

Effect of various food processing and handling methods on preservation of natural antioxidants in fruits and vegetables

ABSTRACT

This intended paper was done to give an early overview of the expected quality attributes of pineapple-mango juice blend treated with ultraviolet irradiation (UV-C) and thermal pasteurisation. Josapine pineapple (*Ananas comosus* L.) and Chokanan mango (*Mangifera indica* L.) is the popular tropical fruits in Malaysia with unique taste and constant availability. The blend of pineapple-mango juice predicted to have good overall quality attributes as proved by prior studies on orange-pineapple, lemon-melon, pineapple-carrot-orange and carrot-apple-banana juice blends. Conventional thermal pasteurisation widely implemented in juice industry but resulted in massive quality degradation. Thus, research on the non-thermal technology of UV-C widely studied to overcome such drawbacks of thermal pasteurisation. Effect of UV-C and thermal pasteurisation on pineapple-mango juice blend will be evaluated in terms of physicochemical (pH, titratable acidity, total soluble solids, turbidity and colour), antioxidant (ascorbic acid, total phenolics content and total antioxidant DPPH assay) and microbiological properties. UV-C treated pineapple-mango juice blend believed to have better retention of heat sensitive ascorbic acid and other quality compared heat pasteurised juice with minimal distinctive characteristic compared to fresh juice.

Keyword: Natural antioxidants; Conventional processing; Thermal processing; Nonthermal methods; Fruit and vegetable handling