

研究论文

砂地小麦套作花生的产量优势及其与养分利用效率关系的研究

王秋杰, 寇长林, 王永歧, 王兴仁, 张福锁

河南省农业科学院土壤肥料研究所, 河南郑州, 450002

收稿日期 1996-6-21 修回日期 1997-1-30 网络版发布日期 接受日期

摘要 通过长期定位试验,研究了砂区小麦套作花生、小麦和花生接续种植两种种植方式的产量及施肥效应。结果表明小麦套作花生相对于二作物接续种植有明显的产量优势。4年平均增产分别为27.7%和14.3%,在不施化肥时,这种效应更为明显,但其与施用化肥的增产效应相比甚小。两种方式下,单施或配合施用氮磷化肥均有显著的增产效果,通过改良稳定性分析,以氮磷配合处理产量稳定性最高。合理配合施用氮、磷化肥(N12P12)使小麦套作花生方式下磷对氮的吸收及其利用效率和氮对磷的吸收及利用效率提高,是小麦套作花生较二作物接续种植持续增产的主要原因。但应注意的是随着小麦套作花生复种年限的增加,花生产量呈逐年下降趋势,轮作周期以4年为宜。

关键词 [套作](#) [养分利用效率](#) [产量优势](#) [土地当量比](#)

分类号

Studies on Yield Advantage of Wheat and Peanut Relay Inter Cropping System and Its Relation with Nutrient Utilization Efficiency in Sandy Land

Wang Qiujie, Kou Changlin, Wang Yongqi, Wang Xingren, Zhang Fusuo

Soil and Fertilizer Institute, Henan Academy of Agricultural Sciences, Zhengzhou 450002

Abstract The results of a long-term sited experiment that dealt with two cropping systems and their response to fertilization show that there were evident yield advantages in wheat and peanut relay intercropping system with a four-year average wheat yield increase by 27.7% and peanut by 14.3% compared with sequential cropping, and it was even greater while applying no chemical fertilizer, but was much little compared to yield response to fertilizer. Both solely and combinedly applying N and P chemical fertilizers significantly increased yield, and the yield of combined application was the stablest by stability analysis. In wheat and peanut relay intercropping system, the main reasons that rationally combined application of N and P fertilizer (N12P12) sustainably achieved yield increases were because P promoted the uptake of nitrogen and its utilization efficiency and N enhanced the uptake of P and PUE. It was noted that peanut yield decreased year after year with relay intercropping cycles added, and it was suitable for this system to continue 4 years.

Key words [Relay intercropping system](#) [Yield advantage](#) [Nutrient utilization efficiency](#) [Land equivalent ratio](#)

DOI:

通讯作者 王秋杰

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(337KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [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“套作”的相关文章](#)

▶ 本文作者相关文章

- [王秋杰](#)
- [寇长林](#)
- [王永歧](#)
- [王兴仁](#)
- [张福锁](#)