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NATURAL INGREDIENTS OBTAINED FROM PLANTS AND MUSHROOMS WITH APPLICATION FOR FOOD INDUSTRY

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Lately, there has been a surge in scientific validation highlighting a multitude of applications and benefits stemming from the utilization of natural ingredients and edible matrices worldwide. The utilization of plants and mushrooms to enhance health not only represents a rich cultural legacy but also serves as a traditional source of micro and macronutrients and various medicinal preparations. These matrices comprise natural ingredients of significant added value, serving as both natural colorants and preservatives, while imparting bioactive properties upon integration into other products. Presently, diverse innovative technologies have been employed to optimize extraction systems, thereby enhancing the purity of natural target compounds and extraction yields. Notably, colorants extracted from *Beta vulgaris* L., *Gomphrena globosa* L., *Bixa orellana* L., and *Curcuma longa* L. have found successful application in a variety of food formulations. Conversely, a wide array of biowastes and/or by-products have proven effective reservoirs of bioactive molecules. For instance, extracts from *Agaricus bisporus*, abundant in pro-vitamin D2 (ergosterol), and fruit residues have demonstrated diverse bioactivities. Acorn peels have been utilized as preservatives, while by-products from the fish industry contribute to the formulation of wholesome pet food. Furthermore, the extraction of bioactive compounds from all components of figs and pumpkins, followed by their incorporation into derived products, has yielded satisfactory outcomes, bolstering the circular economy of these constituents. In parallel, bioactive molecules sourced from olive pomace have been reclaimed for further integration into cosmeceutical formulations, concurrently enhancing sustainable extraction processes and their optimization.

These findings underscore the efficacy of natural ingredients sourced from various matrices, advocating for their valorization as reservoirs of naturally derived ingredients suitable for incorporation into widely consumed and appreciated food products on an industrial and commercial scale.

Keywords: Natural ingredients, food preservatives, colorants, bioactives, phenolic compounds

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