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(1.   100081;

2.   426182)

:   31a   6   (、 、 、 、 、

)、2   (、)   0—100 cm   pH 、

                                      。   : (1)   pH

                。(2)   、   、P、   P   >   >   N、 K、   K

    >   >   N   >   >   。(3)   :   >   >   >   >

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Characteristics of soil fertility under different vegetation types in the hilly red soil region of southern Hunan

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Abstract: In Southern China the hilly red soil region accounts for 2.0×10^6 km^2 and is an important production base for agriculture forestry and animal husbandry. However because of the increasing demand for firewood timber and food in recent decades many types of vegetation have been destroyed which has resulted in local soil degradation and soil fertility decline giving the region the title "red desert". This soil degradation significantly limits sustainable economic development in this region and so restoring vegetation and improving soil fertility are vital. Natural vegetation restoration by preventing human disturbance is an important method for improving fertility by redistributing nutrients in degraded red soil in subtropical hilly regions. However improving soil fertility by natural vegetation restoration is a long-term process and the effect of different plants in improving soil fertility is not well understood. In this study the distribution regularities of nutrients in the soil profile under natural vegetation restoration compared with that in artificial vegetation plots and bare plots were investigated and the effect of natural vegetation restoration on improving soil fertility in subtropical hilly regions was assessed.

A long-term natural vegetation restoration experiment (—2 hectares) was initiated in 1981 at the Red Soil Experiment Station of the Chinese Academy of Agricultural Sciences Qiyang County Hunan Province. The effect of natural vegetation

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