



在线办公系统 LOGIN

- ▶ 作者投稿
- ▶ 作者查稿
- ▶ 专家审稿
- ▶ 稿件终审
- ▶ 编辑办公

姜丽娜, 吴珊珊, 祁诗月, 王珍珠, 孙伟胜, 李浩茹, 申泽龙. 外源Zn对冬小麦生育后期Zn吸收积累的影响[J]. 麦类作物学报, 2011, 31(6): 1099~1106

外源Zn对冬小麦生育后期Zn吸收积累的影响

Effects of Exogenous Zn on Zn Absorption and Accumulation of Winter Wheat at Later Growth Stage

DOI:

中文关键词: 冬小麦 外源Zn Zn积累与分配

英文关键词: Winter wheat Exogenous Zn Zn accumulation and distribution

基金项目: 国家十二五科技支撑计划项目(2011BAD16B14); 河南省重大科技专项(081100110200); 河南师范大学大学生创新性实验计划项目(091047635)。

作者

姜丽娜, 吴珊珊, 祁诗月, 王珍珠, 孙伟胜, 李浩茹, 申泽龙

单位

(河南师范大学生命科学学院, 河南新乡 453007)

摘要点击次数: 29

全文下载次数: 19

中文摘要:

为探讨外源Zn对小麦植株生育后期Zn吸收积累的影响, 以河南省主要推广品种周麦18和矮抗58为材料, 于2009-2010年进行网室盆栽试验, 测定了不同浓度的Zn(0、200、400和800 mg·kg⁻¹干土, 分别以Zn0、Zn2、Zn4、Zn8表示)处理下, 小麦灌浆初期及成熟期植株叶片、茎鞘、穗部、籽粒及根等部位的Zn含量和干物质积累量, 分析了各部位的Zn积累量和分配比例。结果表明, 外源Zn处理下, 灌浆初期至成熟期, 小麦植株各部位Zn含量为4.22~174.98 μg·g⁻¹, 以叶片Zn含量最高。Zn含量的变异主要是外源Zn所导致, 品种及品种×外源Zn的互作对各部位Zn含量亦有不同程度的影响。随外源Zn水平的提高, 植株干物质积累量呈现先升后降趋势, 在200 mg·kg⁻¹处理时, 植株干物质积累量最高。植株Zn积累总量亦随外源Zn处理浓度的增加而升高, 表现为Zn8>Zn4>Zn2>Zn0, 周麦18植株Zn积累量高于矮抗58。灌浆初期, 植株Zn的主要积累部位是叶片, 至成熟期, 籽粒和根是Zn的主要积累部位, 植株Zn有50%左右分配至籽粒中。在Zn2处理下, 籽粒Zn的分配比例最高。土壤中施加适量Zn肥, 有利于植株干物质的积累和Zn的吸收积累。

英文摘要:

In order to study the effects of exogenous Zn on Zn absorption and accumulation of winter wheat in later growth stage, pot experiments were arranged in green house during 2009-2010 with experimental materials of Zhoumai 18 and Aikang 58, two popular wheat varieties at present in Henan. Zn concentrations in cultivating soils were 4 levels of 0, 200, 400 and 800 mg·kg⁻¹, and indicated as Zn0, Zn2, Zn4 and Zn8, respectively. Zn concentration and dry matter weight in different organs in early filling stage and mature stage were measured to calculate the Zn accumulation amount and distribution ratio. The results indicated that Zn concentration in wheat organs ranged from 4.22 to 174.98 μg·g⁻¹, and Zn concentration in leaves tended to be the highest among all the organs. The variation of Zn concentration in organs was mainly due to exogenous Zn treatment, while the effects of variety and the interaction of variety × exogenous Zn would not be neglected. Exogenous Zn application could enhance dry matter accumulation in wheat significantly. However, excess Zn fertilizer lowered dry matter accumulation. In this paper, Zn concentration of 200 mg·kg⁻¹ was the most appropriate level to the accumulation of dry matter. Total Zn accumulation amount in wheat enhanced with the increase of exogenous Zn level, and the order of Zn accumulation could be described as Zn8 > Zn4 > Zn2 > Zn0. In this experiment, Zn accumulation in wheat of Zhoumai 18 was higher than that in Aikang 58. At early grain filling stage, Zn accumulation in leaves was the highest. At mature stage, the main organs of higher Zn distribution ratio were grains and roots. And about 50% of Zn accumulation in wheat was distributed in grains, the distribution ratio of Zn in grains tended to be the highest under Zn2 treatment. From the above, appropriate Zn application in soils could promote the accumulation of dry matter and Zn, and it was benefit for grain yield and quality of wheat.

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

关闭

学报相关信息

- ▶ 【投、审稿特别注意事项】
- ▶ 论文被引情况查询方法
- ▶ 引用本刊文章的简便方法
- ▶ 论文中插图的有关要求
- ▶ 电子版PDF校对稿修改方法
- ▶ 论文写作要求
- ▶ 参考文献著录
- ▶ 最新《核心期刊》

友情连接

- 北京勤云科技发展有限公司
- 期刊界
- CSCD数据库来源期刊表
- 中国期刊全文数据库
- 国外数据库收录中国期刊动态
- 法国肖邦技术公司

您是第634327位访问者
 版权所有《麦类作物学报》编辑部
 技术支持: 本系统由北京勤云科技发展有限公司设计

敬告作者

尊敬的作者:
 从即日起, 投给本刊的稿件, 图和表中, 除了标题需要有英文之外, 其余部分的汉字一律不再要英文。原因如下: 第一, 本刊部分稿件的图表示有大量文字, 若加上英文, 占版面太多; 第二, 国际数据库收录一般都只收英文摘要, 图表中不加英文不会影响继续收录, 有些被EI核心库收录的期刊一直都未给图表中加英文。

