

ROLE OF PHYTOSIDEROPHORES IN IRON UPTAKE BY PLANTS

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ABSTRACT

Phytosiderophores are various organic chelating molecules secreted by the roots of different species of the grass family (including oat, barley, wheat, and rice). The iron (Fe)-phytosiderophore complex enters the roots through an iron transporter in the plasma membrane and attributed mainly to the efficiency of acquisition of Fe under conditions of low soil Fe availability rather than to its utilization or re-translocation within a plant. A higher Fe acquisition efficiency may be due to either or all of the following: an efficient ionic uptake system, better root architecture, higher synthesis and release of Fe mobilizing phytosiderophores by the roots and uptake of phytosiderophores complex.