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[1]于晓波,向达兵,杨文钰,等.结瘤性状不同基因型大豆对接种花生根瘤菌Spr2-9的响应[J].大豆科学,2010,29(01):41-45.[doi:10.11861/j.issn.1000-9841.2010.01.0041]
YU Xiao-bo,XIANG Da-bing,YANG Wen-yu,et al.Response of Soybean Genotypes with Different Nodulation Traits to Peanut Rhizobia Spr2-9 Inoculation[J].Soybean Science,2010,29(01):41-45.[doi:10.11861/j.issn.1000-9841.2010.01.0041]
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结瘤性状不同基因型大豆对接种花生根瘤菌Spr2-9的响应

《大豆科学》 [ISSN:1000-9841 /CN:23-1227/S] 卷： 第29卷 期数： 2010年01期 页码： 41-45 栏目：
出版日期： 2010-02-25

Title: Response of Soybean Genotypes with Different Nodulation Traits to Peanut Rhizobia Spr2-9 Inoculation

文章编号： 1000-9841（2010）01-0041-05

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关键词： 大豆 (KeySearch.aspx?type=KeyWord&Sel=大豆)； 基因型 (KeySearch.aspx?type=KeyWord&Sel=基因型)； 根瘤 (KeySearch.aspx?type=KeyWord&Sel=根瘤)； 氮素 (KeySearch.aspx?type=KeyWord&Sel=氮素)； 接种 (KeySearch.aspx?type=KeyWord&Sel=接种)

Keywords: Soybean (KeySearch.aspx?type=KeyWord&Sel=Soybean)； Genotype (KeySearch.aspx?type=KeyWord&Sel=Genotype)； Nodule (KeySearch.aspx?type=KeyWord&Sel=Nodule)； Nitrogen (KeySearch.aspx?type=KeyWord&Sel=Nitrogen)； Inoculation (KeySearch.aspx?type=KeyWord&Sel=Inoculation)

分类号： S565.1

DOI: 10.11861/j.issn.1000-9841.2010.01.0041 (http://dx.doi.org/10.11861/j.issn.1000-9841.2010.01.0041)

文献标志码： A

摘要： 为探讨结瘤性状不同基因型大豆对接种花生根瘤菌Spr2-9的响应，采用ce1B基因检测法研究根瘤菌对不同基因型大豆的侵染效果和不同基因型大豆在接种后盛花期植株生长及固氮能力的变化。结果表明：nts1007的瘤鲜重、氮素百分含量和单株氮素含量在不接种与接种时均为最高，瘤鲜重分别为4.7702 • 株$^{-1}$和4.7401g • 株$^{-1}$；氮素百分含量分别为2.20%和2.29%，极显著地高于其它基因型；单株氮素含量分别为489.12 m • 株$^{-1}$和528.41 m • 株$^{-1}$，极显著地高于nod139。nts1007在接种后单瘤重显著降低，而瘤鲜重、氮素百分含量和单株氮素含量无显著变化。nod139受其基因型控制，无论接种与否始终表现为不结瘤，且各项指标均表现为极显著地低于其它基因型。Bragg的SPAD和植株干重对接种的响应较其它基因型更为敏感，接种后SPAD和植株干重的增幅分别为16.99%和8.18%。贡选1号的单株氮素含量在接种后增幅达到了22.76%，表明其单株氮素含量对接种的响应较其它基因型更为敏感。

Abstract: The peanut rhizobia Spr2-9 was inoculated to soybean ragg, its mutant line nts1007, a supernodulator, and nod139, a nonnodulator, as well as a local cultivar Gongxuan 1. The changes of plant growth and nitrogen-fixing ability of different genotype soybean were investigated after inoculation at full flowering stage. Whether inoculation or not, nts1007 had highest nodule fresh weight, nitrogen percent content and nitrogen content per plant, the nodule fresh weight and nitrogen percent content of nts1007 were significantly higher than other genotype soybeans, and nitrogen content per plant were significantly higher than nod139. After inoculation, the nts1007 have a significant reduction in single nodule weight, but the nodule fresh weight, nitrogen percent content and nitrogen content per plant had no significant changes. The nod139 had no nodule whether inoculation or not, and its nodulation traits were significant lower than other genotypes. The SPAD and plant dry weight of bragg were more sensitive to inoculation than other genotypes, which increased by 16.99% and 8.18% after inoculation. The nitrogen content per plant of Gongxuang 1 increased by 22.76% after inoculation, which indicated it was more sensitive in response of nitrogen content per plant to inoculation than other soybean genotypes.

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备注/Memo 基金项目：现代大豆产业技术体系专项资助项目(nycytx-004)；丰产科技工程专项资助项目(2006BAD02A05)。
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更新日期/Last Update: 2014-09-13