

Abstract

This study investigates substituting okara flour, a protein- and fiber-rich soy milk byproduct, into Modified Cassava Flour (MOCAF)- and rice flour-based gluten-free bread. MOCAF, a fermented gluten-free flour, is increasingly popular as a wheat alternative especially in Indonesia due to its abundance. To improve quality of the gluten-free bread, okara flour was substituted into a MOCAF and rice flour blend at 0%, 10%, 15%, and 20% observing its proximate composition and storage stability. Okara substitution significantly increased protein and dietary fiber, with protein rising 15% and insoluble fiber up to five-fold at 20%. However, this also increased crumb hardness by 22% and chewiness by 48.6% at the highest substitution, likely due to okara's high insoluble fiber and protein disrupting dough structure and gas retention. Moisture retention improved, with the highest water content and water activity at 20% okara. Statistical analysis of the storage stability showed hardness was the only component that is significant over the days. These results highlight the need to optimize okara levels and processing to balance nutrition, texture, and shelf life in gluten-free bread.

Keywords: *gluten-free bread, MOCAF, okara flour, proximate analysis, storage stability, rice flour*