

研究报告

生防菌ZJY-1及ZJY-116的GFP标记及其在黄瓜根围的生态适应性

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摘要

将具有绿色荧光蛋白(GFP)标记和氯霉素抗性的重组质粒pRP22-GFP导入生防菌Brevibacillus brevis ZJY-1和 Bacillus subtilis ZJY-116中,用这些标记菌株处理黄瓜种子,出苗后通过定期分离计数具有上述表型的转化子,研究了2株生防菌在黄瓜根围的定殖规律.结果表明,在整个生育期2株生防菌株均能在黄瓜根围有效定殖,并在黄瓜盛花期和盛果期出现数量高峰.盆栽试验发现,引入黄瓜根围的2株生防菌有向周边杂草迁移的特性,且在前一季寄主植物死亡后,菌株可在下一季植株根围增殖.

关键词 [质粒 pRP22-GFP](#),[GFP基因](#),[短短芽孢杆菌](#),[枯草芽孢杆菌](#),[黄瓜根围](#),[定殖](#)

分类号

Labeling of biocontrol agents ZJY-1 and ZJY-116 gfp gene and its ecological adaptability in cucumber rhizosphere

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Abstract

The recombinant plasmid pRP22-GFP contained with gfp gene and chloramphenicol resistant was successfully introduced into two biocontrol agents Brevibacillus brevis ZJY-1 and Bacillus subtilis ZJY-116. After seed inoculation, the survival and colonization of the two strains were studied by periodically retrieving the GFP-tagged strains in the cucumber rhizosphere based on the selective markers. The results showed that both the strains could successfully colonize in the rhizosphere during the whole life of cucumber, and a higher colonization level was observed during anthesis and fruition stages. In pot trials, they could migrate to the nearby non-inoculated spontaneous weed plants, and reestablish in the rhizosphere of plants subsequently grown in the same pot.

Key words [Plasmid pRP22-GFP](#) [Gfp gene](#) [Brevibacillus brevis](#) [Bacillus subtilis](#) [Cucumber rhizosphere](#) [Colonization](#)

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