Effect of Improved Micro-pore Mineral Fertilizer on Cadmium Speciation in Contaminated Soil

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Micro-pore mineral fertilizer which is rich in potassium, silicon and calcium minerals is a kind of soil conditioner. It has the ability to enhance the agricultural production of soil, improve the ecological environment of the soil, control the desertification which is caused by the loss of the soil layer. In this paper, the Micro-pore mineral fertilizer was the experimental object, and the static experiment method was used to research the effect of pH, organic carbon and bentonite to the contaminated soil[1]. At present, the experimental results show that these three formula have a certain effect on Cadmium speciation in contaminated soil.Cadmium was fastened in soil after adding equal mass of sodium hydroxide into Micro-pore mineral fertilizer. The ratio of exchangeable fraction decreased by 5%; the ratio of the residual fraction increased by 10%; however the change of the reducible fraction and the oxidable fraction were very small compared to previous ratios.After adding equal mass organic carbon, Cadmium was activated in soil, and the proportion of exchangeable fraction and reducible fraction increased by 4% and 10%, while the proportion of residual fraction decreased by 11%. Adding the same quality of bentonite, the experimental results were similar to those of organic carbon addition, which showed the activation characteristics of Cadmium. However, the combination of bentonite and microporous mineral fertilizer showed that the Cadmium was activated in the oxidable fraction.

References

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