

研究论文

机插稻育秧床土的培肥效应研究

张祖建¹, 于林惠², 王君¹, 郎有忠¹, 薛艳凤², 朱庆森¹

¹扬州大学/江苏省作物遗传生理重点实验室, 江苏扬州225009 ²江苏省农业机械推广中心, 江苏南京210024

收稿日期 2005-8-15 修回日期 网络版发布日期 2006-8-15 接受日期 2005-12-15

摘要 床土培肥是培育水稻机插秧苗的首要措施。在不同类型床土条件下对培肥水平与床土速效氮磷钾增加的关系及育秧过程中的肥力消耗进行了分析。结果表明, 通过添加速效肥料进行床土培肥, 可使床土速效NPK含量迅速增加, 速效氮的增加呈指数关系, 高培肥处理的增幅大于低培肥处理, 丘陵土的增加快于冲积土; 速效磷含量随培肥水平的提高直线上升, 床土类型间有显著差异, 丘陵土快于冲积土; 速效钾的增加趋势与速效磷相似, 但增速在不同床土间几近相同。育秧过程中速效养分的消耗也各具特点, 总的趋势是高培肥水平下高消耗, 速效氮消耗快于速效磷和速效钾。一定肥力范围内, 秧苗株高和地上部干物质随床土培肥水平的升高而增加, 通过床土培肥措施可以很好地调控秧苗株高。但根/冠比随培肥水平增加而下降。只有在合适的肥力指标范围内, 才能育成适宜形态和地上、地下部生长均衡的健壮机插秧苗。

关键词 [机插水稻](#) [育秧](#) [床土](#) [肥力](#) [秧苗质量](#)

分类号 [S511](#)

Effect of Seedbed Soil Fertilizing for Mechanical Transplanting Rice Seedling

ZHANG Zu-Jian¹, YU Lin-Hui², WANG Jun¹, LANG You-Zhong¹, XUE Yan-Feng², ZHU Qing-Sen¹

¹ Agricultural College, Yangzhou University, Yangzhou 225009, Jiangsu; ² Popularization Center of Agricultural Machinery of Jiangsu Province, Nanjing 210014, Jiangsu, China

Abstract Seedbed soil fertilizing is one of the key measures for rising mechanical transplanting rice seeding. The relationship of fertilizing levels to the increase of available N, P, K in seedbed soil and their uptake during seedling growth were analyzed, using alluvial soil and hill-paddy field soil as seedbed soil, fertilizing the seedbed soil with 10-10-5 compound fertilizer, with Wuyujing 3 as material. The results showed that contents of available N, P, K were increased quickly by application of inorganic fertilizer. The increase of available N exhibited an exponent curve, and was higher under high level of fertilization than under low level, and was faster in hill soil than in alluvial soil. Available P content was increased linearly with the increase of fertilizing level, there was significant difference between soil types, and the increased velocity in hill soil was more quickly than that in alluvial soil. The trend of increase in available K content was similar to that in P, but the difference of increased velocity between different types of soil was not significant. After the seedlings grew and consumed, the uptake of nutrients seedlings was high under a higher fertilizing level of available N, P, K during raising. The available N in seedbed in all treatments resumed to fertility level before fertilizing, indicating that the use of available N by seedling was affected by the fertility level of seedbed soil. The consumption of available P was increased linearly with the increase of the fertilizing level, and significant difference was found among seedbed soil types. The consumption of available K was similar with that of available P, but it was consistent among different soil types. The seedling growth on various fertilizing levels was observed. The data showed that seedling height was increased while root/shoot ratio was reduced with the increase of the fertilizing level within a suitable range. From the above results, we can conclude that fertilizing the seedbed could increase available N, P, K contents rapidly, but the characteristics were different and closely related to the soil types. Only within the range of suitable fertilizing level, the strong seedlings with the suitable shape and root/shoot ratio for mechanical transplanting can be raised.

Key words [Mechanical transplanting rice](#) [Seedling-raising](#) [Seedbed soil](#) [Soil fertility](#) [Seedling quality](#)

[Y](#)

DOI:

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(636KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中包含“机插水稻”的相关文章](#)

▶ 本文作者相关文章

· [张祖建](#)

· [于林惠](#)

· [王君](#)

· [郎有忠](#)

· [薛艳凤](#)

· [朱庆森](#)