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## 转 *AtCBF4* 基因大豆株系的抗旱性评价

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作者: 王兴宇<sup>1</sup> (KeySearch.aspx?type=Name&Sel=王兴宇); 魏 嵘<sup>2</sup> (KeySearch.aspx?type=Name&Sel=魏 嵘); 王伟威<sup>2</sup> (KeySearch.aspx?type=Name&Sel=王伟威); 薛永国<sup>2</sup> (KeySearch.aspx?type=Name&Sel=薛永国); 唐晓飞<sup>2</sup> (KeySearch.aspx?type=Name&Sel=唐晓飞); 吴广锡<sup>2</sup> (KeySearch.aspx?type=Name&Sel=吴广锡); 王鹏飞<sup>2</sup> (KeySearch.aspx?type=Name&Sel=王鹏飞); 于志远<sup>1</sup> (KeySearch.aspx?type=Name&Sel=于志远); 刘丽君<sup>2</sup> (KeySearch.aspx?type=Name&Sel=刘丽君)

1.东北农业大学 生命科学学院, 黑龙江 哈尔滨 150030; 2.黑龙江省农业科学院 大豆研究所, 黑龙江 哈尔滨 150086

Author(s): WANG Xing-yu<sup>1</sup> (KeySearch.aspx?type=Name&Sel=WANG Xing-yu); WEI Lai<sup>2</sup> (KeySearch.aspx?type=Name&Sel=WEI Lai); WANG Wei-wei<sup>2</sup> (KeySearch.aspx?type=Name&Sel=WANG Wei-wei); XUE Yong-guo<sup>2</sup> (KeySearch.aspx?type=Name&Sel=XUE Yong-guo); TANG Xiao-fei<sup>2</sup> (KeySearch.aspx?type=Name&Sel=TANG Xiao-fei); WU Guang-xi<sup>2</sup> (KeySearch.aspx?type=Name&Sel=WU Guang-xi); WANG Peng-fei<sup>2</sup> (KeySearch.aspx?type=Name&Sel=WANG Peng-fei); YU Zhi-yuan<sup>1</sup> (KeySearch.aspx?type=Name&Sel=YU Zhi-yuan); LIU Li-jun<sup>2</sup> (KeySearch.aspx?type=Name&Sel=LIU Li-jun)

1.College of Life Science, Northeast Agricultural University, Harbin 150030,China; 2.Soybean Research Institute, Heilongjiang Academy of Agricultural Sciences, Harbin 150086,China

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摘要: 干旱胁迫条件下考察转*AtCBF4*基因大豆株系的光合特性(净光合速率、气孔导度、胞间CO<sub>2</sub>浓度、蒸腾速率、瞬时分水利用率)、生理特性(脯氨酸、丙二醛、可溶性糖)以及产量性状(株高、节数、单株荚数、单株粒数、百粒重)的表现,综合评价7个株系之间的抗旱性差别。结果表明:转*AtCBF4*基因大豆叶肉细胞中脯氨酸的含量和可溶性糖含量与受体相比较,丙二醛含量增幅较小,光合生产能力和产量性状表现优于受体。综合结荚期和鼓粒期表现,所有转基因株系耐旱性均强于非转基因受体,其中HTCB59-5、HTCB59-2和HTCB59-4具有较强的耐旱能力。

Abstract: In this paper,we explored the performance of transgenic soybeans in photosynthetic characteristics of soybean (net photosynthetic rate, stomatal conductance, CO<sub>2</sub> concentration intercellular, transpiration rate, instantaneous water use efficiency), physical characteristics (Pro, MDA, soluble sugar) and yield traits (plant height, number of sections, the number of pods per plant, seed number per plant, seed weight) under drought stress. Comprehensive evaluate the difference in drought tolerance among 7 soybean lines. Compared of transgenic lines and normal lines, the research showed that the contents of soluble sugar (WSS) and free proline (Pro) from transgenic lines were higher than normal ones, while less increment of Malondialdehyde (MDA) appeared. The transgenic lines had little change in photosynthetic characteristics and yield traits from before to under drought resistance. All above showed that compared with the normal, all transgenic soybeans have more adjustment for water deficit in pod stage and pod filling stage. HTCB59-5, HTCB59-2 and HTCB59-4 have more drought tolerance than others.

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第一作者简介: 王兴宇(1989-), 男, 在读硕士, 主要从事遗传学研究。 E-mail: xiaoyudan666@126.com。

通讯作者: 刘丽君(1958-), 女, 主要从事大豆遗传育种研究。 E-mail: nkysbd@126.com。

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