

## **Root endophytes: A new dimension in plant conservation**

### **ABSTRACT**

Root endophytes have long been recognized as an integral aspect of plant ecology. However, apart from mycorrhizal fungi *sensu stricto*, little is known of the biological function of these organisms. Increasing evidence of an important biological role, gained from specific studies from a wide variety of different plant roots, point to a significant ecological role. A specific study on *Paphiopedilum barbatum* (Orchidaceae) shows an average of 10 different endophytic fungal taxa, including mycorrhizal fungi, pathogenic as well as neutral saprophytic and mycoparasitic species, colonizing the roots of these plants. Colonization frequently occurs simultaneously, with up to 4 different taxa recovered from single 0.5 mm root segments. Fungal colonization varies based on differences in site-specific factors, but appears otherwise non-specific. A better understanding of root endophytes may assist in designing conservation programs with a higher success potential, especially for recalcitrant species that perform poorly once outside their natural habitats.

**Keyword:** Conservation, Orchids, *Paphiopedilum*, Root endophytes