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STRUCTURE AND FUNCTIONING OF CLUSTER ROOTS AND PLANT RESPONSES TO PHOSPHATE DEFICIENCY

The biology of cluster roots and the acquisition of P from the rhizosphere

Cover Photo: Cluster roots of *Hakea prostrata* R.Br., grown in nutrient solution with 1 μM phosphate. Cluster roots occur in most species of the Proteaceae and in a range of other species. They release inorganic anions, such as citrate and malate, into the rhizosphere and mobilise and absorb sparingly available phosphate. Cluster roots allow plants to grow in nutrient-impoverished or phosphate-fixing soils. Photograph by Michael W. Shane.