

**PENGARUH TEPUNG UBI KAYU (*Manihot esculenta*)
DAN TEPUNG TEMPE KEDELAI SEBAGAI
SUBSTITUSI TEPUNG TERIGU TERHADAP MUTU
ROTI TAWAR, PENGEMBANGAN ROTI TAWAR
SERTA MUTU GIZI (KARBOHIDRAT, PROTEIN)**

***THE EFFECT OF CASSAVA FLOUR AND SOYBEAN TEMPE
FLOUR AS WHEAT FLOUR SUBSTITUTION ON THE
QUALITY, EXPANDING ABILITY AND NUTRITIONAL
QUALITY (CARBOHYDRATE AND PROTEIN)
OF WHITE BREAD***



**Tesis
Untuk memenuhi sebagian persyaratan
mencapai derajat S2**

Magister Ilmu Gizi

**Nanik Hamidah
22030113410032**

**FAKULTAS KEDOKTERAN
UNIVERSITAS DIPONEGORO
SEMARANG
September
2015**

ABSTRAK

PENGARUH TEPUNG UBI KAYU (*Manihot esculenta*) DAN TEPUNG TEMPE KEDELAI SEBAGAI SUBSTITUSI TEPUNG TERIGU TERHADAP MUTU ROTI TAWAR, PENGEMBANGAN ROTI TAWAR SERTA MUTU GIZI (KARBOHIDRAT DAN PROTEIN)

Nanik Hamidah, Anang M Legowo, Syaiful Anwar

Latar Belakang: Roti merupakan makanan sumber karbohidrat, terbuat dari tepung terigu, tergolong makanan berindek glikemik rendah. Tepung terigu berasal dari tanaman gandum sedang dibudidayakan di Indonesia. Pengolahan ubi kayu menjadi tepung sebagai substitusi tepung terigu melalui proses modifikasi menggunakan metode fisik (perebusan) untuk mendapatkan pati resisten. Pati resisten tidak dapat dicerna di dalam usus halus, dapat terfermentasi di dalam usus besar, mempunyai keuntungan mencegah kenaikan kadar glukosa darah. Substitusi tepung terigu dengan tepung ubi kayu dikombinasi dengan tepung tempe kedelai untuk menambah nilai gizi protein 1-3% pada tepung ubi kayu. **Metode Penelitian:** Penelitian ini merupakan *experiment* menggunakan Rancangan Acak Lengkap (RAL) 5 perlakuan dan 4 kali ulangan. Proporsi substitusi tepung terigu dengan ubi kayu 0%, 6%, 12%, 18%, 24% dikombinasi dengan tepung tempe kedelai perbandingan 3:1. Variabel yang diukur adalah mutu roti, pengembangan roti dan mutu gizi. Analisa data menggunakan *Kruskal wallis* untuk mutu roti, *One Way Anova* untuk pengembangan roti dan mutu gizi **Hasil Penelitian:** Karakteristik roti tawar terbaik adalah perlakuan 6%. Mutu organoleptik tekstur mendekati lembut, jaringan elastis, aroma polos atau tidak berbau asam, warna (*crumb*) mendekati putih cerah, warna (*crust*) mendekati coklat kemerahan, rasa sedikit manis dan asin roti tawar. Volume pengembangan 3,15 ml/g adalah volume roti berasal dari tepung komposit. Mutu gizi karbohidrat lebih rendah dari perlakuan 0% sebesar 46,36%. Mutu gizi protein meningkat sebesar 13,83% **Kesimpulan:** Substitusi tepung terigu dengan tepung ubi kayu yang dimodifikasi menggunakan metode fisik (perebusan) dan tepung tempe kedelai mempengaruhi mutu organoleptik roti (tekstur, warna (*crumb, crust*), rasa), pengembangan roti, mutu gizi (karbohidrat dan protein).

Kata Kunci: Tepung Ubi Kayu, Tepung Tempe Kedelai, Mutu Roti, Volume Roti, Mutu Gizi

ABSTRACT

THE EFFECT OF CASSAVA FLOUR AND SOYBEAN TEMPE FLOUR AS WHEAT FLOUR SUBSTITUTION ON THE QUALITY, EXPANDING ABILITY AND NUTRITIONAL QUALITY (CARBOHYDRATE AND PROTEIN) OF WHITE BREAD

Nanik Hamidah, Anang M Legowo, Syaiful Anwar

Background: Bread was a carbohydrate source's food, was made from wheat flour and classified into low glycemic index food. The wheat flour came from wheat plant, which one has been cultivating in Indonesia. Technology processing cassava to become flour as substitution for wheat flour by modification process used physic method (boiling) to obtain resistant starch. Resistant starch couldn't be digested in intestine, can be fermented in gut, prevented level of glucose increased. Wheat flour substituted with combined by tempeh flour to add protein value from cassava flour 1-3%. **Methods:** The research methods used experiment with completely randomized design which consists of 5 treatment with 4 replications, proportion for tempeh and cassava flour 0%, 6%, 12%, 18%, 24% combined by tempeh flour proportion 3:1. Dependent variabel were quality of white bread organoleptic, size of volume white bread, quality of protein and carbohydrate nutrient. Data Analysis used Kruskal wallis for quality of white bread, Anova for size of volume white bread and quality of protein and carbohydrate nutrient. **Result:** The result of those research were found that the best characteristic from white bread was treatment 6%. Quality of organoleptic were nearly elastic and creamy texture, plain flavor without sour, colour of crumb nearly bright white, colour of crust nearly reddish yellow, taste was slightly sweet and salty for white bread. Size of volume 3,15ml/g was size volume bread from composite flour ingredient. Quality of nutrient for carbohydrate was lower from treatment 0% as big as 46,36%. Quality of nutrient for protein was higher from treatment 0% as bis as 13,83% **Conclusion:** Substitution of wheat flour by cassava flour was modified by physical methods (boiling) and soybean tempeh flour influenced quality of white bread organoleptic (texture, colour (crumb, crust), taste), size of volume white bread, quality of nutrient (protein and carbohydrate).

Keywords: Cassava Flour, Tempeh Flour, Quality of Bread, Volume Bread, Quality of nutrient (Protein and carbohydrate).