

研究报告

## 铜尾矿库区土壤与植物中重金属形态分析

王友保; 张莉; 沈章军; 李晶; 刘登义

安徽师范大学生命科学学院, 芜湖 241000

收稿日期 2005-2-24 修回日期 2005-7-6 网络版发布日期 接受日期

### 摘要

对铜陵铜尾矿区土壤和植物中重金属形态进行了研究.结果表明,尾矿区种植地极端贫瘠,有机质含量仅 $2.6\sim 5.8\text{ g}\cdot\text{kg}^{-1}$ ,而土壤Cu、Cd、Pb、Zn含量皆高于对照土壤,其中Cu含量达 $809.30\sim 1\ 395.54\text{ mg}\cdot\text{kg}^{-1}$ ,Cd含量达 $3.25\sim 6.35\text{ mg}\cdot\text{kg}^{-1}$ ,达到对照土壤30~60倍.结缕草和三叶草体内重金属含量与土壤重金属交换态及有机结合态含量成正相关,与碳酸盐结合态、铁锰氧化物结合态成显著或极显著负相关,与矿物态含量相关性不显著.在两种优势植物中,Cu、Zn、Pb均以活性较低的醋酸提取态、盐酸提取态和残渣态为主;Zn在根系和茎叶中,NaCl提取态占有较大比例,而Cd均以NaCl提取态为主.

关键词 [铜尾矿](#); [重金属](#); [化学形态](#); [结缕草](#); [三叶草](#)

分类号

## Chemical forms of heavy metals in the soils and plants of copper tailings yard

WANG Youbao,ZHANG Li,SHEN Zhangjun,LI Jing,LIU Dengyi

College of Life Sciene,Anhui Normal University,Wuhu 241000,China

### Abstract

The study on the chemical forms of heavy metals in the soils and plants at the copper tailings yard in Tongling City indicated that the soils were extremely poor,with organic mater content being  $2.6\sim 5.8\text{ g}\cdot\text{kg}^{-1}$ ,only 1/15 of the control,while their Cu,Cd,Pb and Zn contents were higher than the control,with Cu  $809.30\sim 1\ 395.54\text{ mg}\cdot\text{kg}^{-1}$  and Cd  $3.25\sim 6.35\text{ mg}\cdot\text{kg}^{-1}$ ,as 30~60 times as those of the control.The heavy metals contents in *Zoysia japonica* and *Trifolium pratense* had a significantly positive correlation with the contents of their exchangeable and organic forms in soils,a significantly or very significantly negative correlation with the forms of Fe-Mn oxides and carbonate,and no correlation with residual form.The main forms of Cu,Zn and Pb in *Z.japonica* and *T.pratense* were HAC-and HCl-extractable,and residual. The NaCl-extractable Zn content in the roots,stems and leaves of *Z.japonica* and *T.pratense* occupied a higher proportion,while NaCl-extractable Cd was the main form of Cd in both of the plants,not only in their roots but also in their leaves.

### Key words

[Copper tailings](#) [Heavy metal](#) [Chemical forms](#) [Zoysia japonica](#) [Trifolium pratense](#)

DOI:

### 扩展功能

#### 本文信息

▶ [Supporting info](#)

▶ [PDF\(522KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [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](#)

[“铜尾矿”；重金属；化学形态；结缕草；三叶草”](#)  
的 [相关文章](#)

▶ [本文作者相关文章](#)

- [王友保](#)
- [张莉](#)
- [沈章军](#)
- [李晶](#)
- [刘登义](#)

