

农学—研究报告

抗草甘膦转基因大豆对根际土壤细菌多样性的影响

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摘要:

采用DGGE-cloning测序技术研究抗草甘膦转基因大豆在生长期对根际土壤细菌多样性的影响。结果分析表明,不同生长期抗草甘膦转基因大豆与非转基因大豆根际土壤细菌16S rDNA DGGE指纹图谱谱形相似,仅在出苗期和鼓粒期出现两条差异带,分别属于芽单胞菌门(Uncultured Gemmatimonadetes bacterium clone, 缺失)和壁厚菌门(Uncultured Firmicutes bacterium clone GASP-KC3W1_H04, 增加);不同生长期抗草甘膦转基因大豆与非转基因大豆根际土壤细菌16S rDNA DGGE指纹图谱的多样性指数和均匀度指数无显著差异。因此,抗草甘膦转基因大豆对土壤细菌多样性无显著影响。

关键词: 抗草甘膦转基因大豆; 根际土壤; 细菌多样性; DGGE-cloning测序技术

Effects of Glyphosate Resistant Transgenic Soybean on Bacterial Diversity in Rhizospheric Soil

Abstract:

DGGE-cloning sequencing method was chosen to study the effects of the planting of glyphosate resistant transgenic soybean (Roundup Ready Soybean, RRS) on bacterial diversity in the rhizospheric soil during the growing period. The results showed that the rhizospheric bacterial 16S rDNA DGGE fingerprintings between glyphosate resistant transgenic soybean and non-transgenic soybean were similar within different growing stages, with only two different bands in the stages of emerging and feed filling, the two bands belonged to uncultured Gemmatimonadetes bacterium clone (vanished) and uncultured Firmicutes bacterium clone GASP-KC3W1_H04 (appeared) respectively; the diversity index and evenness index of 16S rDNA DGGE fingerprintings between glyphosate resistant transgenic soybean and non-transgenic soybean were with no significant differences. The glyphosate resistant transgenic soybean had no significant effects on the soil bacteria.

Keywords: glyphosate resistant transgenic soybean rhizospheric soil bacterial diversity DGGE-cloning sequencing method

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