

Use of Simuliidae (Insecta, Diptera) species as indicators of aquatic habitat quality of Yeşilirmak River Basin (Turkey)

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ABSTRACT

1. In order to determine the Simuliidae fauna of Yeşilirmak River Basin and relationships between Simuliidae species and water quality, benthic macroinvertebrate samples collected between 14 and 31 July 2008.
2. Physical and chemical variables of habitats such as water temperature, pH, conductivity, dissolved oxygen, turbidity and nitrite were also given.
3. As a result of this study, 10 Simuliidae species (*Metacnephia* sp., *Simulium* (E.) *angustipes*, *Simulium* (N.) *costatum*, *Simulium* (S.) *argenteostriatum*, *Simulium* (S.) *bezzii*, *Simulium* (S.) *ornatum*, *Simulium* (S.) *trifasciatum*, *Simulium* (W.) *balcanicum*, *Simulium* (W.) *lineatum*, *Simulium* (W.) *pseudequinum*) were determined from 12 collecting sites. *Simulium* (N.) *costatum* and *Simulium* (S.) *trifasciatum* were recorded from Yeşilirmak River Basin for the first time.
4. Ecological quality of collecting sites was classified according to the results of Biological Monitoring Working Party (BMWP) score and Belgian Biotic Index (BBI).
5. Yeşilirmak River has been affected by various human activities (industries, urban sewage, organic effluent, dams, hydroelectric power plants). Relationships between these environmental variables and Simuliidae species were assessed.
6. Simuliidae species were indicators of water and habitat quality of Yeşilirmak River Basin because of distribution of indicator Simuliidae species concordant with water quality.

KEY WORDS: Blackflies, BMWP, BBI, dam, habitat degradation, indicator, physico-chemical variables, Simuliidae, Turkey, water quality, Yeşilirmak River Basin.