

A Study on Potential Use of Cyanobacteria Isolated from Fresh Water Bodies of Sri Lanka in Agriculture

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Cyanobacteria are important photoautotrophic prokaryotes which are most promising sources for new products and applications. The present study was conducted to investigate the potential use of few selected fresh water cyanobacteria in agriculture. The parameters namely, total nitrogen, phosphorous, potassium, magnesium, calcium, copper, iron, zinc and manganese were assessed using standard methods. Ten cyanobacteria monocultures were collected from biofuel research laboratory of the National Institute of Fundamental Studies (NIFS), Kandy, Sri Lanka. Each cyanobacteria strain was semi mass cultured, harvested, dried and powdered. Dried powdered sample was used for analysis. The data were analyzed by using SAS, significant variation between the means were evaluated by Duncan's multiple range test. Among the tested cyanobacteria, *Limnothrix* sp. (U3) had the highest amount of nitrogen and potassium (10.192 % and 7.687 mg/g respectively). *Limnothrix* sp. (U67) had the highest value of calcium, iron and zinc (27.605, 2.437 and 0.384 mg/g, respectively). *Leptolyngbia* sp. had the highest value of magnesium (5.899 mg/g). *Anabaena* sp. had the highest value of manganese and copper (0.0797 and 0.073 mg/g respectively). *Nostoc* sp. had the highest value of phosphorous (0.998 %). Among them, *Limnothrix* sp. (U3 and U67), *Leptolyngbia* sp., *Anabaena* sp. and *Nostoc* sp. could be recommended for agriculture as nutrient sources based on their high levels of nutrient elements.

Keywords: *Anabaena* sp., cyanobacteria, fresh water bodies, *Leptolyngbia* sp., *Limnothrix* sp., nutrients