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Diversity of Cyanobacterial Population during Monsoon Season in Rice Fields of Hooghly, West Bengal, India

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Abstract: In the present study, 41 cyanobacterial species were collected and isolated from three different rice fields in Hooghly district of West Bengal at different stages (sowing, vegetative growth and mature stage) of rice cultivation during monsoon season. Of the collected species, 19 were non-heterocystous and 22 were heterocystous species. The cyanobactrial species diversity varies with variation in physico-chemical parameters of rice field soil as well as different stages of growth. Out of these isolated cyanobacterial species, *Calothrix marchica*, *Nostoc linckia* and *N. punctiforme* were of common occurrence in all stages in all sites. Among heterocystous genera, *Nostoc, Calothrix, Anabaena, Westiellopsis* and among non-heterocyatous genera, *Phormidium, Aphanothece* and *Oscillatoria* were most abundant. Correlation between occurrence of heterocystous cyanobacterial species and the soil parameters were explored by Canonical Correspondence Analysis (CCA). Soil parameters - pH, available P and nitrate played a significant role (as per CCA) in the occurrence of cyanobacterial species.

Keywords**:** Cyanobacteria, Diversity, Rice fields, Canonical correspondence analysis (CCA)