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[1] 芮海英, 王丽娜, 金铃, 等. 苗期干旱胁迫对不同大豆品种叶片保护酶活性及丙二醛含量的影响[J]. 大豆科学, 2013, 32(05): 647-649. [doi:10.11861/j.issn.1000-9841.2013.05.0647]  
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### 苗期干旱胁迫对不同大豆品种叶片保护酶活性及丙二醛含量的影响

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Title: Effect of Drought Stress at Seedling on Protective Enzyme Activity and MDA Content of Different Soybeans

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关键词: 干旱胁迫 (KeySearch.aspx?type=Keyword&Sel=干旱胁迫); 大豆 (KeySearch.aspx?type=Keyword&Sel=大豆); 生理指标 (KeySearch.aspx?type=Keyword&Sel=生理指标)

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摘要: 为选育优良抗旱的大豆品种以及进一步研究大豆抗旱机制, 选用4个大庆地区主栽品种, 分别在干旱胁迫条件下测定了叶片超氧化物歧化酶(SOD)、过氧化物酶(POD)、过氧化氢酶(CAT)活性以及丙二醛(MDA)含量, 比较了4个品种耐旱性的差异, 探讨了其对不同强度干旱胁迫的生理适应性机制。结果表明: 在干旱胁迫条件下, 4个大豆品种叶片中3种保护性酶活性均呈先增加后降低的趋势, 而丙二醛含量则一直增加。干旱胁迫下, 品种间各保护酶活性由高到低依次为抗线3号、抗线12、合丰50和抗线9号, 而丙二醛含量则相反。说明抗线3号耐旱性较强, 而抗线9号耐旱性最差。

Abstract: ?In order to select soybean varieties with stonger drought resistance, four popular planted soybean cultivars were exposed to drought stress at seedling stage in greenhouse, the activity of superoxidase(SOD), peroxidase (POD), catalase (CAT) as well as malondialdehyde(MDA) content were determined. Under drought stress, the activity of SOD, POD and CAT showed increase and then decrease trend, while MDA content increased steadily. The activity of three protective enzymes in decending order was Kangxian 3, Kangxian 12, Hefeng 50, and Kangxian 9, while MDA content showed opposite trend. Results showed the drought resistance of Kangxian 3 was the highest, and Kangxian 9 was the lowest.

#### 相似文献/References:

- [1] 刘章雄, 李卫东, 孙石, 等. 1983~2010年北京大豆育成品种的亲本地理来源及其遗传贡献[J]. (darticle.aspx?type=view&id=201301001) 大豆科学, 2013, 32(01):1. [doi:10.3969/j.issn.1000-9841.2013.01.002]  
LIU Zhang-xiong, LI Wei-dong, SUN Shi, et al. Geographical Sources of Germplasm and Their Nuclear Contribution to Soybean Cultivars Released during 1983 to 2010 in Beijing[J]. Soybean Science, 2013, 32(05):1. [doi:10.3969/j.issn.1000-9841.2013.01.002]
- [2] 李彩云, 余永亮, 杨红旗, 等. 大豆脂质转运蛋白基因GmLTP3的特征分析[J]. (darticle.aspx?type=view&id=201301002) 大豆科学, 2013, 32(01):8. [doi:10.3969/j.issn.1000-9841.2013.01.003]  
LI Cai-yun, YU Yong-liang, YANG Hong-qi, et al. Characteristics of a Lipid-transfer Protein Gene GmLTP3 in Glycine max[J]. Soybean Science, 2013, 32(05):8. [doi:10.3969/j.issn.1000-9841.2013.01.003]
- [3] 王明霞, 崔晓霞, 薛晨晨, 等. 大豆耐盐基因GmHAL3a的克隆及RNAi载体的构建[J]. (darticle.aspx?type=view&id=201301003) 大豆科学, 2013, 32(01):12. [doi:10.3969/j.issn.1000-9841.2013.01.004]  
WANG Ming-xia, CUI Xiao-xia, XUE Chen-chen, et al. Cloning of Halotolerance 3 Gene and Construction of Its RNAi Vector in Soybean (Glycine max) [J]. Soybean Science, 2013, 32(05):12. [doi:10.3969/j.issn.1000-9841.2013.01.004]
- [4] 张春宝, 李玉秋, 彭宝, 等. 线粒体ISSR与SCAR标记鉴定大豆细胞质雄性不育系与保持系[J]. (darticle.aspx?type=view&id=201301005) 大豆科学, 2013, 32(01):19. [doi:10.3969/j.issn.1000-9841.2013.01.005]  
ZHANG Chun-bao, LI Yu-qiu, PENG Bao, et al. Identification of Soybean Cytoplasmic Male Sterile Line and Maintainer

