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**Cyanobacteria biomass as an alternative source of essential macro and micro nutrients for healthy life**

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Poor nutrition leads to child deaths and disabilities, challenging economic and social development of a country. Providing sufficient amounts of nutrients for an ever-growing population with scarce arable lands is another challenge. Introducing alternative sources to solve these nutritional issues is therefore essential. Cyanobacteria is one of the diversified groups of photosynthetic organisms rich with lot of minerals, expressing rapid growth rate under low space and nutrient requirements. This study was therefore carried out to assess eligibility of cyanobacteria as a promising alternative source of essential macro (Mg, Ca, and K) and micro (Cd, Ni, Zn, Mn, Cr, Pb, Co, Cu, As, Fe and Sr) nutrients. Ten freshwater cyanobacteria strains namely U03-*Limnothrix* sp., U13-*Croococcidiopsis* sp., U15-*Calothrix* sp., U22-*Cephalothrix* sp., U33-*Limnothrix* sp., U36-*Geitlerinema* sp., U40-*Oscillatoriales* sp., U42-*Synechocystis* sp., U55-*Oscillatoriales* sp. and U67-*Limnothrix* sp. were analyzed using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES). Among strains tested, *Limnothrix* sp. had the highest Mg (910.12 ppm), K (474.23 ppm), Fe (104.82 ppm), Cu (894.45 ppb) and Mn (28529.31 ppb) contents. Ni (540.75 ppb) was highest in *Geitlerinema* sp. while Zn (1775.08 ppb) was highest in *Oscillatoriales* sp. Cd, Cr, Pb, As, Co and Sr quantities were below the accepted maximum level recommended by World Health Organization, eliminating all risk levels of their utilization. Higher Calcium contents were not detected by ICP-OES. Calcium was the highest among macro nutrients while iron was in the greatest quantity followed by Mn, Zn, Cu, Ni and Co among all micro nutrients. Considerable amounts of many nutrients in *Limnothrix* sp. nominate itself as the most promising alternative source of essential macro and micro elements. *Oscillatoriales* sp. could be developed as a Zn supplement maintaining healthy immune system. Highest amount of Ca in all strains emphasizes suitability of cyanobacteria as a supplement of Ca. These recommendations for developing cyanobacteria as a commercial product will improve public health and economy of the country.

**Keywords:** *cyanobacteria, essential elements, nutrition crisis*