Inhibition of FeIII Reduction by high pH in Root and Leaf Apoplast induces Fe Chlorosis. (C02-mengel025333-Oral)

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Abstract:

Iron deficiency in plant occurs mainly on calcareous and alkaline soilswith a high bicarbonate concentration in the soil solution. Under such conditions the pH in the root apoplast is raised above 6 which hampers the reduction of ferri Fe and the uptake of the reduced Fe into the cytosol is hampered and ferri Fe is accumulated in the cell wall.So roots may have high Fe concentrations although suffering from Fe deficiciency. Analogous situation was found in the leaf apoplast where the high pH is induced by nitrate nutrition. Leaves turn chlorotic although their Fe concentration is high.Foliar application with diluted acid mobilises cell wall Fe and leaves regreen.

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