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黔西北铅锌矿区植物群落分布及其对重金属的迁移特征

The plant community distribution and migration characteristics of heavy metals in tolerance dominant species in lead/zinc mine areas in Northwestern Guizhou Province

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中文摘要:

重金属耐性植物和超富集植物的筛选、鉴定和驯化是植物修复技术研究发展的关键。以黔西北4个不同恢复年限的铅锌矿为研究对象,通过群落生态调查利用聚类分析方法筛选出研究区域中重金属耐性植物优势种,并分析其对重金属Pb、Zn、Cu、Cd的迁移富集能力。结果表明:4个矿区共发现高等植物22种,分属13科21属,筛选出9种重金属耐性植物优势种,其中转运系数大于1的植物有:黄花蒿(Cu)、珠光香青(Zn)、大叶醉鱼草(Zn/Pb/Cd)、野艾蒿(Cu/Zn/Pb/Cd);没有富集系数大于1的植物。其中大叶醉鱼草具有耐贫瘠、耐旱、生物量大等优势,可将其作为典型的重金属耐性先锋植物,用于矿区废弃地的植物修复。

English Summary:

The key of Phytoremediation depends on screening, identification and domestication of tolerance species and hyperaccumulator. Chosed 4 lead-zinc mine areas as study areas in northwestern Guizhou Province, selected tolerance dominant species of heavy metals by investigating community ecological with method of clustering analysis. At the same time, analyzed the capability of migration and enrichment of heavy metals, which were Pb, Zn, Cu and Cd, in the tolerance dominant species. The results showed that there were 22 species of higher plants, which belonged to 13 families 21 chasses, in the 4 lead-zinc mine areas. And selected 9 tolerance dominant species of heavy metals, they were *Buddleja davidii*, *Artemisia lavandulaefolia*, *Artemisia annua*, *Stellaria media*, *Sonchus oleraceus*, *Saccharum spontaneum*, *Pteridium revolutum*, *Anaphalis margaritacea* and *Equisetum ramosissimum*. The transfer coefficients of the tolerance dominant species which were more than one were *Artemisia annua* (Cu), *Anaphalis margaritacea* (Zn), *Buddleja davidii* (Zn/Pb/Cd) and *Artemisia lavandulaefolia* (Cu/Zn/Pb/Cd). There was no specie which enrichment coefficients was more than one were none. There were some special advantages in the *Buddleja davidii*, such as arid-resistant, great biomass and so on. Thus, taken *Buddleja davidii* as a pioneer of tolerance species for Phytoremediation in the lead-zinc mine areas.

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