

**STUDY OF PATIN (*Pangasius hypophthalmus*) FISH BONE FLOUR
SUBSTITUTION IN MAKING HIGH CALCIUM *COOKIES*
AS ELDERLY SNACK**

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ABSTRACT

Elderly is the last development stage in human life cycle and it marked by the individual failure to maintain their health balance and physiology stress conditions. Elderly also refers to the digression of individual ability to live and sensitivity marked by the reduction of bone mass and the changes of the microstructure of the bone tissue which causes the digression of bone strength and the increment of bone fragility as well as the risk of bone fracture occurrence. This research aimed at developing high calcium snack product in the form of cookies with the substitution of Patin fish bone and wheat flour for the elderly. The design of the experiment used was Complete Randomized Design or *Rancangan Acak Lengkap* (RAL) with 5 treatments and 5 times repetition. The factor of the treatments was the difference of formulation percentage usage of Patin fish bone flour and wheat flour: A1 (5%:95%), A2 (10%:90%), A3 (15%:85%), A4 (20%:80%), A5 (25%:75%). The results obtained from the research consisted of organoleptic results (hedonic and hedonic quality) that were yellow-brownish color/ like, quite sweet flavor/ like, quite sharp smell/ like, crispy texture/ like. The best treatment was A5 based on the highest result of 1.971%. The nutritional content of high calcium cookies per 20 gram based on the calculation by using AKG 2013 was 86,76 kkal energy, 7,538 gram protein, 31,89 gram fat, 47,336 gram carbohydrate, and calsium level of 1,848 miligram. The serving size of high calcium cookies for female elderly was 1 time snack giving, 1 (\pm 20 gram) so that in a day the patient will consume 5 cookies (100 gram).

Keywords: high calcium cookies, patin fish bone flour, wheat flour