

全国中文核心期刊
 中国科技核心期刊
 中国农业核心期刊
 RCCSE中国核心学术期刊
 中国科学引文数据库 (CSCD) 期刊
 CAB International 收录期刊
 美国《生物学文摘》收录期刊
 美国《化学文摘》(CA) 收录期刊

首页 (/) 期刊介绍 编委会 投稿须知 期刊订阅 广告合作 联系我们 返回主站
 (/Corp/10.aspx) (/Corp/3600.aspx) (/Corp/5006.aspx) (/Corp/50.aspx) (http://www.haasep.cn/)

«上一篇 (DArticle.aspx?type=view&id=201501013)
 下一篇 (DArticle.aspx?type=view&id=201501015)



PDF下载 (pdfdown.aspx?Sid=201501014)

+分享
 (http://www.jiathis.com/share?uid=1541069)



微信公众号: 大豆科学

[1]赵春. 黄河三角洲野生大豆种子和幼苗对盐胁迫的响应[J]. 大豆科学, 2015, 34(01): 71-74. [doi:10.11861/j.issn.1000-9841.2015.01.0071]
 ZHAO Chun. Responses of Seed and Seedling of Glycine soja in Yellow River Delta to Salt Stress[J]. Soybean Science, 2015, 34(01): 71-74. [doi:10.11861/j.issn.1000-9841.2015.01.0071]

点击复制

黄河三角洲野生大豆种子和幼苗对盐胁迫的响应

《大豆科学》 [ISSN:1000-9841 /CN:23-1227/S] 卷: 第34卷 期数: 2015年01期 页码: 71-74 栏目:
 出版日期: 2015-02-25

Title: Responses of Seed and Seedling of Glycine soja in Yellow River Delta to Salt Stress

作者: 赵春 (KeySearch.aspx?type=Name&Sel=赵春)
 东营职业学院, 山东 东营 257091

Author(s): ZHAO Chun (KeySearch.aspx?type=Name&Sel=ZHAO Chun)
 Dongying Vocation College, Dongying 257091, China

关键词: 野生大豆 (KeySearch.aspx?type=Keyword&Sel=野生大豆); 盐胁迫 (KeySearch.aspx?type=Keyword&Sel=盐胁迫); 耐盐性 (KeySearch.aspx?type=Keyword&Sel=耐盐性)

Keywords: Glycine soja (KeySearch.aspx?type=Keyword&Sel=Glycine soja); Salt stress (KeySearch.aspx?type=Keyword&Sel=Salt stress); Salt tolerance (KeySearch.aspx?type=Keyword&Sel=Salt tolerance)

分类号: S565.1

DOI: 10.11861/j.issn.1000-9841.2015.01.0071 (http://dx.doi.org/10.11861/j.issn.1000-9841.2015.01.0071)

文献标志码: A

摘要: 采用不同浓度的NaCl盐溶液和混合盐溶液处理, 考察了野生大豆种子在发芽和幼苗阶段对盐胁迫的反应, 并利用发芽率、相对生长速率、干物质积累量等指标, 对其耐盐性进行了分析和评价。结果表明: 盐浓度低于50 mmol/L⁻¹时, 野生大豆种子的发芽率、相对发芽率、相对盐害率、幼苗干物质积累和相对生长率不受影响; 随着盐浓度增高, 种子发芽率逐渐下降, 同时盐浓度对种子的萌发进程有明显滞后的影响。盐浓度高于100 mmol/L⁻¹时, 野生大豆幼苗干物质积累、相对生长率降低幅度明显, 差异均达显著水平。结果还表明野生大豆对不同盐胁迫表现出的反应不同, 受单盐胁迫的影响较大, 对混合盐处理不敏感。

Abstract: Responses of seed and seedling of Glycine soja treated with sodium chloride and natural mixed salt solutions were studied, the salt tolerance was evaluated with parameters including the germination rate, relative growth rate and dry matter accumulation. The results showed that salt solution lower than 50 mmol/L⁻¹ had no effects on germination rate, relative germination rate, relative salt-injury rate, dry matter and relative growth rate of seedling of Glycine soja. With salinity increasing, germination rate decreased gradually. At the same time, the germination process was lagged by the high salt concentration sharply. The relative growth rate and dry matter accumulation of Glycine soja seedlings decreased evidently when salt solution higher than 100 mmol/L⁻¹, and significantly different compared to its control. The result also indicated that Glycine soja had different response to the different salt stress, and single salt stress had more influence than mixed salt solutions.

