Title: Biosustainable impacts of the use of macroalgae used as biofertilizers.

Dário Júnior,agricultural engineer,Ceres **Company,Brazil.**

Biofertilizers obtained from limestone macroalgae of the genus Lithothamnium are basically composed of calcium carbonate, magnesium carbonate and various microelements such as Fe, Mn, B, Ni, Cu, Zn, Mo, Se and Sr. several applications can be highlighted: agriculture, drinking water, cosmetics industry, dietetics, bone surgery implants, animal nutrition and water treatment in lakes (Dias, 2000). In agriculture, Lithothamnium contributes to the improvement physical, chemical and biological soil. It corrects the soil acidity, promotes increased cation retention and increases the efficiency of phosphate fertilizers (Sousa et al., 2007).

Algae extracts, when absorbed by seeds, added to the soil or sprayed on crops, stimulate the seed germination (HONG; HIEN; SON, 2007), the growth and the yield (KHAN et al., 2009) of various crops. Plants treated with seaweed extracts showed increased nutrient uptake (MANCUSO et al., 2006) and deep root development, improving lateral root formation and increased total root system volume (KUMAR; SAHOO, 2011).

The effects of biofertilizer on pest and plant disease control have been well evidenced. Fungistatic, bacteriostatic and insect repellent effects have already been found. Santos and Sampaio (1993) verified a colloidal property of biofertilizer that causes the insect to adhere to the surface of plant tissue. The production of biofertilizers has contributed to the optimization of the utilization of organic residues generated in family-based properties. However, it is necessary that this process be used efficiently, so that the quality of the input obtained can provide the system with adequate inputs of nutrients and biological agents for the balanced development of plants (TIMM et al, 2004).

Marine macroalgae have advantages such as rapid growth and large biomass production. Its use as a biofertilizer enhances the biotechnological use of marine biomass in the generation of alternative products for agriculture.

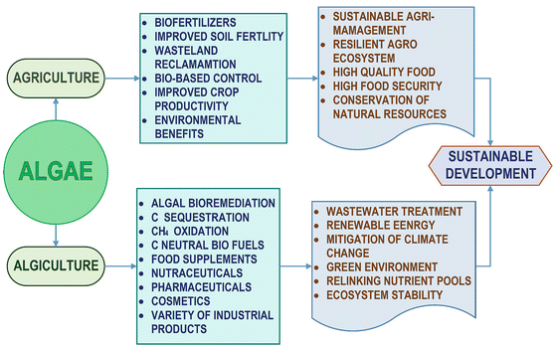



Image Mahapatra DM, Chanakya HN, Ramachandra TV (2015) Book chapter: algae derived singlecell proteins: economic cost analysis and future prospects. In: Protein byproducts: transformation from environmental burden into value-added products, 1st edn. Elsevier, San Diego.

## Recent Publications

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## Dário's Biography

Dário has his expertise in investment management, import, export and international representation services. He has 20 years of experience in international business and also works in social project management. He knows how to make the connections between suppliers with their national and international buyers. He has many connections in Brazil and other investor countries to whom his partners' projects and other products are presented. He conducts business roundtables and international business missions to bring partners closer to investors. For each completed trade, he uses 3% of the profit to be invested in social projects and thus help the communities that will benefit from these projects.

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Email: grupohagnusma@hotmail.com

- Full Name : Dário Oliveira da Silva Júnior
- Mobile Number : 55 98 9 9214 6214
- LinkedIn : https://www.linkedin.com/in/dário-júnior-5703a6127/