

施肥模式对双季稻产量、养分吸收及经济效益的影响

汤雷雷^{1,2}, 万开元¹, 李祖章³, 陈防^{1*}

1中国科学院武汉植物园,中国科学院水生植物与流域生态重点实验室,湖北武汉430074;

2 中国科学院研究生院,北京100049; 3 江西省农业科学院土壤肥料与资源环境研究所,江西南昌330200

Effect of fertilizing patterns on grain yield, nutrient uptake and economical efficiency of double-season rice

TANG Lei-lei^{1,2}, WAN Kai-yuan¹, LI Zu-zhang³, CHEN Fang^{1**}

1 Key Laboratory of Aquatic Botany and Watershed Ecology, Wuhan Botanical Garden, Chinese Academy of Sciences, Wuhan,

Hubei 430074, China; 2 Graduate School of Chinese Academy of Sciences, Beijing 100049, China; 3 Soils and Fertilizer &

Resource and Environment Institute, Jiangxi Academy of Agricultural Sciences, Nanchang, Jiangxi 330200, China

[摘要](#)[参考文献](#)[相关文章](#)Download: [PDF \(1215KB\)](#) [HTML 1KB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要 水旱轮作田间定位试验条件下研究了连续4年(2005-2008)不同施肥模式对双季稻产量、养分吸收及经济效益的影响。结果表明,氮磷钾肥配施能显著提高水稻产量,长期有机无机肥配施增产效果明显。定位4年后,有机无机肥配施处理早稻和晚稻平均产量分别比未施肥处理增产135%和130%。随着产量的增加,稻草与稻谷中氮、磷和钾养分吸收量呈增大的趋势,表明水稻植株养分吸收量与稻谷产量呈显著正相关。不同施肥模式显著影响水稻稻草、稻谷中的氮、磷、钾养分含量。氮磷钾肥配施处理,特别是有机无机肥配施处理稻谷的养分吸收量最高,在土壤中的氮、磷盈余也最少。肥料配施虽增加了支出,但提高了经济产出,其纯收益相对较高,以有机无机肥配施处理的纯收益最高。双季稻生产实践中,有机无机肥配施模式值得推荐且需合理增施磷、钾肥。

关键词: 双季稻 施肥 产量 养分吸收 经济效益

Abstract: Effect of fertilization on double season rice yield, nutrient uptake and economic benefit under paddy upland rotation was studied through a long term field experiment during 2005 to 2008. The result showed that grain yields were significantly increased by combined application of nitrogen (N), phosphorus (P) and potassium (K) fertilizers. The effect of chemical fertilizers plus organic fertilizer [1/2 (M+F)] on grain yield became more significant as the planting seasons continued. The grain yield of early and late rice under 1/2 (M+F) treatment was increased to 135% and 130% respectively, over the CK treatment. The uptake of nutrients (N, P and K) increased in both straw and grains, with the corresponding increase in yield, which indicates the positive correlation between grain yield and nutrient uptake. Different fertilizing patterns greatly affected nutrient contents (N, P and K) in the plant. The chemical fertilizers plus organic fertilizer treatment promoted rice nutrient uptake and reduced residual N and P in the soil, compared with that in other treatments. Relatively higher net incomes were obtained from NPK and 1/2 (M+F) treatments in despite of higher inputs. It is recommended to apply chemical fertilizers plus organic fertilizer and increase P and K in double season rice production.

Keywords: double-season rice fertilization yield nutrient uptake economic benefit

Received 2010-06-01; published 2011-02-21

Corresponding Authors: 陈防

引用本文:

汤雷雷 万开元 李祖章 陈防.施肥模式对双季稻产量、养分吸收及经济效益的影响[J] 植物营养与肥科学报, 2011,V17(2): 259-268

TANG Lei-lei, WAN Kai-yuan, LI Zu-zhang, CHEN Fang. Effect of fertilizing patterns on grain yield, nutrient uptake and economical efficiency of double-season rice[J] Acta Metallurgica Sinica, 2011,V17(2): 259-268

Service

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [Email Alert](#)
- ▶ [RSS](#)

作者相关文章

- ▶ [汤雷雷](#)
- ▶ [陈防](#)