Phenotypic Analysis on Trichoptera Larvae Behavior to Assess a Stream Quality and Changes in Flow

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Macroinvertebrates have been extensively utilized to evaluate the water quality of aquatic ecosystems (Urakawa and Bernhard, 2017; Singh and Sharma, 2020). Caddy flies (Trichoptera) are pollution sensitive macroinvertebrates, whose behavior is altered according to the quality parameters on streams. A freshwater ecosystem quality is a vital concern for different organisms and for mankind health (Sarker, et al 2019). The aim of the researchers in the study was to evaluate the phenotypic characteristics of Trichoptera (abundance and distribution) according to the water quality chemical tests to correlate the data collected. The researchers proposed if the phenotypic characteristics of the Trichoptera larvae can be used to predict the quality of water and changes on streams. Sampling was taken from two streams. The researchers collected organisms, identified the distribution area, and counted the number of organisms collected. Then, performed a complete set of water quality parameters to the samples. The analysis reveals that the streams with low concentrations of alkalinity, cyanuric acid and nitrates showed a higher number of organisms. However, the distribution of Trichoptera was in the center of the streams besides the area with lower flow where they usually fed. The hypothesis was retained, because the phenotypic characteristics of the Trichoptera larvae collected correlated with the low levels of quality and the changes of flow on streams. These findings provide an alternative to assess quality and flow changes with macroinvertebrates. Further studies are recommended increasing the number of samples and the location of the streams.

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