

ABSTRACT

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THE EFFECT OF DIFFERENT EGG REPLACER AND SUBSTITUTION WITH FIBER-RICH INGREDIENTS ON THE CHARACTERISTICS OF SPONGE CAKE

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Sponge cake is a foam-type of cakes that enjoyable by people of all ages due to the light texture and low-fat content. However, it utilizes both egg and wheat flour that can cause allergy. Wheat flour is low in dietary fiber which frequent intake could lead to development of chronic diseases. Hence, the substitution of fiber-rich ingredients is needed to enhance the dietary fiber content of sponge cake and the utilization of egg replacer in sponge cake must be studied. The objectives of the review are to study the effect of different egg replacer (aquafaba, soy milk and whey protein isolate) on the batter and physicochemical characteristics of sponge cake, also to study the substitution effect of fiber-rich ingredients (coconut pulp flour, cabbage outer leaf powder, mango pulp and peel flour, and spent coffee grounds on characteristics of sponge cake. Based on the literature, aquafaba resulted in low reduction of specific volume and softer texture. Meanwhile, usage of whey protein isolate led to extreme reduction of batter density and harder texture. The substitution of fiber-rich ingredients increases the nutritional value by increasing fiber content of sponge cake. Incorporation of 20% mango peel flour resulted to the highest crude fiber content ($7.44 \pm 0.01\%$). Addition of ingredients with higher dietary fiber content resulted in cake with lower volume, harder texture, and darker color.

Keywords : Dietary fiber, egg replacer, sponge cake, texture, volume

References : 63 (2011 – 2021)