

论文

蘑菇废料施用对煤矿区复垦土壤颗粒组成的影响

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摘要:

为了研究施用蘑菇废料对煤矿塌陷区复垦土壤颗粒组成的影响, 在山东邹城市平阳寺镇2001年国家投资复垦项目区内选取有代表性的8块试验区。以未破坏地块为对照, 对每个地块分6个层次采集土壤样品进行分析, 采用英国的马尔文激光粒度仪测量土壤颗粒组成, 通过SPSS分析各地块与未破坏地块土壤颗粒组成的相关性。结果表明: 蘑菇废料对土壤颗粒组成的影响实质是利用其所含有的腐殖质分解, 并作为黏结剂增加土壤微团聚体的比重, 改善土壤的物理结构性。施用蘑菇废料对土壤颗粒组成的影响主要在0~15.24 cm的土层内, 施用蘑菇废料的地块与未破坏地块的颗粒组成相关性均比未施用蘑菇地块的相关性系数高, 最明显的是施用蘑菇废料4a的样区4比未施用蘑菇废料的样区3的相关性系数高0.17~0.18, 其不同粒径的颗粒组成与未破坏地块样区1的相关性系数为0.940。因而, 蘑菇废料的施用对于复垦土壤的物理性状具有改良作用而且可以能够提高土壤的保水保肥能力。

关键词: 蘑菇废料; 土地复垦; 土壤颗粒; 煤矿区

Effects of using mushroom material on reclamation soil particle-composition in coal mineral area

Abstract:

In order to study the effects of using mushroom material on the particle composition of reclamation land of coal mining area, authors chose eight representative experimental plots in state investment reclamation project 2001 of Pingyangsi town Zoucheng city. Took the undamaged land as a contrast and each block is divided into six levels to collect soil sample for analysis, and used British Malvern laser particle size analyzer to measure soil particle composition, according to SPSS to analyze the soil particles correlation around every block and the undamaged plots. The results show that the essence effect of using mushroom material on soil particle composition is to make use of the decomposition of humus they contained, as a binder to increase the proportion of soil micro aggregates and to improve soil physical structure. The specific conclusion is that the principal effect of using mushroom material on the particle composition is in the level of 0 to 15.24 cm, the soil particles correlation around the block which have used the mushroom material and the undamaged plots is higher than the block which didn't use the mushroom material, the maximum difference is from 0.17 to 0.18 which is measured between plot four which have used mushroom material for four years and plot three which didn't use it, the soil particles correlation around plot four and the undamaged plots one is 0.940. Therefore, the application of mushroom waste for reclamation soil can be able to improve the physical properties and ameliorate the soil retention of fat and water.

Keywords: mushroom material; land reclamation; soil particles; mining areas

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