

Effects of macrophyte complexity on the periphytic algae assemblages in Caxiuanã Basin

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Abstract: Environmental heterogeneity and habitat complexity are important factors contributing to diversity. Aquatic algae contribute to the primary production and are the bases of several food webs. Periphytic algae attach to substrate. Different types of surface structures are important for algal colonisation. Habitat heterogeneity and complexity influence the available space, refugia, and supply limiting resources. Aquatic macrophytes contribute to habitat heterogeneity. The goal of this study is to answer the question “Does substrate complexity influence the genus richness, abundance, composition and growth form of the periphytic algae in Caxiuanã basin?”. We sampled five points along the river Rio Caxiuana, representing five blocks, each one with two treatments (*Nymphaea* and *Cabomba*) under the same conditions. Periphytic algae were quantified and identified at genus level. We identified 53 genera of periphytic algae, which *Eunotia*, *Frustulia* and *Gomphonema* were the most abundant genus in both treatments, and consequently showed higher density. There was no significant difference in genus richness, density, growth forms, and composition between the two surfaces. Unicellular growth form was the most abundant on both surfaces. The present study showed that type of substrate was not a critical factor for determining richness, density, composition and growth forms of attached algal communities. However, there is a controversy about the factors affecting periphytic assemblages, such as type, shape of substrate and competition from phytoplankton. Further studies should include a seasonal variation, increased number of samples, gradient of habitat characteristics, and identification to a lower taxonomic level.

Key words: *Habitat heterogeneity, Substrate Complexity, Biodiversity, Periphytic Algae, Aquatic macrophytes, Caxiuanã*