

农业资源与环境科学

重金属Cu、Zn、Pb复合污染对紫色土壤酶活性的影响

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摘要:

土壤酶是反映土壤肥力的一个敏感生物指标, 还可以在在一定程度上反映土壤环境的优劣状况。采用室内培养试验研究了铜、锌、铅复合污染对土壤过氧化氢酶, 转化酶和脲酶活性的影响。结果表明铜、锌对三种酶都有抑制作用, 其中锌对三种酶有显著抑制效果, 而铅在一定浓度下对三种酶有激发作用。铜、锌、铅复合污染对脲酶的影响表现出协同抑制负效应的特征; 对转化酶却表现出一定的拮抗作用, 尤其铅浓度较高时, 拮抗作用较明显; 对过氧化氢酶的影响主要随铜、锌浓度增加而降低, 锌的抑制作用显著。从土壤酶角度看, 铅对轻度锌和铜污染有改良作用, 而对铜污染修复效果不显著。

关键词: 复合污染

Effects of Cu,Zn and Pb Compound Pollution of Heavy Metalson Purple Soil Enzymic Activities

Abstract:

Enzymatic activities in heavy metal polluted soil had been widely used to indicate the extent of pollution. Indoor cultivation experiment was conducted to study effects of copper, zinc, lead compound pollution on the soil catalase, converting enzyme and urease activity.The results show that copper and zinc can inhibit the three enzymes, enzyme zinc on three significant inhibitory effect, and the concentration of lead in the next three to stimulate role of the enzyme. Copper, zinc, lead pollution on the compound of urease showed synergistic inhibition of the negative effect; Invertase right there has been a certain antagonism, particularly the higher the concentration of lead , the antagonistic effect was obvious, right catalase with the major impact of copper,zinc concentration increased, the effect of zinc significantly. From the angle of the soil enzymes,lead to mild zinc and copper pollution improvement, and the copper pollution repair effect is not significant.

Keywords: compound pollution

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