**Abstract**

*Zeuxine gracilis* (Berda) Bl., is an endemic, terrestrial green orchid whose morphology, anatomy and mycorrhizal status is unknown. So we investigated: (a) root and rhizome anatomy; (b) root hair characteristics and mycorrhizal colonization patterns in *Z. gracilis* plants collected from Western Ghats region of southern India. The prominent anatomical characters in the roots were: absence of velamen, spiranthosomes, and the presence of single layered exodermis and nine arched protoxylem. The rhizome had an uniseriate epidermis, abundant spiranthosomes in the inner cortical cells, a distinct endodermis with casparian strips and biseriate vascular bundles. The presence of fungi both in the roots and rhizomes was revealed. The entry of fungi was chiefly through root hairs and through epidermis in the rhizome. Fungi formed pelotons and monilioid cells in the root cortex. Additionally, arbuscular mycorrhizal (AM) fungi characterized by the presence of aseptate hyphae, vesicles and spores were present occasionally in roots. The lack of arbuscules in *Z. gracilis* indicated the AM to be non functional.