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AN EVALUATION OF WATER QUALITY IN MICRO-CATCHMENTS WITH HIGH EROSION RISK WITH CCME WATER QUALITY INDEX: CASE OF ÇAPAKÇUR MICROCATCHMENT

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Abstract

A significant portion of the world's freshwater resources is allocated to agricultural irrigation. However, these waters are increasingly polluted due to various environmental factors. This pollution subsequently leads to soil contamination through irrigation and the degradation of specific productivity characteristics. As a result, monitoring water resources has become a critical global concern. In this study, we evaluated the water quality of the Çapakçur Stream, an essential water source for the Bingöl Plain, using the Water Quality Index (WQI) developed by the Canadian Council of Ministers of the Environment (CCME). Monthly samples were collected from six different locations throughout 2019. Subsequently, 22 physicochemical parameters related to water quality were analyzed. The analysis indicated that the lowest water quality index values for the Çapakçur Stream occurred in July in the monthly assessment and during the spring season. In contrast, the highest water quality index was recorded in January, both monthly and during summer. Notably, all obtained results were classified as "marginal" according to the WQI classification. The index values ranged from 50 to 54 according to the seasons, 49 to 56 according to the months, and 48 to 56 according to the sampling points. Consistent results (52) were observed during both dry and wet precipitation periods. These findings emphasize the urgent need for a cautious approach in using this water resource for irrigation, alongside the importance of regular monitoring and periodic analyses to maintain its quality.

Key words: irrigation, soil erosion, water management, water pollution, water quality index

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