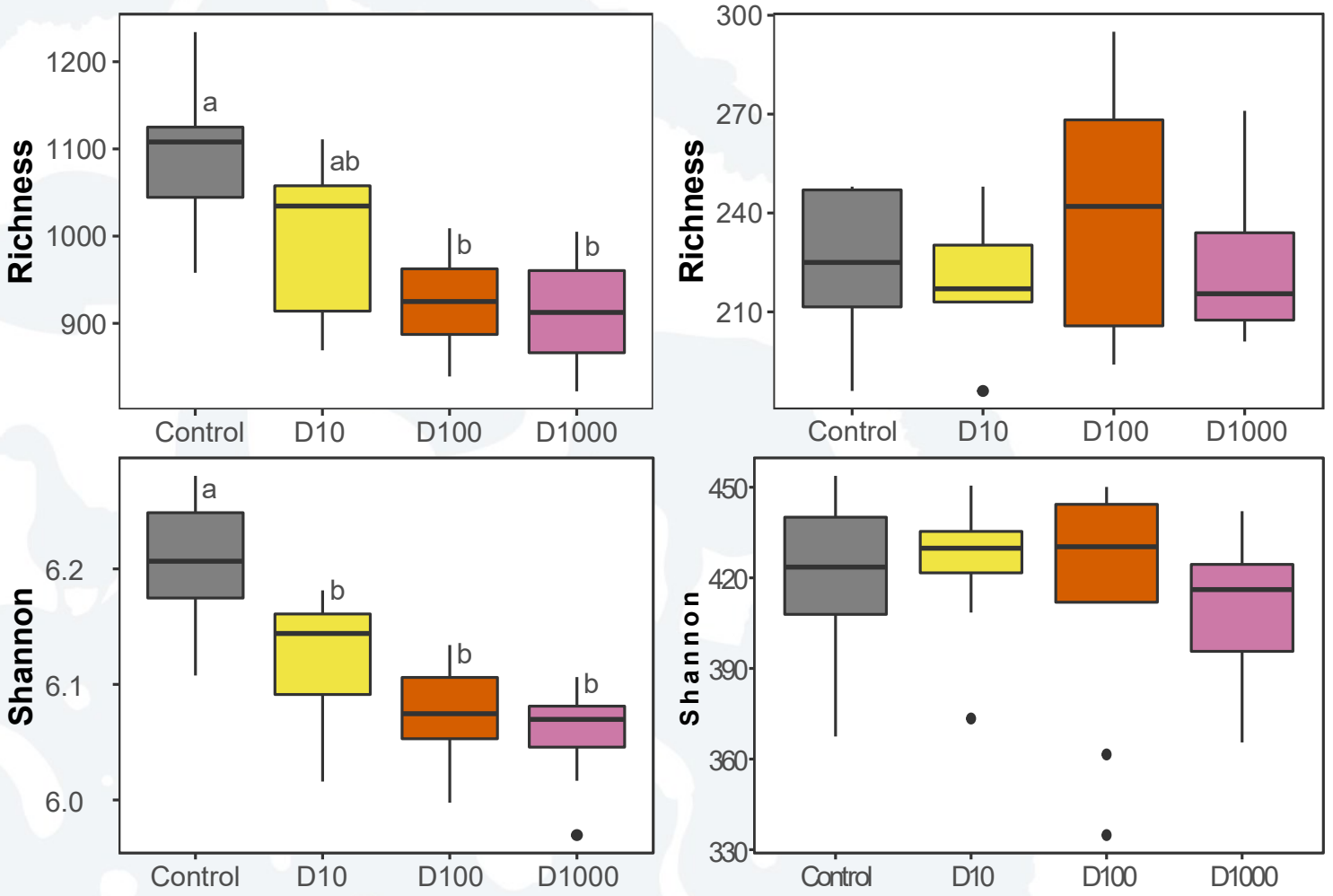
PCA analysis of root metabolites among tomato plants treated with PE-MS and untreated