参考文献/References:

- [1] Ashraf M, Foolad M R. Roles of glycine betaine and proline in improving plant abiotic stress resistance [J]. Environmental and Experimental Botany, 2007, 59: 206-216.
- [2] Chinnusamy V, Jagendorf A, Zhu J K. Understanding and improving salt tolerance in plants [J] Crop Science, 2005, 45:437-448.
- [3] Munns R, Tester M. Mechanisms of salinity tolerance [J]. Annual Review of Plant Biology, 2008, 59: 651-681.
- [4] 杨劲松. 中国盐渍土研究的发展历程与展望 [J]. 土壤学报, 2008, 45(5):837-845. (Yang J S. Development and prospect of the research on salt-affected soils in China [J]. Acta Pedologica Sinica, 2008, 45(5) : 837-845.)
- [5] Bhatnagar-Mathur P, Vadez V, Sharma K K Transgenic approaches for abiotic stress tolerance in plants:Retrospect and prospects [J] Plant Cell Report, 2008, 27: 411-424.
- [6] 周三,赵可夫关于野大豆盐腺问题的探讨 [J] 植物学报,2003, 45(5): 574-580(Zhou S, Zhao K F. Discussion on the problem of salt gland of Glycine soja [J] Acta Botanica Sinica,2003, 45(5): 574-580)
- [7] 王洪新,胡志昂,钟敏,等盐渍条件下野大豆群体的遗传分化和生理适应:同工酶和随机扩增多态DNA [J] 植物学报,1997, 39(1): 34-42 (Wang H X,Hu Z A, Zhong M, et al. Genetic differentiation and physiological adaptation of wild soybean(Glycine soja)populations under saline conditions: Isozymatic and random amplified polymorphic DNA study [J] Acta Botanica Sinica,1997, 39(1): 34-42)?
- [8] 杜莉莉, 於丙军. 栽培大豆和滩涂野大豆及其杂交后代耐盐性、农艺性状与籽粒品质分析 [J]. 中国油料作物学报, 2010, 32(1) : 77-82. (Du L L, Yu B J. Analysis of salt tolerance, agronomic traits and seed quality of Glycine max, salt-born Glycine soja and their hybrids [J]. Chinese Journal of Oil Crop Sciences, 2010, 32(1) : 77-82.)?
- [9] 陈宣钦,刘怀攀,罗庆云 耐盐性不同的野大豆种子和幼苗对等渗水分和 NaCl胁迫的响应 [J] 南京农业大学学报, 2006,29(4):28-32 (Chen X Q, Liu H P, Luo Q Y Responses of seed and seedling of Glycine soja with different salt tolerance to isoosmotic water and NaCl stresses [J] Journal of Nanjing Agricultural University,2006,29(4):28-32)
- [10] Pang T H, Shao G H, Lam H M Salt tolerance in soybean [J] Journal of Integrative Plant Biology, 2008, 50(10): 1196-1212.

- [11] 段德玉,刘小京,冯凤莲,等不同盐分胁迫对盐地碱蓬种子萌发的效应[J] 中国农学通报, 2003,19(6):168-172 (Duan D Y, Liu X J, Feng F L Effect of salinities on seed germination of Halophyte Suaeda Salsa [J] Chinese Agricultural Science Bulletin, 2003,19(6):168-172)
- [12] 沈禹颖,王锁民,陈亚明盐胁迫对牧草种子萌发及其恢复的影响[J] 草业学报,1999 (3):54-60 (Shen Y Y,Wang S M,Chen Y M The effect of saline condition on the germination and its recovery of pasture species [J] Acta Prataculturae Sinica, 1999(3):54-60)
- [13] 罗庆云. 野生大豆和栽培大豆耐盐机理及遗传研究[D]. 南京: 南京农业大学, 2003(Luo Q Y. Study on mechanism and inheritance of salt tolerance in wild soybean (Glycine soja) and cultivated soybean (G. max) [D]. Nanjing: Nanjing Agricultural University, 2003)
- [14] 郑青松, 杨文杰, 刘兆普, 等. 外源氯处理对向日葵幼苗生长、养分吸收及植株硝态氮含量的影响[J]. 植物营养与肥料学报, 2007, 13(6) : 1161-1165(Zheng Q S, Yang W J, Liu Z P, et al. Effects of supplemental chloride on growth, nutrient absorption and nitrate content of sunflower seedlings [J]. Journal of Plant Nutrition and Soil Science, 2007, 13 (6) :1161-1165)

相似文献/References:

