

ABSTRACT

Food consumers' interest in vegetarian diets and plant-based food eating have been increasing in recent years. Many of the available plant-based meat products contain vital wheat gluten (VWG) as one of its major proteins which raises a concern to the increasing number of people with gluten intolerance. This study was done to analyze the effect of different vital wheat gluten concentration (50%, 25%, 12% and 0%) on the physicochemical properties of plant-based patty including: color, pH, cooking loss, water holding capacity (WHC), texture, hardness and springiness, as well as to evaluate the effect of storage times (0, 3, 6 days) on those properties. The results show that the reduction of the VWG concentrations (from 50% to 0%) has a significant effect ($P<0.05$) on the hardness, lightness and cooking loss but has no significant effect on the pH, color and springiness. Lower VWG concentration resulted in darker and softer patties with higher level of cooking loss (%). Further investigation is needed for the method of WHC of plant-based patties as the result did not show an apparent water loss, but rather a loss of oil. Storage conditions of 6 days lead to significant changes ($P<0.05$) in all parameters of plant-based patties including increasing cooking loss and hardness but decreasing pH and WHC. This study suggests that the reduction of VWG from 50% to 0% would be feasible for the development of gluten-free pbm.

Keywords: plant-based patty, vital wheat gluten, physicochemical analysis, texture profile analysis