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***Tuber balkanicum* – new taxon defined by molecular, ecological and biogeographical methods**

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Truffle diversity of Balkan Peninsula does not stop to surprise the scientific community with three new species from the *melanosporum* clade described in last year's (Mereny et al 2017, Milenković et al 2015, Slavova et al 2023). Out of large set of ITS sequences, Mereny et al. (2017) described *T. cryptobrumale* as connected to Pannonian region, but two other genetically quite distinctive populations were not distinguished as species. In this contribution, we have analyzed larger set of sequences and their habitats and detected strong connection between specimens with specific ITS/LSU region variants to ecologically specific habitats of Balkan peninsula. Soils and vegetation where these specimens have been detected rather resemble descriptions of *T. melanosporum* sites in Italy, while habitats of *T. cryptobrumale* resemble those of *T. magnatum*. Additionally, we have detected numerous populations of *T. melanosporum* in the coastal regions of Croatia, while this species has never been officially detected eastern from Dinaric alps in Balkan peninsula. We hypothesize that *T. melanosporum* could never overcome low temperatures of high and long Dinaric massive and is therefore localized in the western Mediterranean regions. This could be the reason why the *melanosporum* clade has been highly diversifying in Balkan regions. Moreover, the genetic variant widely distributed all over Europe and described as “*T. brumale*” has never been detected in the Balkans. Therefore, we propose that ecologically and genetically specific taxon that is widespread only in Balkan peninsula (and to some extent northwards) should be recognized as a different species - *Tuber balkanicum*.

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