

小麦间作菠菜的边际效应与基施氮肥利用率

陈雨海;余松烈;于振文

山东农业大学农学院 山东泰安271018

The border effect and utilization rate of N fertilizer as base under wheat intercropped with spinach

CHEN Yu-hai; YU Song-lie; YU Zhen-wen *

Agronomy College of Shandong Agricultural University; Taian 271018; China

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摘要 麦田中设置65cm的空带,采用间作菠菜和不种作物(CK)2种方式并施15N肥料,种小麦处施尿素,研究小麦的边际效应和N肥利用效率。结果表明,CK处理的边行小麦具有显著的产量优势,间作菠菜后边行优势减小,但间作小麦仍具有明显的产量优势。边行优势的形成与小麦植株吸收N素密切相关。在小麦、菠菜共生期间,边行小麦的N素营养变劣,菠菜收获后,边行小麦比内行吸收了较多的N素尤其是基施N肥。小麦间作菠菜比CK处理,基肥N利用率提高,土壤残留量降低,损失量减少。

关键词: 小麦 菠菜 间作 边行优势 氮肥 小麦 菠菜 间作 边行优势 氮肥

Abstract: The experiment was conducted under pool culture with a 65cm width un-cropped strip and 6 rows wheat of 23.5 cm row spacing were planted in both side of the strip. Label ¹⁵N fertilizer was applied on the strip as base and urea was supplied in the area where wheat was planted. Two treatments were set up, one was sowing 2 rows spinach on the strip with a row spacing of 25cm, the other one was no crop in the strip (CK). The results showed that there was a significant border effect in CK pattern, but the border effect was sharply decreased in wheat intercropped with spinach, compared with CK. There was a close relationship between border effect and N absorption of border row. There was serious competition for N nutrient under the system of wheat intercropped with spinach, the N uptake of the border row of wheat was decreased because spinach absorbed more N during the growing stage of both crops. After the spinach was harvested, the border row of wheat absorbed more N nutrient and showed higher content than inner row. The intercropping system had higher utilization efficiency, lower content left in the soil and lower loss in anyway of base ¹⁵N fertilizer than those of CK.

Keywords:

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