- [1]高越,刘辉,陶波. 抗草甘膦野生大豆筛选及其抗性生理机制研究[J]. (article.aspx?type=view&id=201301018) 大豆科学, 2013, 32(01):76. [doi:10.3969/j.issn.1000-9841.2013.01.018]
- GAO Yue,LIU Hui,TAO Bo. Screening and Physiological Mechanisms of Resistance to Glyphosate in Wild Soybeans (Glycine soja) [J]. Soybean Science, 2013, 32(01):76. [doi:10.3969/j.issn.1000-9841.2013.01.018]
- [2]王军卫,侯立江,李? 登,等. 野生大豆紫色酸性磷酸酶PAP1基因的克隆及分析[J]. (article.aspx?type=view&id=201305004) 大豆科学, 2013, 32(05):596. [doi:10.11861/j.issn.1000-9841.2013.05.0596]
- WANG Jun-wei,HOU Li-jiang,LI Deng,et al.Cloning and Sequence Analysis of Purple Acid Phosphatase PAP1 Gene in Wild Soybean[J].Soybean Science, 2013, 32(01):596. [doi:10.11861/j.issn.1000-9841.2013.05.0596]
- [3]王军卫,侯立江,李? 登,等. 野生大豆紫色酸性磷酸酶PAP1基因的克隆及分析[J]. (article.aspx?type=view&id=201305004) 大豆科学, 2013, 32(05):596.
- WANG Jun-wei,HOU Li-jiang,LI Deng,et al. Cloning and Sequence Analysis of Purple Acid Phosphatase PAP1 Gene in Wild Soybean[J].Soybean Science, 2013, 32(01):596.
- [4]王丽燕. 硅对野生大豆幼苗耐盐性的影响及其机制研究[J]. (article.aspx?type=view&id=201305017) 大豆科学, 2013, 32(05):659. [doi:10.11861/j.issn.1000-9841.2013.05.0659]
- WANG Li-yan.Effects of Silicon on Salt Tolerance of Glycine soja Seedlings and Its Mechanism[J].Soybean Science, 2013, 32(01):659. [doi:10.11861/j.issn.1000-9841.2013.05.0659]
- [5]陈丽丽,王明玖,何丽君,等. 野生大豆ISSR体系的优化及其在远缘杂交后代鉴定中的利用[J]. (article.aspx?type=view&id=20130406) 大豆科学, 2013, 32(04):459. [doi:10.11861/j.issn.1000-9841.2013.04.0459]
- CHEN Li-li,WANG Ming-jiu,HE Li-jun,et al.Optimization for ISSR Reaction System of Wild Soybean and Its Utilization in Distant Hybrid Identification[J].Soybean Science, 2013, 32(01):459. [doi:10.11861/j.issn.1000-9841.2013.04.0459]
- [6]郑世英, 萧倍雷, 金桂芳. NaCl胁迫对野生大豆和栽培大豆叶绿素及光合特性的影响[J]. (article.aspx?type=view&id=20130411) 大豆科学, 2013, 32(04):486. [doi:10.11861/j.issn.1000-9841.2013.04.0486]
- ZHENG Shi-ying,XIAO Bei-lei,JIN Gui-fang.Effect of NaCl Stress on Chlorophyll Content and Photosynthetic Characteristics of Glycine soja and Glycine max[J].Soybean Science, 2013, 32(01):486. [doi:10.11861/j.issn.1000-9841.2013.04.0486]
- [7]徐艳平, 胡翠美, 张文会, 等. 干旱胁迫对野生大豆幼苗光合作用相关指标的影响[J]. (article.aspx?type=view&id=201303013) 大豆科学, 2013, 32(03):341. [doi:10.11861/j.issn.1000-9841.2013.03.0341]
- XU Yan-ping,HU Cui-mei,ZHANG Wen-hui,et al.Effect of Simulated Drought Stress on Photosynthesis Related Indexes at Seedling Stage of Wild Soybeans[J].Soybean Science, 2013, 32(01):341. [doi:10.11861/j.issn.1000-9841.2013.03.0341]
- [8]胡卫静, 何丽君, 何劲莉, 等. NaCl胁迫对野生与栽培大豆杂交后代株系生理指标的影响[J]. (article.aspx?type=view&id=201303015) 大豆科学, 2013, 32(03):349. [doi:10.11861/j.issn.1000-9841.2013.03.0349]
- HU Wei-jing,HE Li-jun,HE Jin-li,et al.Effects of NaCl Stress on Physiological Characters of Soybean Hybrids from Glycine max × Glycine soja[J].Soybean Science, 2013, 32(01):349. [doi:10.11861/j.issn.1000-9841.2013.03.0349]
- [9]王 旻,梁 玉,王欣欣,等. 即墨野生大豆主要成分及其营养价值分析[J]. (article.aspx?type=view&id=201303016) 大豆科学, 2013, 32(03):355. [doi:10.11861/j.issn.1000-9841.2013.03.0355]
- WANG Min,LIANG Yu,WANG Xin-xin,et al.Assessment on Nutritional Compositions and Value of Jimo Wild Soybean [J].Soybean Science, 2013, 32(01):355. [doi:10.11861/j.issn.1000-9841.2013.03.0355]
- [10]程鹏, 徐鹏飞, 范素杰, 等. 野生大豆接种大豆疫霉根腐病菌后过氧化物酶 (POD) 活性变化[J]. (article.aspx?type=view&id=201302013) 大豆科学, 2013, 32(02):197. [doi:10.3969/j.issn.1000-9841.2013.02.013]
- CHENG Peng,XU Peng-fei,FAN Su-jie,et al.Response of POD Activity in Glycine soja ?Inoculated by Phytophthora sojae [J].Soybean Science, 2013, 32(01):197. [doi:10.3969/j.issn.1000-9841.2013.02.013]

备注/Memo 基金项目: 国家“十一五”科技支撑计划(2009BADA7B04, 2008BAD95B12); 东营职业学院院级课题。

作者简介: 赵春 (1978-), 女, 博士, 讲师, 主要从事植物生理生态研究。E-mail:zhchmeimei@163.com。

更新日期/Last Update: 2015-04-12