

Green extraction of bioactive compounds from plant biomass and their application in meat as natural antioxidant

ABSTRACT

Plant extracts are rich in various bioactive compounds exerting antioxidants effects, such as phenolics, catechins, flavonoids, quercetin, anthocyanin, tocopherol, rutin, chlorogenic acid, lycopene, caffeic acid, ferulic acid, p-coumaric acid, vitamin C, protocatechuic acid, vitamin E, carotenoids, β -carotene, myricetin, kaempferol, carnosine, zeaxanthin, sesamol, rosmarinic acid, carnosic acid, and carnosol. The extraction processing protocols such as solvent, time, temperature, and plant powder should be optimized to obtain the optimum yield with the maximum concentration of active ingredients. The application of novel green extraction technologies has improved extraction yields with a high concentration of active compounds, heat-labile compounds at a lower environmental cost, in a short duration, and with efficient utilization of the solvent. The application of various combinations of extraction technologies has proved to exert a synergistic effect or to act as an adjunct. There is a need for proper identification, segregation, and purification of the active ingredients in plant extracts for their efficient utilization in the meat industry, as natural antioxidants. The present review has critically analyzed the conventional and green extraction technologies in extracting bioactive compounds from plant biomass and their utilization in meat as natural antioxidants.

Keyword: Plant extracts; Conventional and green extraction; Bioactive compounds; Antioxidant effect