

园艺—研究报告

缺磷和缺铁胁迫对玫瑰幼苗根构型的影响

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摘要:

以玫瑰 (*Rosa Rugosa*) 实生苗为试材, 在砂培条件下研究了缺磷、缺铁对玫瑰幼苗根系长度、表面积、体积、根尖数、分形维数等根构型参数与根系活力的影响。结果表明: 缺磷或缺铁条件下, 玫瑰幼苗根系总长度、根尖数、表面积、体积、根系直径变大, 根系分形维数减小, 根系活力显著下降; 缺磷时, 玫瑰幼苗主根生长受到抑制; 缺铁使主根长度增加, 二级侧根长度和数量增加尤为显著, 分别比对照增加了229.9%和205.4%; 缺铁比缺磷的根系活力与分形维数下降得更多。

关键词: 分形维数

Effect of P, Fe-deficiency Stress on Root Architecture of Rosa Rugosa Young Seedlings

Abstract:

The sand culture system was used to study P, Fe-deficiency on the parameters of root architecture and activity of Rosa Rugosa young seedlings. The results showed that the total root length, tips, surface area, volume, diameter and fractal dimension of root of Rosa Rugosa young seedling increased obviously; the root activity decreased significantly. Under P-deficiency condition, the primary root of Rosa Rugosa young seedlings was controlled. Under the condition of P-deficiency, the primary root length increased, and the length and number of second lateral root increased significantly, which were 229.9% and 205.4% more than those of control respectively. The root activity and fractal dimension in Fe-deficiency condition was less than in P-deficiency.

Keywords: fractal dimension

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