

ABSTRACT

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UTILIZATION OF CHICKEN BONE FLOUR AS SOURCE OF CALCIUM AND EFFECT OF DIFFERENT BAKING CONDITIONS ON PHYSICO-CHEMICAL AND ORGANOLEPTIC PROPERTIES OF GLUTEN FREE SNACK BAR

Thesis, Faculty of Science and Technology (2022)

(xv + 62 pages; 11 figures; 8 tables and 10 appendices)

Indonesian people consume high amounts of chicken yearly which produce a high amount of chicken bones that are underutilized. Chicken bones is rich in calcium, and can be processed to become chicken bone flour to be utilized as a calcium source in food products. Calcium is an important mineral that contributes to maintenance of bone and teeth health in adults. Most Indonesian people have a calcium intake of less than 400 mg/day, which do not meet the daily required intake (DRI) of calcium for adults were 1000 to 1200 mg/day. At the same time, there is a growing market for healthy and convenient snacks such as snack bar, which still has a dependency towards imported materials like wheat and soy flour. Mocaf flour can be used in substitution for wheat flour at 50-100% substitution. There are also concerns about the effect of high baking temperature towards calcium content of snack bar. This research was aimed to utilize chicken bone flour as a source of calcium and the effect different baking conditions in the production of gluten free snack bar with high calcium content and acceptable organoleptic characteristics. The chicken bones flour was done with a completely randomized one-factorial design with 5 variations of drying time (16, 18, 20, 22 and 24 h). The chicken bone flour with drying time of 18 h which had the highest calcium content of $29.74 \pm 3.52\%$ was chosen. The gluten free snack bar was done with a completely randomized two-factorial design with 3 variations of ratio of mocaf flour:chicken bone flour (100:0, 90:10, and 80:20), and 3 variations of baking condition (140°C, 60 min, 150°C, 50 min, 160°C, 40 min). The gluten free snack bar with highest calcium content and acceptable organoleptic properties was ratio of 90:10 and baking condition of 160°C, 40 min, with overall acceptance of 4.04 ± 1.00 , slightly not dark color, slightly soft, slightly not detected bitter aftertaste, calcium content of $1.65 \pm 0.32\%$ and hardness of 838.18 ± 28.79 g force.

Keywords : calcium deficiency, mocaf flour, chicken bone flour, gluten free snack bar, baking conditions

Reference : 67 (2002-2022)