

## 四川高效大豆根瘤菌的筛选及初步应用研究

周涛, 陈远学, 邹依霖, 李克祥, 汪鹏, 蒋攀, 徐开未\*

四川农业大学资源环境学院, 四川雅安 625014

Screening and preliminary application of high efficient soybean rhizobia strains in Sichuan province

ZHOU Tao, CHEN Yuan xue, ZOU Yi lin, LI Ke xiang, WANG Peng, JIANG Pan, XU Kai wei\*

College of Resource and Environmental Sciences, Sichuan Agricultural University, Ya'an, Sichuan 625014, China.

[摘要](#)[参考文献](#)[相关文章](#)Download: [PDF \(945KB\)](#) [HTML 1KB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

**摘要** 采用无氮水培、盆栽、田间区组试验,从采集自四川33个市县35个采样点分离获得的70个大豆根瘤菌株中,筛选与四川主栽大豆品种“贡选1号”匹配性最佳的根瘤菌。对第一批分离自21个市县23个采样点的52个菌株进行无氮水培实验,其结瘤能力和共生固氮能力表明,S8、S22、S36、S46、S55、S65菌株与“贡选1号”共生匹配性好。用6个菌株进行的盆栽试验结果表明,S36、S8菌株与“贡选1号”匹配性最佳。将第二批分离自四川另外12个市县的12个采样点的18个菌株进行第二次水培实验,以S8、S36和CK分别作为阳性和阴性对照,结果表明接种S151、S152、S150、S149菌株的植株鲜重和干重均极显著高于CK,且高于阳性对照(S8、S36)。结合盆栽和第二次水培实验结果选择S152、S151、S150、S149、S8进行田间试验,以不接种为对照,结果显示,接种S152、S150菌株的大豆产量分别比CK显著增加33.5%和18.5%,且显著高于其它三个供试菌株S151、S149和S8接种处理。为此筛选出与四川主栽大豆品种“贡选1号”共生匹配性最佳的菌株是S152、S150。

**关键词:** 大豆 根瘤菌 筛选 共生固氮 共生匹配性

**Abstract:** By N-free hydroponic, potted and field randomized block experiments, high efficient soybean rhizobia which were best matched with the rhizobia of mainly planted soybean cultivar, Gongxuan no.1, in Sichuan province were screened from 70 Rhizobia isolated from 33 counties with 35 sampling spots. The results of the first hydroponic experiment show that six strains, S8, S22, S36, S46, S55 and S65, are screened out from 52 Rhizobia which are isolated from 21 counties with 23 sampling spots, and the S8 and S36 are matched “Gong xuan no.1” best in the subsequent soil pot experiment. In the second hydroponic experiment, S8, S36 and CK are the positive and negative controls screening, and high efficient strains are screened from the other 12 counties with 12 sampling spots, the results show that plant fresh weights and dry weights of the S151, S152, S150 and S149 are significantly higher than those of CK, and higher than those of the S8 and S36. Consequently, S151, S152, S150, S149 and S8 are used in the field experiment, the results indicate that the yields of S152 and S150 are increased significantly by 33.51%, 18.48% compared with CK, respectively, and the yields of S152 and S150 are also significantly higher than those of the other three tested strains, S151, S149 and S8. Thus, the S152 and S150 rhizobial strains are selected out with best matching “Gong xuan no.1”.

**Keywords:** soybean rhizobium screening symbiotic nitrogen-fixing, symbiotic matching

Received 2011-08-01; published 2011-12-26

Fund:

四川省教育厅青年基金项目

Corresponding Authors: 周涛 Email: 364462907@qq.com

**引用本文:**

周涛 陈远学 邹依霖 李克祥 汪鹏 蒋攀 徐开未.四川高效大豆根瘤菌的筛选及初步应用研究[J] 植物营养与肥料学报, 2012,V18(1): 227-233

ZHOU Tao CHEN Yuan-xue ZOU Yi-lin LI Ke-xiang WANG Peng JIANG Pan XU Kai-wei. Screening and preliminary application of high efficient soybean rhizobia strains in Sichuan province[J] Acta Metallurgica Sinica, 2012,V18(1): 227-233

**Service**

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

**作者相关文章**

- ▶ [周涛](#)
- ▶ [陈远学](#)
- ▶ [邹依霖](#)
- ▶ [李克祥](#)
- ▶ [汪鹏](#)
- ▶ [蒋攀](#)
- ▶ [徐开未](#)