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Development of Nutrient-Rich Detox Beverage by Utilization of Underused Plant By-Products

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Abstract: *The growing popularity of functional and detox drinks is allowing for a greater level of sustainability regarding the use of under-utilized edible plants with nutritional and medicinal values. This study created a detox drink from amla leaves (Phyllanthus emblica), pumpkin seeds (Cucurbita pepo), and ash gourd peels (Benincasa hispida), which are rich in dietary fibre, minerals, antioxidants and bioactive compounds yet are usually discarded as waste. To ensure that the final product has a satisfactory functional profile the proportion of each ingredient was adjusted. In addition to the detox drink, mint (Mentha spicata) and ginger (Zingiber officinale) were added to increase the health benefits and flavour of the detox drinks. This produced four different formulations: basic (amla leaf, pumpkin seed and ash gourd peel), ginger enriched, mint enriched and ginger-mint enriched. The method used to extract the nutrients from the detox drink was to heat-processed it using controlled heating and filtration so that it retained the heat-sensitive components of the plants used. Further analysis of the detox drink for its physicochemical, nutritional, antioxidant, sensory and storage stability resulted in the combination of ginger and mint producing the highest level of sensory acceptance with additional anti-inflammatory, digestive, and antimicrobial properties that will allow for the sustainable development of agro-waste*

Keywords: Functional detox beverage, Amla leaf, Pumpkin seed, Ash gourd peel, Plant byproducts, Sustainability

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