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Pilot-plant scale extraction of phenolic compounds from mango leaves using different green techniques: Kinetic and scale up study

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Abstract: Mango leaves contain high levels of phenolic compounds, such as mangiferin which have multiple antioxidant and pharmaceutical properties and great potential in nutraceutical, cosmetic and food applications. In the study reported here, mango leaf extracts were obtained using supercritical fluid extraction (SFE), pressurized liquid extraction (PLE) and enhanced solvent extraction (ESE). ESE and PLE gave higher global extraction yields (up to 37%) than SFE using CO₂ + 20% ethanol (around 8%). The addition of high concentrations of ethanol (50–100%) to the CO₂ enhanced the solubility of mango polyphenols and thus increased the global and mangiferin yields at relatively low flow rates (20–30 g/min). The scale-up of high pressure

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