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Effect of Prebiotics on Growth of *Lactobacillus casei* (*L. casei*) in Red Dragon Fruit Juice

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Red dragon fruit (*Hylocereus polyrhizus*) has known to be tropical fruits which offer various health benefits particularly in cardiovascular health. The fruits however have a limited storage period at room temperature of 5 to 7 days and chilling temperature up to 10 days. This study aims to reduce food wastage by converting red dragon fruits into probiotic products and incorporating prebiotic inulin to improve the growth of the probiotic, *Lactobacillus casei*. Addition of different concentrations of inulin [2%, 4% and 6% (w/v)] into the fruit juice was done after juice extraction and clarification through centrifugation followed by pasteurization of the juice. *L. casei* inoculum was inoculated into red dragon fruit juice and incubated under microaerophilic condition at 37 °C up to 3 days. The increment of inulin concentrations from 2%, 4% to 6% (w/v) give significant results on viable cell count and other physiochemical tests. The best was observed at Day 2 sample with 6% (w/v) inulin which obtained the most significant increment ($11.31 \pm 0.01 \log_{10} \text{cfu/mL}$) on cell growth, lower pH value (4.06 ± 0.01), higher total titratable acidity (0.42 ± 0.01), higher decrement of total sugar content ($15.74 \pm 0.02 \text{ g/100 mL}$), increment on total phenolic content ($196.49 \pm 16.08 \text{ GAE mg/100 mL}$) than control (no inulin added) and final radical scavenging activity of $46.84 \pm 0.17\%$ DPPH inhibition after day 2 fermentation.

Biography

Yien Yien Ong is an Associate dean in the Department of Bioscience under Faculty of Applied Sciences, Tunku Abdul Rahman University College (TARUC), Malaysia. She obtained her PhD degree in Fermentation Technology in 2014 from UPM. Her research interest is in probiotic fermentation of plant-based juice, probiotic microencapsulation and food product development in probiotic products.

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