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## 三七根中丛枝菌根真菌与深色有隔内生真菌侵染状况研究

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中文摘要: 目的: 对云南文山州3个三七主产区的三七根系进行调查, 研究不同地点、不同生长年限、健康三七和根腐病三七根内丛枝菌根真菌(arbuscular mycorrhizal fungi, AMF)和深色有隔内生真菌(dark septate endophytes, DSE)的侵染状况。方法: 利用碱解离、酸性品红染色法对144个三七根样进行显微观察。结果与结论: 三七为典型的丛枝菌根植物。虽然3个样地间的AMF和DSE侵染率均没有显著差异, 但三七根内AMF的总侵染率(6%~94%, 平均51.79%)显著高于DSE的侵染率(0~71%, 平均为2.76%); 且三七根鲜重与AMF侵染率显著正相关, 而与DSE侵染率无显著相关性, 表明AMF对改善三七品质和提高三七产量具有比DSE更为重要的作用; 此外, 健康三七的AMF侵染率显著高于根腐病三七, 表明AMF提高了三七的抗根腐病能力, 因而在三七根腐病防治方面具有极大的潜力和广阔的前景。

中文关键词: 三七; 丛枝菌根真菌; 深色有隔内生真菌; 侵染率; 根腐病

Colonization of arbuscular mycorrhizal fungi and dark septate endophytes in *Panax notoginseng*

**Abstract:** Arbuscular mycorrhizal fungi (AMF) and dark septate endophytes (DSE) colonizing *Panax notoginseng* in three main producing areas in Wenshan Prefecture of Yunnan province were investigated. The fungal colonization of 144 roots samples including healthy and rot roots of *P. notoginseng* with different age were observed by means of acid fuchsin stain. The results showed that *P. notoginseng* was the typical arbuscular mycorrhizal plant. Although there was no significant difference in AMF and DSE colonization among three sites, the total colonization of AMF was significantly higher than that of DSE. Statistical analysis demonstrated that the fresh weight of *P. notoginseng* root was positively significantly correlated with the colonization of AMF, but not with the colonization of DSE. These results suggest that AMF may play more important role than DSE in improving the yield and quality of *P. notoginseng*. Furthermore, AMF colonization of healthy *P. notoginseng* was higher than that of plant with root rot, which suggested that AMF could defend *P. notoginseng* against root rot pathogens. AMF have great potentiality and broad prospect to control root rot of *P. notoginseng*.

**keywords:** *Panax notoginseng*; arbuscular mycorrhizal fungi; dark septate endophytes; colonization rate; root rot

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