

研究论文

杂交中稻粒肥高效施用量与齐穗期SPAD值关系研究

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收稿日期 2006-3-14 修回日期 网络版发布日期 接受日期 2006-7-29

摘要 以杂交中稻组合 II 优602为材料, 通过不同基、蘖肥施氮量以塑造施粒肥当时植株营养状况的差异, 在此基础上, 分别设粒肥施用量处理, 探明了粒肥高效施用量与齐穗期库源结构关系。粒肥施用效果与稻齐穗期植株营养水平关系密切, 齐穗期剑叶SPAD值、叶片含氮量和群体单位面积的总颖花量3个因子决定粒肥高效施用量。建立了根据齐穗期剑叶SPAD值(x)预测粒肥的高效施氮量(y, kg hm⁻²)的回归方程, $y = -30.7980x + 1340.9$, $R^2 = 0.9114$, 并指出当齐穗期剑叶的SPAD值高于43.5时, 植株营养充足, 不需施粒肥, 此为临界的苗情诊断指标。

关键词 [杂交中稻](#) [粒肥](#) [高效施用量](#) [SPAD值](#)

分类号

Relationship between the Efficient Amount of Nitrogen Application for Grain Filling and the SPAD Value at Full Panicle Stage in Mid-Season Hybrid Rice

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Abstract Many studies on the sensibility of grain filling to nitrogen application at full panicle stage in rice have been conducted, with a lot of differences in results. Perhaps, it is related to different nutrition levels of nitrogen in plant at full panicle stage, on which there have been few studies. In this paper, the relationship between the efficient amount of nitrogen application for grain filling (NAGF) and the source-sink structure at full panicle stage was investigated with “II-you 602”, a combination of mid-season hybrid rice under different amounts of nitrogen application in basic fertilizer, tillering fertilizer, and NAGF, expecting to establish a theoretical basis for efficient nitrogen application in high yield rice cultivation. There was highly significant correlation between the effect of yield increase by NAGF and nutrition level of plant. The efficient amount of NAGF depended on SPAD values of the first leaf from top, leaf nitrogen content, and total No. of spikelets per m² at full panicle stage. There were highly significant negative correlations between the efficient amount(y, kg ha⁻¹) of NAGF and SPAD values (x) of the first leaf from top at full panicle stage, $y = -30.7980x + 1340.9$ and $R^2 = 0.9114$. When the SPAD value of the first leaf from top at full panicle stage was over 43.5, as a critical diagnosing index in rice production, NAGF was not necessary.

Key words [Mid-season hybrid rice](#) [Nitrogen application for grain filling](#) [Efficient applying amount](#) [SPAD value](#)

DOI:

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