

Study on the runoff sediment transport rate of two planting modes under the influence of rainfall

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Abstract

:In order to explore the impact of ecological planting pattern on runoff sediment transport rate(T_2), this study in two planting modes with a single planting of *Prunella vulgaris* (A) and *P. vulgaris* and earthworms (B) were investigated through simulated rainfall experiments in the field. The results showed that: 1) T_2 decreased first and then stabilized with the rainfall duration, which is dominated by the composition of soil particle size and runoff depth; 2) T_2 under gentle slope and steep slope conditions is greatly affected by rainfall intensity and slope, respectively; 3) T_2 , which has a good correlation with runoff separation rate (D_2), needs to be explained in conjunction with soil properties or raindrop kinetic energy. The main controlling factors of T_2 in bare slope, B, A are raindrop kinetic energy, D_2 , and organic matter, which explain 93.10%, 95.76%, and 98.65%. Compared with B, A has obvious economic and ecological value.

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