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Green Extraction of Bioactive Compounds from Amazonian Biodiversity for Sustainable Food Systems: A One Health Perspective

Inhalt

The Amazon rainforest represents one of the world's richest reservoirs of biodiversity, offering unique opportunities for the development of sustainable food ingredients and bioactive compounds. This work synthesizes findings generated by our research group on the valorization of Amazonian fruits, seeds, and agro-industrial by-products through green extraction technologies. Experimental studies conducted with species including tucumã, bacuri, umari, and uxi employed compressed propane, supercritical carbon dioxide, and integrated extraction approaches to recover high-value bioactive compounds.

The developed processes efficiently recovered carotenoids, phenolics, tocopherols, and health-promoting fatty acids with lower environmental impacts. Furthermore, these technologies support bioeconomy and circular economy strategies by promoting the sustainable use of underutilized resources and adding value to regional production chains.

From a One Health perspective, the sustainable recovery of bioactive compounds from Amazonian biodiversity establishes a connection between environmental conservation, human well-being, and socioeconomic development. Green extraction technologies promote the production of functional ingredients, reduce waste generation, and strengthen sustainable food systems. These findings highlight the importance of integrating technological innovation, biodiversity conservation, and sustainable food systems to address global health and environmental challenges.

Keywords

Bioactive compounds, Carotenoids, Green extraction, Sustainability, Amazon, Bioeconomy.

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Yes, I am a Junior Scientist.

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