

研究论文

RI (t) 卷叶基因对杂交稻经济性状的影响

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摘要 以两对卷叶等基因系杂交组合为研究对象, 设置两种施肥水平, 研究RI(t)卷叶基因对杂交稻产量及产量构成因素的影响。结果表明, 正常肥力水平下, 卷叶组合秧苗期的叶龄、茎蘖数、假茎粗、苗高等指标均低于对应组合, 本田前期茎蘖数上升较缓, 高峰苗较少, 而最终有效穗数显著或极显著多于对应组合, 平均穗粒数和千粒重稍低于对应组合, 最终结实率和单株产量显著或极显著高于对应组合。增施穗肥处理中, 各组合倒3张叶片均显著或极显著拉长, 平展叶组合的叶基角和披垂度有较明显的增加; 各组合穗粒数显著或极显著增加, 千粒重降低或显著降低, 平展叶组合结实率显著或极显著降低而卷叶组合结实率变化不明显, 卷叶组合极显著增产而平展叶组合增产不显著。说明RI(t)基因在高肥水平下更有利于其丰产潜力的发挥。就卷叶效应的优劣及卷叶组合的栽培特点进行了探讨。

关键词 杂交稻 卷叶 叶基角 披垂度 产量 超高产育种

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Effects of Rolled Leaf Gene RI(t) on Economic Traits of Hybrid Rice

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Abstract Two pairs of crosses of rolled-leaf near-isogenic lines were used to study the effects of rolled-leaf gene RI(t) on yield and its component characteristics of hybrid rice under two levels of fertilizer application. At the treatment of normal fertilizer level, the rolled-leaf crosses appeared to be inferior to corresponding crosses in such characters as seedling leaf age, number of tillers, stem-base width and seedling height in the seedling stage. In the beginning stage after transplanting, the number of tillers of rolled-leaf crosses developed slower, resulting in less tillers in the high peak seedling stage and more effective tillers than the corresponding crosses. The grain number per panicle and 1 000-grain weight of rolled-leaf crosses were significantly lower while the seed-set rate and yield significantly higher than those of the corresponding crosses. In the treatment of more fertilizer applied to the early panicle growth stage, three upper leaves of all crosses grew significantly longer. The leaf drooping angles and basic leaf angles of the non-rolled-leaf crosses enlarged more than those of the corresponding crosses. The number of grains per panicle of all crosses increased significantly and the 1 000-grain weight dropped or significantly dropped. The seed-set rate dropped significantly in the non-rolled-leaf crosses but not in the corresponding crosses. The yield of rolled-leaf crosses increased significantly in the treatment of more fertilizer application but in the corresponding crosses not, which suggested that RI(t) gene could more easily lead to higher yield under the level of higher fertilizer application. Problems concerned and the possible utilization of the rolled-leaf traits were discussed.

Key words [Hybrid rice](#); [Rolled-leaf](#); [Basic leaf angle](#); [Leaf drooping angle](#); [Yield](#); [Breeding for Super high yield](#)

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