

Assessing orchid mycorrhizal associations and fungal diversity

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Mycorrhizal fungi form a symbiotic relationship with the roots of majority of plant species and have commonly been divided into various types based on the fungi involved, the host plant species and the structures they form in and around the roots of plants. The relationship is regarded as mutually beneficial enhancing nutrient uptake particularly from harsh environments and increasing tolerance to stress and resistance to pathogens on the host plant side. In return, the fungi obtain photosynthetic carbon from the host plant.

Mitigation of climate change effects and sustainable ecosystem rehabilitation can only be achieved by applying correct management knowledge based not only on ecological principles but also on the understanding of soil-microbe-plant systems.

All orchid species form a unique relationship with diverse fungi belonging to the Ascomycota and Basidiomycota these mycorrhizal relationships have not been studied in South Africa. The aim of this proposal is to survey the diversity of mycorrhizal fungi associating with selected terrestrial orchid species occurring in the Eastern Cape. Culture dependent and independent techniques will be employed.