

重金属污染土壤中菠菜对铅吸收和累积规律的研究

韩美清¹, 王路光¹, 郭平毅^{2*}, 张国印³, 武雪萍⁴

1河北省环境科学研究院, 河北石家庄 050051; 2山西农业大学农学院, 山西太谷 030801; 3河北省农林科学院农业资源环境研究所, 河北石家庄 050051; 4中国农业科学院农业资源与农业区划研究所, 北京, 100081

Effect of heavy metal pollution on the absorption and accumulation of Pb in spinach

HAN Mei-qing¹, WANG Lu-guang¹, GUO Ping-yi^{2*}, ZHANG Guo-yin³, WU Xue-ping^{4*}

1 Hebei Provincial Academy of Environmental Sciences, Shijiazhuang 050051, China;

2 Agronomy College, Shanxi Agricultural University, Taigu 030801, China;

3 Agriculture Resources and Environment Institute, Hebei Academy of Agriculture and Forestry Sciences, Shijiazhuang 050051, China;

4 Institute of Agricultural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, Beijing 100081, China

[摘要](#)[参考文献](#)[相关文章](#)Download: [PDF \(160KB\)](#) [HTML OKB](#) Export: [BibTeX](#) or [EndNote \(RIS\)](#) [Supporting Info](#)

摘要 通过盆栽试验对苗期和收获期菠菜地上部和地下部的重金属含量进行测定, 并计算各元素的累积率和分配率, 以了解土壤Pb污染和重金属复合污染条件下菠菜Pb的吸收和积累规律。结果表明, Pb、Cd、Cu、Zn复合污染条件下对Pb毒害起到抑制作用; 在Pb、Cd、Cu、Zn复合污染条件下, Cd、Cu、Zn等金属离子的存在抑制了菠菜根系对Pb离子的吸收, 而对菠菜植株内Pb离子的运转影响不大。在本试验条件下, Pb元素在地上部的分配率较低, 为14.73%~28.72%。

关键词: 复合污染 重金属 生物有效性 累积 复合污染 重金属 生物有效性 累积

Abstract:

In order to study the absorption and accumulation of Pb in spinach grown in soil polluted by Pb or combined heavy metal, a pot experiment was carried out. The contents of heavy metals in the shoot and roots at the seedling and harvest stages, and the accumulation and distribution rates of each metal element were investigated. Results demonstrated that: combined heavy metal pollution by Pb, Cd, Cu, and Zn depressed the toxic effect of Pd. Under the condition of multiple heavy metal pollution, Cd, Cu, and Zn inhibited the absorption of Pb by the root system, but had slight effect on the transportation of Pb. Under the experimental condition, the distribution rate of Pb in the shoot was low being about 14.73%–28.72%.

Keywords:

Received 2008-07-15;

引用本文:

韩美清¹, 王路光¹, 郭平毅^{2*}, 张国印³, 武雪萍⁴. 重金属污染土壤中菠菜对铅吸收和累积规律的研究 [J] 植物营养与肥料学报, 2009, V15(4): 975-980

HAN Mei-qing¹, WANG Lu-guang¹, GUO Ping-yi^{2*}, ZHANG Guo-yin³, WU Xue-ping⁴. Effect of heavy metal pollution on the absorption and accumulation of Pb in spinach [J] Acta Metallurgica Sinica, 2009, V15(4): 975-980

[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](#)