The characteristics and ages study about the Yuemakeqi mafic-ultramafic rock in the southern Altyn Fault

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The Altyn Fault belt is the most eye-catching NEE tectonic belt of China at the northern edge of the Qinghai-Tibet Plateau. In recent years, in the southern Altyn Fault zone, researchers have found many mafic-ultramafic rocks that related ore points and mineralization points, It is becoming an important perspective mineral land that relate the mafic - ultramafic rocks. Yuemakeqi mafic-ultramafic rocks which in the subduction complex rocks band of the southern Altyn Fault zone, is primarily composed of peridotite, gabbro, basalt and a small quantity of gabbro-diabase, it is the ophiolites that involved in the Altyn Fault, the lower ultramafic with m/f =9.49-9.64, indicating it is a magnesium ultrabasic rock; The upper mafic has a similar characteristics to the Mid Ocean Ridge Basalt, such as in chondrite-normalized REE diagram and primitive mantle-normalized trace elements diagram, in Zr/Y-Zr and Ti/100-Zr-Y*3 diagram, all samples are located in the ocean ridge environment. LA-ICP-MS Zircon U-Pb dating show that the age of this ophiolite is 500.7±1.9Ma and it formed in the late Cambrian, it is the product of the Rodinia super-continent cracking. In Yuemakeqi region, there are copper and nickel anomalies, the copper anomaly is caused by the copper mine in the upper basalt of the ophiolite unit, and the nickel geochemical anomaly is caused by the nickel-containing serpentine in lower ultramafic of the ophiolite unit, therefor, we would be search a copper deposit in Yuemakeqi mafic-ultramafic rock belt, which be related to the ophiolite.

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Influencing factors to concentrations and validites of Cu, Pb, Zn in paddy rhizosphere soil in Hefei City, China

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Introduction

The accumulation and toxicity of the metal elements in the soil-plant system not only have the relationship with the concentrations of elements, but also are controlled by their useful quantities[1-4]. This paper studied the influencing factors to the concentrations and validities of Cu, Pb, Zn elements in the paddy rhizosphere soil in Hefei City with 60 soil samples.

Results

The results indicated that, the concentrations had the distinct positive correlation with the useful quantities for Cu, Pb and Zn elements in the soil, and the correlation coefficients were 0.63, 0.88, 0.71for Cu, Pb, Zn. The concentrations of Cu, Pb, Zn had no correlation with the pH, TFe_2O_3 and useful quantity of Fe, and had distinct positive correlation with the concentration of organic matter in the soil, the correlation coefficients were all greater than 0.55. The useful quantities of Cu, Pb, Zn had distinct positive correlation with the TFe_2O_3 in the soil, and the correlation coefficients were all greater than 0.39. The validity of Cu, Pb had distinct positive correlation with the useful quantity of Fe in the soil, and the correlation coefficients were 0.63 and 0.49.

Conclusions

The concentrations of Cu, Pb and Zn elements were influenced by the organic matter distinctly, and the useful quantities were controlled by the TFe_2O_3 in the paddy rhizosphere soil in Hefei City. The validity of Cu, Pb had the relationship with the useful quantity of Fe.

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