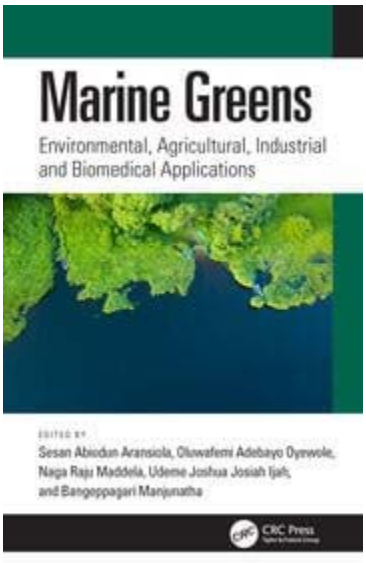
Marine Greens
Environmental, Agricultural, Industrial and Biomedical Applications
Sesan Abiodun Aransiola, Oluwafemi Adebayo Oyewole, Naga Raju Maddela, Udeme Joshua Josiah Ijah, and Bangeppagari Manjunatha
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Chapter

Marine Green Microalgae Biomass Production and Application

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ABSTRACT

Green marine microalgae are an important component of marine ecosystems and have significant ecological, economic, and nutritional importance. Efforts to mitigate the impacts of climate change and provide more environmentally sustainable alternatives have rightfully gained traction in recent times. Hence, green marine microalgae and its extensive uses and applications have been brought to the forefront. These organisms play a crucial role in carbon sequestration, nutrient cycling, and bioremediation. They can also be used to produce biofuels, bioplastics, food supplements, and high-value compounds such as pigments, antioxidants, and pharmaceuticals. Strategies to improve the biomass yield of these functional organisms have been implemented, including genetic engineering, mixotrophic cultivation, nutrient recycling, and biofilm cultivation. Studying microalgae is essential for advancing the understanding of fundamental biological processes, promoting environmental sustainability, developing new biotechnologies, preserving biodiversity, and improving aquaculture. The potential benefits of microalgae research are vast and have important implications for planet and human well-being. This chapter encapsulates the physiology, ecology, cultivation and production, bioprocessing, and applications of microalgae, which can help harness their potential to mitigate climate change, promote sustainable agriculture, and restore degraded ecosystems.

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