

Effect of orange sweet potato (*Ipomoea batatas*) flour on the physical properties of fried extruded fish crackers

Abstract

The effects of orange sweet potato flour addition to tapioca starch on the expansion, oil absorption, bulk density, water absorption index (WAI), water solubility index (WSI), hardness and colour of fried extruded fish crackers were investigated. The microstructure properties were assessed by Field Emission Scanning Electron Microscope (FESEM) and the sensory properties of fried extruded fish crackers were determined by quantitative descriptive analysis method. The shape and texture of the product were similar to that of normal breakfast cereal. Light brownish and slightly harder texture was obtained with addition of orange sweet potato flour to tapioca starch in the fried extruded fish crackers. The bulk density and water solubility index (WSI) increased with the increase in orange sweet potato flour addition. However, water absorption index (WAI), linear expansion, expansion ratio, volume expansion and oil absorption decreased as the amount of orange sweet potato increased. The microstructure studies revealed that fried extruded fish crackers with high percentage of orange sweet potato flour had small air cells and thick cell wall. The fried extruded fish crackers with 30% fish, 14% orange sweet potato flour and 56% tapioca starch had high crispiness score and accepted by the trained panellists.