

Endophytes of resurrection plants

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Plants able to withstand extreme water deficit have been termed resurrection plants. Their vegetative tissues can withstand drying to less than 10% of the total cellular water content, at which stage metabolic functions cease. This quiescent metabolic state can last for extended periods of time and reverts to normal functioning upon the re-introduction of water. While there is some knowledge of the mechanisms of desiccation tolerance in these plants, it is unknown how their endophytic communities respond to extreme water loss, and extremes of temperature associated with the niche occupied by resurrection plants. To our knowledge, the composition of the endophytic communities of the resurrection plants *Xerophyta viscosa* and *Eragrostis nindensis* have never been studied. We wish to determine the composition and relative abundance of fungal endophytes in these plants under different hydration states. This will increase the knowledge of South African fungal biodiversity and is likely to provide evidence of new fungal species. Endophytes from both the leaves and roots of plants have been found to have exploitable beneficial qualities, such as antimicrobial properties and nitrogen fixing ability. Similar properties remain to be explored in the unknown endophytic population of resurrection plants.