

From species delimitation to hypothesis testing: a revision of the European black and white russulas (Basidiomycota)

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Russula is among most abundant and species rich ectomycorrhizal fungal lineages, consisting mainly of agaric mushrooms, recognisable by their often brightly coloured cap contrasted with a pale stipe and lamellae, brittle flesh and absence of milk. Outsiders in this colourful genus are found in *Russula* subgenus *Compactae* and *R. subg. Brevipedum*, once grouped together in the same subgenus based on similar morphological features such as their often dull colours, large compact basidiomata, and abundance of lamellulae. The species in *R. subg. Compactae* are further characterised by their brown colours, blackening flesh (sometimes with intermediate red discolouration), spores without amyloid suprahilar spot and low reticulate ornamentation. The species in *R. subg. Brevipedum*, on the other hand, have whitish colours and show remarkably little macromorphological variability. For both subgenera, morphological species delimitations were often simple and mainly based on lamellae spacing and spore ornamentation. In this presentation I will give an overview of my PhD research in which I aimed to investigate the taxonomic status of the species within these subgenera, using molecular techniques, phylogenetic reconstruction, morphological analyses and ecological data.