

不同氮磷比例营养液对AM真菌生长发育的影响

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Effects of nutrient solutions with different ratios of N to P on development of arbuscular mycorrhizal fungi

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摘要

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摘要 温室条件下,研究不同氮磷比例营养液对丛枝菌根(*Arbuscular mycorrhizae*,AM)真菌(*Glomus mosseae*)生长发育的影响。结果表明:在一定磷水平条件下增加氮的水平,有利于菌根真菌的生长发育,但超过一定水平则会抑制菌根真菌的生长发育,说明氮水平也会影响菌根真菌的生长发育,这种影响与氮磷比例有关。综合比较菌根长度、根外菌丝量及孢子数三项指标,在20%浓度Hoagland营养液的基础上,将氮磷比例提高到4:2有利真菌生长。在AM菌剂生产中,通过营养液中氮磷比例的调控能获得较大数量的侵染根段、菌丝及孢子等繁殖体。

关键词: 氮磷比例 侵染率 菌丝量 孢子数 AM菌剂 氮磷比例 侵染率 菌丝量 孢子数 AM菌剂

Abstract: Under greenhouse conditions, the influences of eight nutrient solutions with different ratio of N to P on the growth of arbuscular mycorrhizal fungus *Glomus mosseae* were studied. The results showed that increasing N could improve the growth of AM fungi under certain phosphorus supplying level, but excessive N inhibited its growth. It suggests that the development of mycorrhizal fungi are influenced by N and the ratio of N to P. By comprehensive comparison of total length of external hyphae, colonized root length and spore numbers, the optimum N: P ratio in 20% Hoagland solution for fungi growth was 4: 2. Therefore, rational regulating the N: P ratio in nutrient solution could enhance the development of AM fungi to obtain more colonized roots, external hyphae and spores when AM fungal inoculum was produced under greenhouse conditions.

Keywords:

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