



Nutraceutical Fatty Acids from Oleaginous Microalgae: A Human Health Perspective

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About this book

Over the past several years, extensive research has been done on the microbial production of polyunsaturated fatty acids (PUFA). Regardless, research on the oleaginous microalgae used as feedstock for biofuels production and the overall story about the production of nutraceutical fatty acids from oleaginous microalgae has been very limited. This volume provides an exclusive insight on the production of nutraceutical fatty acids from oleaginous [... Show all](#) ▾

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Autotrophic Cultivation of Microalgae for the Production of Polyunsaturated Fatty Acid

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Abstract

PUFAs are one of the essential components for the growth and development of higher hierarchy organisms. Bioactive components belonging to PUFA provide immense health benefits to humans. It is estimated that PUFA production will increase by 13% from 2014 to 2020 and that could lead to an increase in the pressure on fish feed-stocks. Therefore, there is an alarming need of other alternatives such as microalgae. Microalgae serve the purpose behind the production of such a diverse variety of compounds to ensure survival and to adapt to the stringent and varying environmental conditions in their habitat. The fatty acids which some microalgae tend to accumulate serve purposes that allow the microalgae to survive in adverse conditions when cultivated under different cultivation systems, namely autotrophic, heterotrophic and mixotrophic. In autotrophic cultivation the chances of contamination are less, production cost is low and no negative impact on environmental conditions is imposed. Cellular lipid contents were found higher under autotrophic cultivation; however, production is also found low in many algal species.

Keywords: Algae, abiotic stress, PUFAs, lipid, metabolomics

6.1 Introduction

Algae are one of the primary natural resource of polyunsaturated fatty acids (PUFAs) bioactive molecules. They are considered to be the most

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