



棉花学报 » 2011, Vol. 23 » Issue (5) :387-393 文章编号: 1002-7807 (2011) 05-0387-07

研究与进展

最新目录 | 下期目录 | 过刊浏览 | 高级检索

<< | Next Articles >>

半野生棉抗黄萎病筛选及根系分泌物对黄萎病菌的影响

付慧娟, 刘 方, 黎绍惠, 王春英, 张香娣, 王玉红, 朱荷琴*, 王坤波*

中国农业科学院棉花研究所/农业部棉花遗传改良重点实验室, 河南 安阳 455000

Screening of Verticillium Wilt Resistance on *Gossypium hirsutum* races and Their Root Exudate Effects on the Wilt Pathogen

FU Hui-juan, LIU Fang, LI Shao-hui, WANG Chun-ying, ZHANG Xiang-di, WANG Yu-hong, ZHU He-qin*, WANG Kun-bo*

Cotton Research Institute, Chinese Academy of Agricultural Sciences /Key Laboratory of Cotton Genetic Improvement, Ministry of Agriculture, Anyang, Henan 455000, China

摘要

参考文献

相关文章

全文: PDF (934KB) HTML 1KB 导出: BibTeX or EndNote (RIS) 其它资料

摘要 对陆地棉7个野生种系的220份材料进行黄萎病菌的抗性筛选, 用8份不同抗性材料进行了根系分泌物分析。从220份材料中筛选出18份抗黄萎病材料。根系分泌物研究表明, 抗病品种根系分泌物对黄萎病菌菌丝生长及孢子萌发均具有抑制作用, 而感病品种根系分泌物对其则有促进作用。另外通过对根系分泌物中氨基酸和可溶性糖的分析发现, 抗病品种根系分泌物中氨基酸种类少于感病品种, 并且抗病品种根系分泌物中氨基酸总量和可溶性糖含量显著少于感病品种。同时发现, 精氨酸为抗病品种特有氨基酸。

关键词: 陆地棉野生种系 棉花黄萎病 抗性机制 根系分泌物 大丽轮枝菌

Abstract: In present study, 18 accessions which were resistant or tolerant to Verticillium wilt were screened out from 220 accessions of all seven races of *Gossypium hirsutum*. Eight accessions were chosen to analyze the effects of their root exudates on the wilt pathogen, from which four are resistant and four are susceptible, respectively. Higher resistant accessions and resistant ones which are valuable should be found. The resistance mechanism of *Gossypium hirsutum* can be known partly. Screening on Verticillium wilt resistance used 5 classification criteria, which included amino acid and saccharide contents, hypha growth and spore germination setting-out in resistance mechanism studing. Results showed the root exudates from resistant accessions restrained the hypha growth and spore germination but the exudates from susceptible ones reversed. The amino acid and saccharide contents in root exudates from resistant accessions were obviously less than those from susceptible accessions. The kinds of amino acid in root exudates from resistant accessions were clearly less than those from susceptible ones, and very interestingly, arginine existed peculiarly in resistant semiwild accessions.

Keywords: *Gossypium hirsutum* races cotton Verticillium wilt resistance mechanism root exudates *Verticillium dahliae*

收稿日期: 2011-04-01;

基金资助:

中央级公益性院所基本科研业务费资助项目 (SJA0901, SJA1001)

通讯作者: heqinanyang@sohu.com; wkbcri@163.com

作者介绍: 付慧娟 (1984-), 女, 硕士, juanjuan741@126.com

引用本文:

付慧娟, 刘 方, 黎绍惠, 王春英, 张香娣, 王玉红, 朱荷琴, 王坤波. 半野生棉抗黄萎病筛选及根系分泌物对黄萎病菌的影响[J]. 棉花学报, 2011, 23(5): 387-393.

FU Hui-Juan, LIU Fang, LI Shao-Hui, WANG Chun-Ying, ZHANG Xiang-Di, WANG Yu-Hong, ZHU He-Qin, WANG Kun-Bo. Screening of Verticillium Wilt Resistance on *Gossypium hirsutum* races and Their Root Exudate Effects on the Wilt Pathogen[J]. Cotton Science, 2011, 23(5): 387-393.

链接本文:

http://journal.cricaas.com.cn:8082/mhxb/CN/1002-7807 (2011) 05-0387-07 或 http://journal.cricaas.com.cn:8082/mhxb/CN/Y2011/V23/I5/387

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

- ▶ 付慧娟
- ▶ 刘 方
- ▶ 黎绍惠
- ▶ 王春英
- ▶ 张香娣
- ▶ 王玉红
- ▶ 朱荷琴
- ▶ 王坤波