

Abstract

There has been an increase in demand over healthy foods in the market, especially for foods catering to consumers with special dietary needs. However, the sensory aspects of these products have not been capable of competing with their original gluten containing items. Therefore developing a gluten-free alternative to conventional products such as pasta is a good opportunity to capitalize on this demand. A gluten free pasta is made by using cauliflower paste as the base ingredient, mixed with different hydrocolloids to emulate the gluten network. Physical properties such as water retention, swelling capacity, springiness, hardness, and cooking loss from the different samples of hydrocolloids were observed using Texture Analyzer TVT 6700 with a knife cutting probe. Discriminative sensory analysis was then done using a triplicate triangle test to determine the differences between the samples in human perception. The results were then analyzed using a one way ANOVA to determine the optimal KGM:KC ratio. The results showed that there was a significant increase of hardness, chewiness, swelling capacity, and both L^* and b^* values alongside an increase in k-carrageenan content. There was a significant difference in springiness, moisture content, and a^* value amongst the samples. Panelists could not detect a significant difference at k-carrageenan concentrations below 50%, while they could reliably detect a difference in the 70% k-carrageenan to 30% konjac glucomannan ratio. Increasing the k-carrageenan content leads to a firmer pasta with a larger swelling capacity and a lighter colour.

Keywords: Arrowroot, Carrageenan, Gluten-free, Konjac, Pasta, Sensory, Texture Analyzer