

Land Potential Productivity of Red Soil Slope Land Regarding Different Measures

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Abstract: The red-soil region of the tropical and sub-tropical area, located in South China, is one of important cases for tropical cash and food crops base within tropical and subtropics regions. Conducting the research on potential productivity of slope with red soil is very useful to develop and utilize the soil resources. Based on the EPIC (Environmental Policy-Integrated Climate) model. A computation method for potential productivity of slope land with red soil is set up in this paper. Soil nutrients are taken as the modified function in the method. With the impacts of weather and soil on thermal production potential considered, three kinds of slope with different treatments and bare slope are studied in the paper. The paper presented the impacts of different treatments on the productivity the slope with red soil. And The results indicated that land potential productivity under measure II (horizontal terraces of orchards with Bahia grass planted on the walls and mounds before but a ditch behind) was the highest, which was 300 times higher than that of bare slope. The results also revealed that water is not the limited parameter for land productivity in this region since the precipitation is enough for crop. The capacity to meet the crop needs of soil nutrients decreased with the increase of soil erosion, and available phosphorus is the key parameter for the crop growth.

Key words: red soil; different measures; potential productivity; model

封面照片: 丹霞山

丹霞山位于广东省韶关市仁化县境内,地处南岭山脉的南坡,属中亚热带向南亚热带过渡的亚热带季风性湿润气候区。丹霞山为红色岩石(主要是碎屑岩)分布区发育的一种水平或近水平构造地貌,构成这种地貌的岩石主要为晚白垩世的红色陆相砂砾岩,系砂砾岩经风化剥蚀和流水侵蚀等作用,形成的孤立状山峰和陡峭崖壁为主的地貌景观。地貌学上将这种地貌命名为丹霞地貌。其也被形象的称作“赤壁丹崖”,是一种具有很高观赏价值的风景地貌。

丹霞山是广东省面积最大的、以丹霞地貌为主的风景区,也为国家自然保护区、国家地质公园、世界地质公园。2010年8月1日,在巴西利亚举行的第34届世界遗产大会审议通过了中国湖南崀山、广东丹霞山、福建泰宁、贵州赤水、江西龙虎山和浙江江郎山联合申报的“中国丹霞地貌”列入“世界自然遗产目录”。

(嘉益)