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Microalgae Biotechnology for Nutrition.

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MICROALGAE BIOTECHNOLOGY FOR NUTRITION

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Microalgae have been considered as an alternative renewable source for biodiesel, which could substitute the seed crops. The production of biodiesel from algae has several advantages: high productivity of biomass, high lipid content of up to 80%, the ability to grow in salt water, recovery of waste streams under solar light and CO₂ gas utilizing as a nutrients. Microalgae also doesn't compete with food crops in the claims to agricultural land. However, the costs of producing biodiesel from microalgae are higher as compared with other materials due to high-energy intensive processes harvesting, i.e. sedimentation, centrifugation, filtration, flocculation, and naturally drying and subsequent extraction. Due to the high costs associated with the cultivation of algae in specially designed devices and subsequent processing of biomass in our climate it seems more appropriate to focus primarily on microalgae as a source of health beneficial omega-3 fatty acids. Strains *Trachydiscus minutus* and *Japanochytrium sp.* are rich sources of omega-3 eicosapentaenoic acid (EPA C20: 5n3), unsaturated fatty acids arachidonic acid (AA-C20: 4n6), unsaturated fatty acid linoleic acid (LA-C18: 2n6) and saturated fatty acid myristic (MA-C14: 0) and palmitic acid (PA-C16: 0). The biomass from the production of microalgae besides significant lipid portion contains carotenoids, proteins and vitamins. Meanwhile, in food uses microalgae as part of expensive supplements (*Chlorella*, *Spirulina*). The current trend is towards the development and manufacturing of nutraceutical products.

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