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研究论文

水稻长节间基因对GA3敏感性和不育系改良

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摘要 带有长节间基因eui水稻不论在苗期和抽穗期对GA3的敏感性均高于等位的Eui基因，尤其对茎部的第1和第2节间影响较大，属1-2节间伸长型。带有Eui基因则对第2和第3节间伸长影响较大，属2-3节间伸长型。带有eui基因的珍长保持系作为供体，将eui导入野败不育系二九南1号、二九青、V20以及矮败不育系协青早，使其穗伸出长度提高了82.3、82.4、70.4和58.1%、分别达到-2.0、-2.4、-4.2和-5.4cm。明确eui基因导入光敏核不育系中，也能有效排除其包颈现象。对eui的应用和不育系的选育作了讨论。

关键词 水稻不育系 eui基因,GA3敏感性,穗伸出度

分类号

Sensitivity of Elongated Internode Gene to GA3 and Improvemetn of MS Line in Rice

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Abstract Rice with the eui gene for the elongated uppermost internode is more sensitive than that with the Eui gene to GA3 at seedling and heading stages. The first and Second internodes of the Plant with the eui gene and the second and third ones of the plant with the Eui gene are greatly affected by GA3, which are considered as the first-second and second-third internode elongation types respectively. Using Zhen-chang B as the donor, the gene was transferred into the wild abortive cytoplasmic male sterile (CMS) lines Er-jiu-nan 1A, Er-jiu-qing A, V20A and dwarf abortive CMS line Xie-qing-zao A, and that leads an increase of panicle exerion (PE) in those lines by 82.3, 82.4,70.4,58.1%, and elongating to －2.0,-2.4,-4.2,-5.4cm respectively. It is proven that the eui gene can eliminate the panicle enclosure of CMS lines and its effect is modified by genetic background of lines. Even the recombination of the gene with the photoperiod sensitive genic MS line also can eliminate its panicle enclosure. The utilization of the eui gene and breeding for eui MS line are also discussed.

Key words Rice msle sterile line Eui gene Sensitivity to GA3 Panicle exertion

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