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低磷胁迫对小麦代换系保护酶活性和丙二醛含量的影响及染色体效应

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Effects of phosphorus deficiency stress on protective enzyme activities,MDA content and chromosome of wheat substitution lines

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摘要 以中国春-Synthetic 6x染色体代换系及其亲本为材料，通过测定孕穗期、开花期、灌浆期不同磷处理条件下叶片的保护酶活性及丙二醛含量，研究低磷胁迫对相关生理性状的影响及染色体效应。结果表明，低磷胁迫下，SOD和POD活性上升，MDA含量增高; Synthetic 6x的2A、3B、2D、7D染色体上可能存在诱导SOD活性增强的基因; 2A、5A、6A、7B、7D染色体上可能存在诱导POD活性增强的基因; 5A、2D、5D、7D染色体上可能存在抑制MDA含量增高的基因。

关键词： 低磷胁迫 小麦代换系 保护酶 丙二醛 染色体效应

Abstract： The effects of phosphorus deficiency stress on physiological characteristic and chromosome response in wheat was studied by determining protective enzyme activities and MDA content and locating the gene controlling protective enzyme activity and MDA content at different developing stages using wheat substitution lines between Chinese Spring (CS) and Synthetic 6x. The results showed that SOD and POD activities, and MDA content increased under phosphorus deficiency stress. The genes promoting SOD activity might be located on 2A, 3B, 2D and 7D chromosome of Synthetic 6x; and the genes promoting POD activity might be located on 2A, 5A, 6A, 7B and 7D chromosome, while the genes inhibiting MDA content might be located on 5A, 2D, 5D and 7D chromosome of Synthetic 6x.

Keywords： P-deficiency substitution lines protective enzymes MDA chromosome effect

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