

Actinobacterial diversity associated with South African peatlands

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Peatlands are essential ecological systems that act as carbon sinks and store fresh water. The establishment of these systems involves a complex process where microorganisms play a key role in the degradation of organic material and its subsequent mineralisation. Although many studies have been performed on microbial populations in peatlands, these have been limited to peatlands in the Northern hemisphere and Antarctica. It is not well-known that peatlands also occur in South Africa and studies on these peatlands have been limited to geochemical studies and the identification of key vegetation associated with these peatlands. We therefore have no knowledge about the microbial populations associated with South African peatlands. In this study, we propose to focus on actinobacterial communities, and the diversity of their small laccases, in four different peatlands. This will assist us in determining whether actinobacteria are present in these peatlands and whether they play a role in the degradation of lignin, one of the first steps required for the establishment of peatlands.