Results: Root metabolome



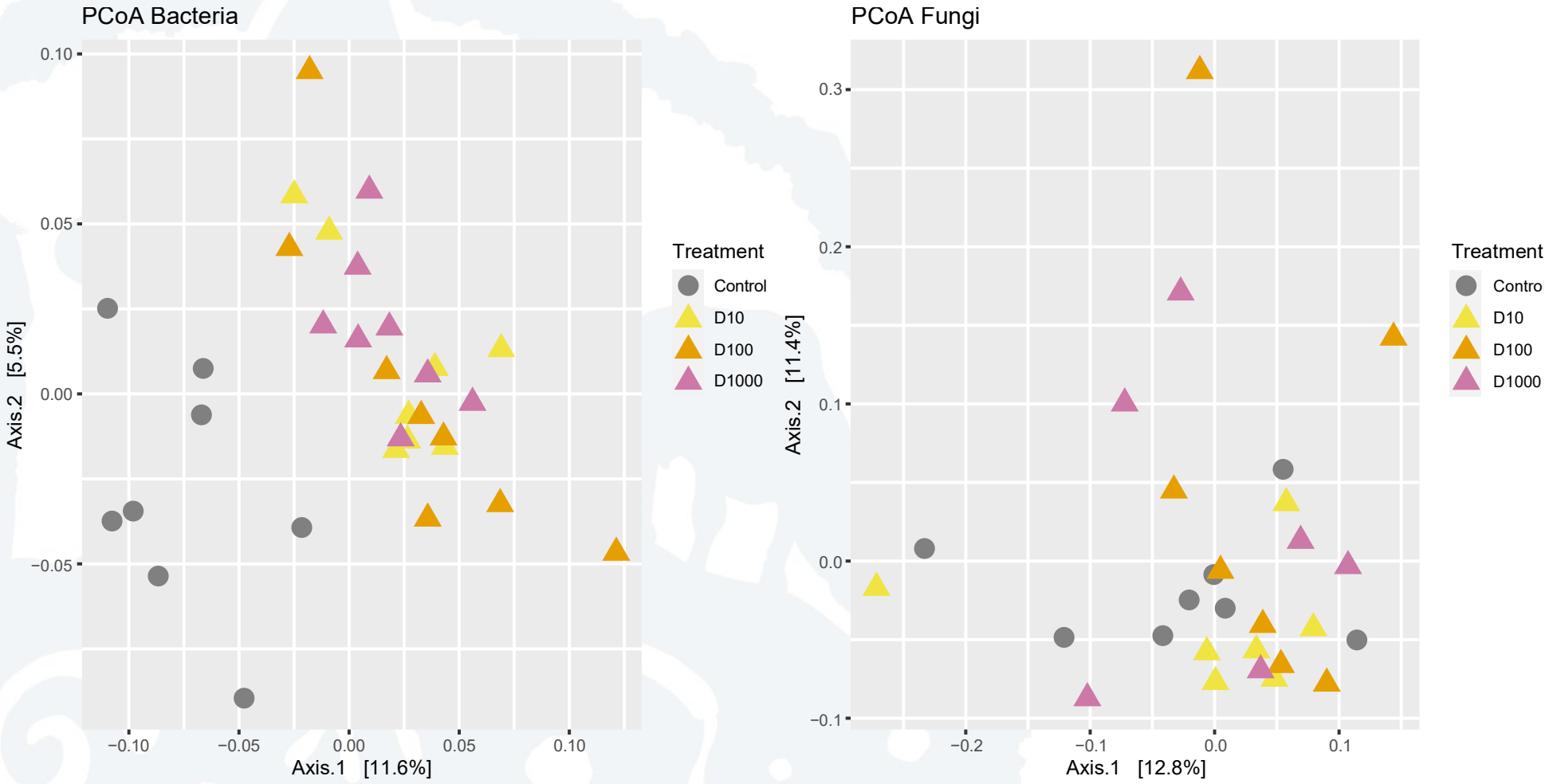
Boxplots of the 7 discriminant metabolites of tomato roots after exposure to PE-MS

