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ANALYSIS OF SOME CHEMICAL ELEMENTS IN MARINE MICROALGAE FOR BIODIESEL PRODUCTION AND OTHER USES

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Due to the current abundant supply of marine microalgae, which can be found in seawater, as well as microalgae's ability to uptake different chemicals, it appears as a promising raw material with potential for many commercial uses. Despite having a high amount of metal in their biomass, the lipids within marine microalgae can be converted into biodiesel. Analyses of 26 chemical elements (Al, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sn, Sr, Ti, Tl, V, and Zn) were performed by ICP-OES with the goal of quantifying the inorganic content of marine microalgae's biomass. Regardless of the cultivation media used, microalgae presented differences in their chemical element profile. Strains showed a 12.9% to 36.3% mass of analyzed elements per dry biomass, which represent a relatively high percentage for a feedstock used in biofuels. Among the 36 assayed microalgae, *Biddulphia* sp., *Planktolyngbya limnetica*, *Amphora* sp. (1), *Navicula* sp. (3) and *Synechococcus* sp. are most indicated for this purpose as they contain a lower concentration of chemical elements when compared to other samples. However, their profile warns that water quality control is needed for toxic metals such as Ba, Cd, and Pb.

Biography

Bruna Ferreira Silva has begun her research studies with biofuels in graduation. She has published some papers in reputed journals and has completed her Master course at the age of 23 years in Chemistry Institute at Federal University of Goiás. She has experience in analytical chemistry, especially in microalgae, ICP, metals, biodiesel and gas chromatography.

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