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磷水平对不同磷效率小麦叶绿素荧光参数的影响

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Effects of phosphorus levels on chlorophyll fluorescence parameters of wheat (Triticum aestivum L.) with different phosphorus efficiencies

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摘要 采用溶液培养方法，研究了磷水平（0、 10、 100、 500 和1000 μmol/L）对不同磷效率小麦（西农979和小偃6号）幼苗基部第1叶叶绿素荧光参数与叶绿素含量的影响。结果表明，随着磷水平的增加，两小麦幼苗基部第1叶的叶绿素a荧光参数均表现出先升高后降低的趋势，不同的是小偃6号在磷水平为100 μmol/L 时就达到了峰值，而西农979的最大值则出现在500 μmol/L磷水平下。说明小偃6号（磷高效）的光能转换效率和电子传递效率高于西农979，且受低磷胁迫的影响较小。

关键词： 磷水平 叶绿素荧光参数 叶绿素 磷效率 小麦

Abstract： The effects of phosphorus levels (0, 10, 100, 500 and 1000 μmol/L) on the chlorophyll fluorescence parameters and chlorophyll content of the proximal first leaves of wheat (Triticum aestivum L.) seedlings with different phosphorus efficiencies (Xinong 979 and Xiaoyan No. 6) were studied using the culture solution. The results showed that Chl.a fluorescence parameters of the first leaves of wheat seedlings increased at first and then declined under the increase of phosphorus levels. The maxima of Xinong 979 were under the 500 μmo/L phosphorus level, while those of Xiaoyan No.6 were under 100 μmol/L phosphorus level. This illustrates that the efficiency of light energy transformation and electron transportation of Xiaoyan No.6 (high phosphorus efficiency) are higher than those of Xinong 979, and are less affected by low P stress.

Keywords： phosphorus level chlorophyll fluorescence parameter chlorophyll phosphorus efficiency wheat

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