Results: Microbial Alpha Diversity



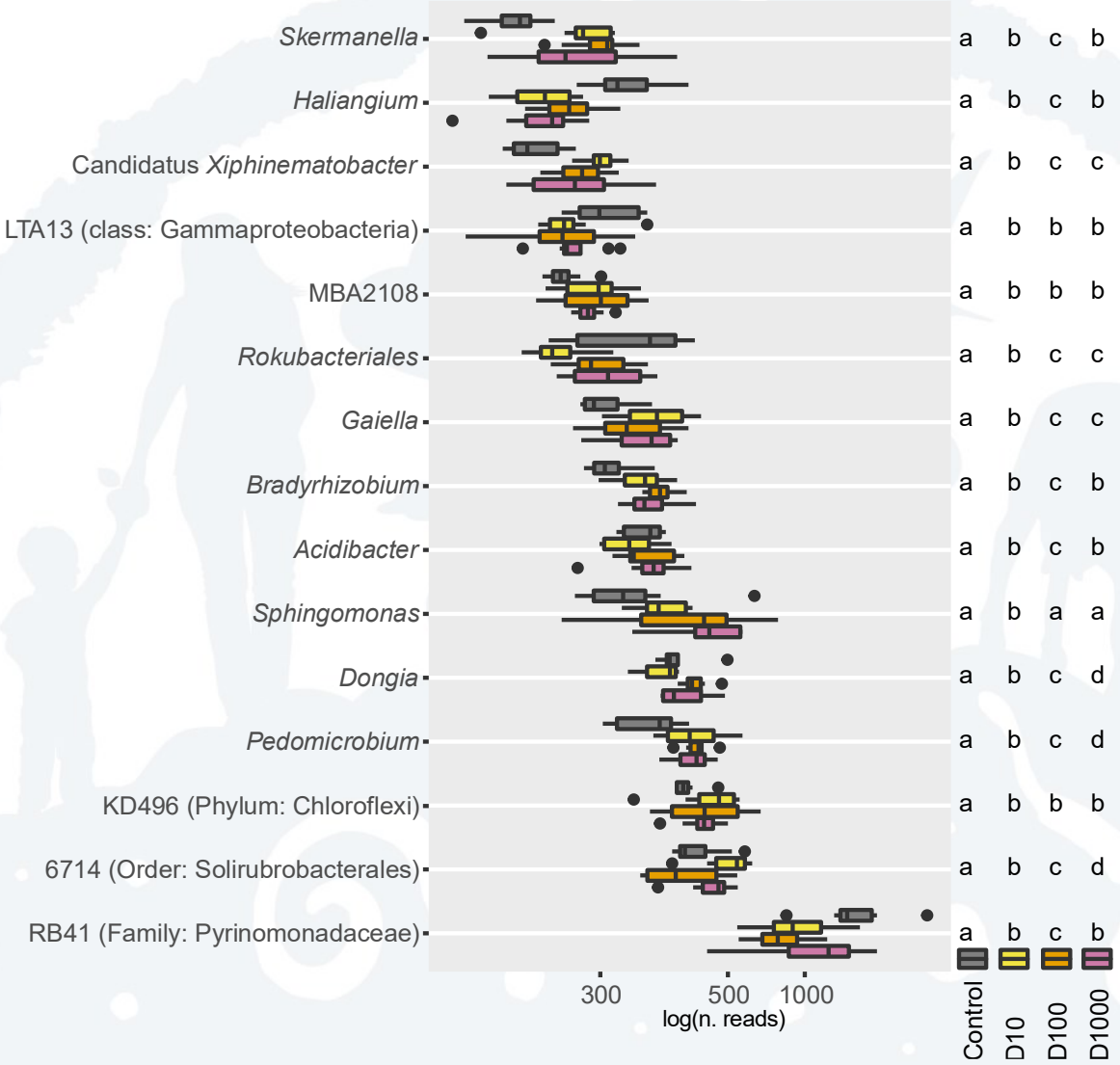
Impact of PE-MS on bacterial and fungal species richness (A and B) and Shannon diversity index(C and D).

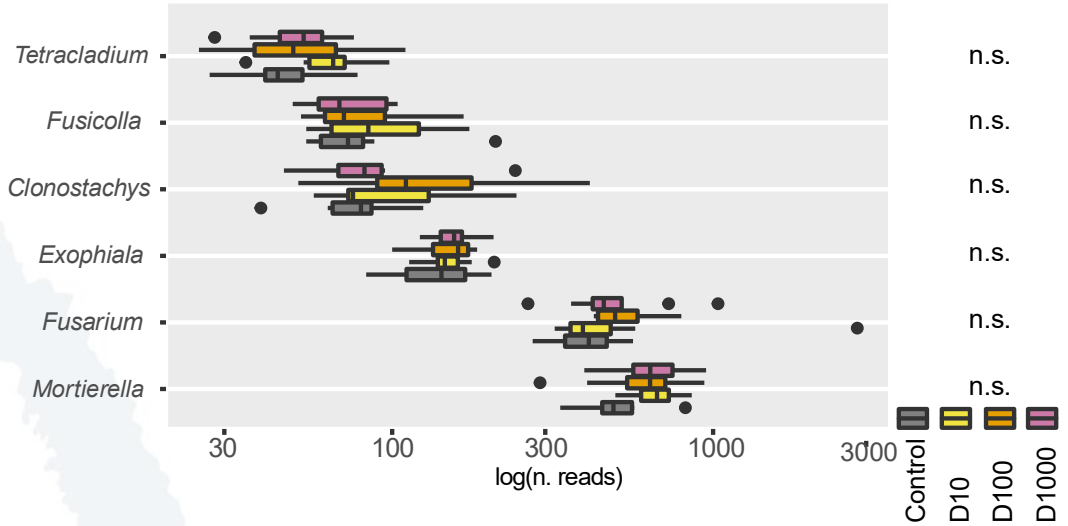
Results: Microbial Beta-Diversity



PCoA plots showing the beta-diversity of bacterial (A) and fungal (B) communities across the treatments

Results: Microbial genera Abundance





Boxplots showing the relative abundance of the most abundant (>1%) bacterial genera (A) and fungal genera (B)

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Thank you !

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