عنوان مقاله:

Modeling of Sediment Yield and Bicarbonate Concentration in Kordan Watershed

محل انتشار:

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نویسندگان:

.F. Sarmadian - *Department of Soil Science, College of Agriculture,Tehran University, Islamic Republic of Iran*

.P. Rahimy - *Department of Soil Science, College of Agriculture,Tehran University, Islamic Republic of Iran*

.A. Keshavarzi - *Department of Soil Science, College of Agriculture,Tehran University, Islamic Republic of Iran*

خلاصه مقاله:

In the present study, the Soil and Water Assessment Tool (SWAT ۲۰۰۰) model was tested on both a monthly and yearly basis and applied to the Kordan Watershed, located in Iran. The main objective of the research was to assess the accuracy of the model in sediment-yield and surface water bicarbonate concentration estimation. The attributes of sub-watersheds, tributary channels and the main channel in each sub-watershed were generated using the Digital Elevation Model (DEM) and Geographical Information System (GIS) Arc View SWAT ۲۰۰۰ interface. The model was calibrated and validated for the period from ۱۹۹۰ until ۲۰۰۴. Calibration results revealed that the model predicted monthly and yearly sediment-yield, but not such good results were obtained for the bicarbonate concentration. Therefore, some efforts were made in order to find a solution for SWAT bicarbonate temporal modeling. Around ۷۰ samples of the Kordan River water quality data were used and, upon doing statistical calculations, the best correlation between the average pH–EC of water and the bicarbonate concentration was obtained. The formula shall be tested at several watersheds, and it can also be defined to SWAT in order that the model is able to calculate bicarbonate concentration according to pH and EC of the river water, which are introduced to SWAT by the user as a stream water (quality file (SWQ .

کلمات کلیدی:

EC, pH, sedimentation, SWAT