

## **Environmental and biological specificities of the lowland alluvial soils in Central Serbia**

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Lowlands of Central Serbia are mostly covered by alluvial soils, while the natural vegetation types are various alluvial forests differentiated by the distance from the river bed (dynamics of soil water potential regimes) and gradients of soil structure, nutrient availability and soil pH (Marjanovic et al 2020). These forests have been heavily exploited for timber throughout the human history, but what has remained still represent significant hotspots of above and belowground biodiversity. The rare specificity of these ecosystems is the high diversity of truffles, fungi producing belowground fruiting bodies, among which the most prized white Piedmont truffle holds a special attention (Bragato and Marjanovic, 2016).

In order to describe these special habitats of Balkan Peninsula, we have conducted various experiments, mostly concentrated on soils that support the fructification of this ecologically and economically important species. In this contribution we will summarize results on soil structure, soil water content dynamics, nutrient availability, seasonality of soil processes as well as seasonality of root associated mycobiomes of selected alluvial forests. We focus on connecting the fructification of white truffle to different soil factors (Marjanovic et al 2015), as well as on defining the differentiation factors that have been shaping root associated mycobiomes (Marjanovic et al 2020). The contribution was set to uncover as many soil traits as possible to reveal the answer to the question of what are the ideal conditions of soil/vegetation /climate combination that is suitable for such specific fungal communities.

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