

## ABSTRACT

Steamed sponge cake undergoes a series of physicochemical changes during storage which leads to a decrease in quality during storage and shortens the shelf life. These physicochemical changes can promote staling of steamed sponge cake as a consequence of moisture migration within the cake system. For this reason, 2% of glycerol was added into steamed sponge cake formulation by means of controlling moisture migration and the effect regarding physicochemical properties was observed and compared with commercial steamed sponge cake as well as laboratory made steamed sponge cake without the addition of glycerol. The recommended concentration of glycerol ranges from 2% to 10% for bakery products. Moreover, The results reported that the application of 2% glycerol resulted in an increase in water retention within the cake system with regards to less significant changes of water activity observed during 9 days of storage. Other than that, the application of 2% glycerol generated an effect in terms of hardness and springiness due to more crumb resistance and more elastic texture observed throughout 9 days of storage. On the contrary, the application of 2% glycerol failed to maintain the moisture content during 9 days of storage which might be caused by uncontrolled air circulation surrounding the product. Despite that, the effective concentration of glycerol to be used in steamed sponge cake still cannot be verified. Thus, further research has to be conducted to determine the effective concentration of glycerol to maintain the quality of steamed sponge cake during storage.

**Keywords:** *Steamed sponge cake, physicochemical properties, staling, moisture migration, humectant, glycerol*