Abstract

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Sweet and bitter oranges: An updated comparative review of their bioactives, nutrition, food quality, therapeutic merits and biowaste valorization practices

Abstract

Sweet and bitter oranges are two of the most commercially-important fruit with a total world production of 75.4 Mt, well-recognized for their unique sensory characters in addition to multiple nutritive and therapeutic attributes due to their highly-valued bioactive ingredients. Hence, their differential qualitative/quantitative phytochemical make-ups are presented for better utilization as therapeutic agents. Sweet orange exhibits therapeutic applications as being effective anti-diabetic, anti-obesity, and hypocholesterolemic agents. Whereas, for anti-osteoporotic products and intestinal dysbiosis treatment, bitter orange is more preferred. Moreover, the review recapitulates on different valorization practices of citrus bio-wastes and utilization of their bioactives as therapeutic agents and in functional food industry. Sweet orange waste functions as a fat replacer and preservative to increase food shelf life with better organoleptic attributes than bitter orange. The detailed action mechanism and safety of Citrus bioactives, as well as processing technologies to further improve its effects are posed as future research perspectives.