- Line with Mitochondrial ISSR and SCAR Markers[J]. Soybean Science, 2013, 32(05):19. [doi:10.3969/j.issn.1000-9841.2013.01.005]
- [5] 卢清瑶, 赵琳, 李冬梅, 等. RAV基因对拟南芥和大豆不定芽再生的影响[J]. (article.aspx?type=view&id=201301006) 大豆科学, 2013, 32(01):23. [doi:10.3969/j.issn.1000-9841.2013.01.006]
- LU Qing-yao, ZHAO Lin, LI Dong-mei, et al. Effects of RAV gene on Shoot Regeneration of Arabidopsis and Soybean [J]. Soybean Science, 2013, 32(05):23. [doi:10.3969/j.issn.1000-9841.2013.01.006]
- [6] 杜景红, 刘丽君. 大豆fad3c基因沉默载体的构建[J]. (article.aspx?type=view&id=201301007) 大豆科学, 2013, 32(01):28. [doi:10.3969/j.issn.1000-9841.2013.01.007]
- DU Jing-hong, LIU Li-jun. Construction of fad3c Gene Silencing Vector in Soybean[J]. Soybean Science, 2013, 32(05):28. [doi:10.3969/j.issn.1000-9841.2013.01.007]
- [7] 张力伟, 樊颖伦, 牛腾飞, 等. 大豆“冀黄13”突变体筛选及突变体库的建立[J]. (article.aspx?type=view&id=201301008) 大豆科学, 2013, 32(01):33. [doi:10.3969/j.issn.1000-9841.2013.01.008]
- ZHANG Li-wei, FAN Ying-lun, NIU Teng-fei, et al. Screening of Mutants and Construction of Mutant Population for Soybean Cultivar "Jihuang13" [J]. Soybean Science, 2013, 32(05):33. [doi:10.3969/j.issn.1000-9841.2013.01.008]
- [8] 盖江南, 张彬彬, 吴瑶, 等. 大豆不定胚悬浮培养基基因型筛选及基因枪遗传转化的研究[J]. (article.aspx?type=view&id=201301009) 大豆科学, 2013, 32(01):38. [doi:10.3969/j.issn.1000-9841.2013.01.009]
- GAI Jiang-nan, ZHANG Bin-bin, WU Yao, et al. Screening of Soybean Genotypes Suitable for Suspension Culture with Adventitious Embryos and Genetic Transformation by Particle Bombardment[J]. Soybean Science, 2013, 32(05):38. [doi:10.3969/j.issn.1000-9841.2013.01.009]
- [9] 王鹏飞, 刘丽君, 唐晓飞, 等. 适于体细胞胚发生的大豆基因型筛选[J]. (article.aspx?type=view&id=201301010) 大豆科学, 2013, 32(01):43. [doi:10.3969/j.issn.1000-9841.2013.01.010]
- WANG Peng-fei, LIU Li-jun, TANG Xiao-fei, et al. Screening of Soybean Genotypes Suitable for Somatic Embryogenesis [J]. Soybean Science, 2013, 32(05):43. [doi:10.3969/j.issn.1000-9841.2013.01.010]
- [10] 刘德兴, 年海, 杨存义, 等. 耐酸铝大豆品种资源的筛选与鉴定[J]. (article.aspx?type=view&id=201301011) 大豆科学, 2013, 32(01):46. [doi:10.3969/j.issn.1000-9841.2013.01.011]
- LIU De-xing, NIAN Hai, YANG Cun-yi, et al. Screening and Identifying Soybean Germplasm Tolerant to Acid Aluminum [J]. Soybean Science, 2013, 32(05):46. [doi:10.3969/j.issn.1000-9841.2013.01.011]
- [11] 雍大文, 刘小明, 肖秀喜, 等. 不同种子处理对苗期干旱胁迫条件下大豆农艺性状、产量及品质的影响[J]. (article.aspx?type=view&id=201305009) 大豆科学, 2013, 32(05):620. [doi:10.11861/j.issn.1000-9841.2013.05.0620]
- YONG Tai-wen, LIU Xiao-ming, XIAO Xiu-xi, et al. Effects of Different Seed Treatments on Agronomic Properties, Yield and Quality of Soybean under Drought Stress at Seedling Stage[J]. Soybean Science, 2013, 32(05):620. [doi:10.11861/j.issn.1000-9841.2013.05.0620]
- [12] 王林红, 乔满, 乔亚科, 等. PEG模拟干旱胁迫下不同类型大豆的生理生化响应[J]. (article.aspx?type=view&id=201403013) 大豆科学, 2014, 33(03):370. [doi:10.11861/j.issn.1000-9841.2014.03.0370]
- WANG Lin-hong, QIAO Xiao, QIAO Ya-ke, et al. Physiological and Biochemical Responses of Different Soybeans under PEG Simulated Drought Stress[J]. Soybean Science, 2014, 33(05):370. [doi:10.11861/j.issn.1000-9841.2014.03.0370]
