Ghobrial M G et al., J Microb Biochem Technol 2016, 8:2(Suppl)
http://dx.doi.org/10.4172/1948-5948.C1.016

Bioactivity effect of two macrophytes extracts on growth performance of two bloom-forming cyanophytes

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Aqueous extracts of two freshwater macrophytes; *Potamogeton pectinatus* and *Ceratophyllum demersum* with 50% and 100% each with acetone and ethanol solvents were tested on growth performance of two bloom-forming *cyanophytes*, *Microcystis aeruginosa* and *Oscillatoria tenuis*. The results revealed no significant difference between the overall total average growth performance at treatment with 50% and 100% *Ceratophyllum* acetone extracts expressed by optical density (OD) as well as chlorophyll a (Chl a). They showed both stimulation of *Microcystis aeruginosa* growth. The highest growth increase in 100 µL/100 ml treatment with 50% acetone extract had percentage rate R, 94.66. On the contrary, treatment with ethanol extract recorded the highest inhibitory effect, thus in 1.5 µL/100 ml treatment with 50% *Ceratophyllum* ethanol extract R recorded -87.54, sustaining LC50 value 1.12 µl/100 ml. The highest stimulating effect in 105 µL/100 ml treatment with 50% *Ceratophyllum* acetone extracts against *Oscillatoria* tenuis was; R, 169.4. The highest inhibition in 1500 µL/100 ml treatment with 50% *Ceratophyllum* ethanol extracts against *Oscillatoria* tenuis was ;R-74.32, with LC50 0.830 µl/100 ml. While, the highest inhibition by 50% and 100% Potamogeton acetone or ethanol extracts against *M. aeruginosa* were in 80 and 70 µL/100 ml treatments with R, -99.80 for both. There are significant differences between the overall averages for each solvent, both of 50% and 100% Potamogeton extracts against *Oscillatoria* as estimated by OD or Chl a. The highest inhibitory effect for Potamogeton against *Oscillatoria* were in 103, 800, 200 and 180 µL/100 ml using 50%, 100%, either acetone or ethanol extracts treatments, were R, -66.56, -73.24, -85.95 and -85.95, in return for LC50 932, 590, 129.50 and 101.428 µl/100 ml respectively.

Biography

She is Professor of Aquatic Plants in Hydrobiology Lab, Marine Environment Division. National Institute Of Oceanography & Fisheries (NIOF) – Ministry Of Scientific Research, Arab Republic Of Egypt (ARE) at Alexandria University. Her research activities on the use of aquatic plants and algae for phytoremediation. Allopathic potential of aquatic plants for use as algicidal, and bactericidal agents. Investigations on the emergent macrophysics used for treatment of groundwater aromatic hydrocarbon contaminants in constructed wetlands. Climate changes impact on water environmental resources. Aquatic plants (marine and freshwater) use as antibacterial and antifungal agents against fish pathogens.

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