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Production of Plum (Prunus Cerasifera) Concentrate as Edible Color and Evaluation of Color Change Kinetics

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Abstract : Improvement of color, as a quality attribute of Plum Concentrate, has been made possible by the increase in knowledge of kinetic of color change. Three different heating/evaporation processes were employed for the production of pPlum juice concentrate. The Plum juice was concentrated to a final 55 °Bx from an initial °Bx of 15 by microwave heating, rotary vacuum evaporator and evaporating at atmospheric pressure. The final Plum juice concentration of 55 °Bx was achieved in 17, 24 and 57 min by using the microwave, rotary vacuum and atmospheric heating processes, respectively. The colour change during concentration processes was investigated. Total colour differences, Hunter L, a and b parameters were used to estimate the extent of colour loss. All Hunter colour parameters decreased with time. The zero-order, first-order and a combined kinetics model were applied to the changes in colour parameters. Results indicated that variation in TCD followed both first-order and combined kinetics models, and parameters L, a and b followed only combined model. This model implied that the colour formation and pigment destruction occurred during concentration processes of plum juice.

Keywords : colour, kinetics, concentration, plum juice
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