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A review on the role of nutrients in development and organization of periphyton

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ABSTRACT:

Periphyton communities have not received wider attention and often misunderstood with 'biofilm' for their nature of development and role in aquatic ecosystem. To clarify its functional objective in aquatic ecosystem, present review proposes a functional definition for 'periphyton' in terms of ecological interactions and also outlines its ecological role in nutrient sharing with other aquatic components. The development and succession of periphyton is a function of nutrient and carbon (C) sharing with its constituent parts and ambient environment. Through mechanisms like entrapment, de novo synthesis, nutrient leakage, trophic upgrading etc., ambient nutrients are routed to periphyton and transferred to upper trophic levels. Periphyton communities stand next to phytoplankton for their contribution to primary productivity, in nutrient rich aquatic environment. Unlike phytoplankton, nutrient poor aquatic environment has no effect on periphytic primary productivity. As periphyton communities are attached to substratum, their ability to assimilate organic nutrient through substratum is an additional advantage over phytoplankton.

Keywords:
Aquatic ecosystem, Biofilm, carbon, primary productivity, phytoplankton.