

Abstract

The production of sea lettuce as a health snack food for school children was conducted. Effect of pre-treatments on mass transfer during osmosis was studied. It was found that blanching combined with vacuum impregnation pre-treatment resulted highest both water loss and weight reduction but lowest solids gain. This mass transfer values were significantly difference from blanching or vacuum impregnation pre-treatment alone ($p < 0.05$). The result from iron enrichment on sea lettuce using osmosis technique was found that the addition of ferrous sulfate into the osmotic solution increased iron content of sea lettuce. The addition of 15% ferrous sulfate in the osmotic solution could produce the sea lettuce contained the highest iron content but remained strong iron favor and dark color. The optimum content of ferrous sulfate was 10% which made the sea lettuce contained 6.76 g/100g iron content with slightly iron favor and dark color. The osmosis technique could reduce the drying time. Drying time of fresh and osmosed sea lettuce were 285 and 249 minutes, respectively. Qualities of the dried and fresh sea lettuce products were compared. It was found that dried osmosed sea lettuce contained more content of iron, iodine, total sugar and sodium than dried non-osmosed and fresh sea lettuce ($p < 0.05$) but not significantly difference on calcium content ($p \geq 0.05$). Sensory test with school children was evaluated. It was found that overall liking scores of dried osmosed and non-osmosed sea lettuce were not significant difference ($p \geq 0.05$). The overall liking score ranged 2.73-2.83 from 5 point. Dried sea lettuce flavored with fish and prawn seasoned powder received overall liking scores more than non-flavored dried sea lettuce. The overall liking score ranged 3.70-3.95 from 5 point.