ABSTRACT

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EFFECT OF PARTIAL SUBSTITUTION WITH HEAT-MOISTURE-TREATED SWEET POTATO (*IPOMOEA BATATAS* L.) FLOUR ON PHYSICOCHEMICAL AND ORGANOLEPTIC CHARACTERISTICS OF PAN BREAD

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Bread is a universal staple food. The main ingredient in bread making is wheat flour. However, the import of wheat flour in Indonesia increased over the years. Therefore, partial substitution with a local crop such as sweet potato was done in this research. Due to the low swelling power and solubility of native sweet potato flour, a modification is needed. This research aims to determine effect of Heat-Moisture Treatment (HMT) temperature and time towards swelling power, solubility, and lightness of sweet potato flour, to select best treatment, and to determine effect of substitution ratio towards physicochemical and organoleptic characteristics of pan bread. Sweet potato flour was modified at 61, 69, and 77 ℃ for 3, 6, and 9 h. Substitution ratio in the making of pan bread was 90:10, 85:15, 80:20, 75:25, and 70:30 (wheat flour:modified sweet potato flour). Based on the result, sweet potato flour modified at 77℃ for 6 gave the highest swelling power (13.23±0.27 g/g). Pan breads with a ratio of 90:10 had higher volume compared to the control and 85:15 had similar volume to the control, and both had protein content and higher volume than the control. Therefore, pan breads with a ratio of 90:10 and 85:15 was selected as the best formulated pan bread with moisture, fat, protein, ash, and carbohydrate content of 37.74±0.16%, 8.83±0.08%, 14.83±0.04%, 1.51±0.07%, 37.09±0.04%, and 38.04±0.23%, 10.96±0.64%, 14.33±0.63%, 1.54±0.07%, and 35.13±0.07%, respectively.

Keywords : Heat-Moisture Treatment, sweet potato flour, pan bread

References : 52 (1995-2020)