土壤、蔬菜Cd污染相关性分析与土壤污染阈限值研究

Correlation analysis of Cd pollution in vegetables and soils and the soil pollution threshold

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英文关键词：foliage vegetable; soil; Cd concentration; correlation; threshold

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中文摘要：

为探求土壤重金属污染和蔬菜污染的相关性，为绿色蔬菜生产提供技术支持，该研究以郑州市常见的5种叶菜类蔬菜(油麦菜、荆芥、藤菜、生菜、苋菜)为试验材料，采用温室盆栽土培试验方法研究了土壤不同浓度 Cd污染与蔬菜污染的相关性，并对绿色蔬菜生产要求的土壤污染阈限值进行了分析。研究结果表明：低浓度Cd污染的土壤对蔬菜生长、产量有促进作用；随着Cd浓度的增加，5种蔬菜中的Cd含量都呈现增加趋势。蔬菜中的Cd含量与土壤中的含量相关性较好；模拟得出土壤Cd阈限值为：油麦菜(0.3199±0.0349)mg/kg，荆芥(0.3335±0.01904)mg/kg，藤菜(0.1952±0.1072)mg/kg，生菜(0.1554±0.0064)mg/kg，苋菜(0.2690±0.0532)mg/kg；对Cd富集能力由大到小排序为：生菜、藤菜、苋菜、油麦菜、荆芥。

英文摘要：

In order to get the relationship between mental pollution in soil and vegetables and support green vegetable production, five kinds of common foliage vegetables(Lettuce Plant, Schizonepeta Tenuifolia Briq, Lpomoea aquelica, lettuce, Amaranthus hypochondriacus) were taken as experimental materials to study the correlation between the polluted vegetables and the soil of different concentration of Cd cultivated in greenhouse. The soil pollution threshold values to produce the green vegetables were analyzed. The results showed that: the soil polluted in low concentration Cd could promote the growing of vegetables and improve the production of vegetables; The contents of Cd in five kinds of vegetables increased with the increase of the Cd concentration in soil. The Cd contents in the vegetables and the soil correlated obviously; the Cd threshold values in soil were (0.3199±0.0349)mg/kg for Lettuce Plant, (0.3335±0.01904)mg/kg for Schizonepeta Tenuifolia Briq, (0.1952±0.1072)mg/kg for Lpomoea aquelica, (0.1554±0.0064)mg/kg for Lettuce, (0.2690±0.0532)mg/kg for Amaranthus hypochondriacus; The order of the ability of concentrating Cd from the largest to the smallest was, Lettuce, Lpomoea aquelica, Amaranthus hypochondriacus , Lettuce Plant and Schizonepeta Tenuifolia Briq.

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