- [13] 刘峰, 宁海龙, 刘剑利, 等. 干旱胁迫对亚有限大豆植株鲜重建成与分配的影响[J]. (article.aspx?type=view&id=201105016) 大豆科学, 2011, 30(04):609. [doi:10.11861/j.issn.1000-9841.2011.04.0609]
- LIU Feng, NING Hai-long, LIU Jian-li, et al. Effects of Drought Stress on Establishment and Distribution of Plant Fresh Weight in Semi-determinate Soybean (Glycine max L. Merrill) Varieties[J]. Soybean Science, 2011, 30(05):609. [doi:10.11861/j.issn.1000-9841.2011.04.0609]
- [14] 阮英慧, 董守坤, 刘丽君, 等. 干旱胁迫下外源脱落酸对大豆花期生理特性的影响[J]. (article.aspx?type=view&id=201203010) 大豆科学, 2012, 31(03):385. [doi:10.3969/j.issn.1000-9841.2012.03.010]
- RUAN Ying-hui, DONG Shou-kun, LIU Li-jun, et al. Effects of Exogenous Abscisic Acid on Physiological Characteristics in Soybean Flowering under Drought Stress[J]. Soybean Science, 2012, 31(05):385. [doi:10.3969/j.issn.1000-9841.2012.03.010]
- [15] 董兴月, 林浩, 刘丽君, 等. 干旱胁迫对大豆生理指标的影响[J]. (article.aspx?type=view&id=201101017) 大豆科学, 2011, 30(01):83. [doi:10.11861/j.issn.1000-9841.2011.01.0083]
- DONG Xing-yue, LIN Hao, LIU Li-jun, et al. Influence of Drought Stress on Soybean Physiological Indexes[J]. Soybean Science, 2011, 30(05):83. [doi:10.11861/j.issn.1000-9841.2011.01.0083]
- [16] 刘丽君, 林浩, 唐晓飞, 等. 干旱胁迫对不同生育阶段大豆产量形态建成的影响[J]. (article.aspx?type=view&id=201103012) 大豆科学, 2011, 30(03):405. [doi:10.11861/j.issn.1000-9841.2011.03.0405]
- LIU Li-jun, LIN Hao, TANG Xiao-fei, et al. Drought Stress Influence Soybean Yield Morphogenesis in Different Growth Stages[J]. Soybean Science, 2011, 30(05):405. [doi:10.11861/j.issn.1000-9841.2011.03.0405]
- [17] 赵坤, 董守坤, 刘丽君, 等. 干旱胁迫对春大豆开花期根系生理特性的影响[J]. (article.aspx?type=view&id=201003017) 大豆科学, 2010, 29(03):437. [doi:10.11861/j.issn.1000-9841.2010.03.0437]
- ZHAO Kun, DONG Shou-kun, LIU Li-jun, et al. Effects of Drought Stress on Physiological Characteristics of Root System of Spring Soybean in Flowering Period[J]. Soybean Science, 2010, 29(05):437. [doi:10.11861/j.issn.1000-9841.2010.03.0437]
- [18] 李建英, 田中艳, 周长军, 等. 干旱胁迫下化控剂对大豆幼苗生长发育及保护酶活性的影响[J]. (article.aspx?type=view&id=201004014) 大豆科学, 2010, 29(04):611. [doi:10.11861/j.issn.1000-9841.2010.04.0611]
- LI Jian-ying, TIAN Zhong-yan, ZHOU Chang-jun, et al. Effect of Chemical Seed Coating on Growth and Development of Soybean Seedlings under Drought Stress[J]. Soybean Science, 2010, 29(05):611. [doi:10.11861/j.issn.1000-9841.2010.04.0611]
- [19] 钟鹏, 吴俊江, 刘丽君, 等. 低磷和干旱胁迫对不同基因型大豆光合生理特性的影响[J]. (article.aspx?type=view&id=200905009) 大豆科学, 2009, 28(05):806. [doi:10.11861/j.issn.1000-9841.2009.05.0806]
- ZHONG Peng, WU Jun-jiang, LIU Li-jun, et al. Effects of Phosphorus Deficiency and Drought Stress on Photosynthetic Characters in Different Genotypic Soybeans[J]. Soybean Science, 2009, 28(05):806. [doi:10.11861/j.issn.1000-9841.2009.05.0806]
- [20] 孙海峰, 战勇, 林海容, 等. 花期干旱对不同基因型大豆叶绿素荧光特性的影响[J]. (article.aspx?type=view&id=200801011) 大豆科学, 2008, 27(01):56. [doi:10.11861/j.issn.1000-9841.2008.01.0056]
- SUN Hai-feng, ZHAN Yong, LIN Hai-rong, et al. Response of Chlorophyll Fluorescence to Drought Stress at Flowering in Different Soybeans[J]. Soybean Science, 2008, 27(05):56. [doi:10.11861/j.issn.1000-9841.2008.01.0056]

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