

## **ABSTRACT**

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### **PARTIAL SUBSTITUTION OF PURPLE SWEET POTATO FLOUR FOR REPLACING SEMOLINA FLOUR AND WHEAT FLOUR IN FETTUCCINE PRODUCTION**

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(xviii + 126 Pages, 6 Tables, 19 Figures, 26 Appendices)

Fettuccine is a long pasta made from semolina flour, wheat flour, and egg. Semolina flour and wheat flour import has been increased every year and they are known as a high gluten and low resistant starch product. Purple sweet potato flour could be an alternative for decreasing consumption of gluten and import of semolina and wheat flour. The aim of this research was to determine the effect of cooling for purple sweet potato flour resistant starch and the effect of wheat and semolina flour ratio towards fettuccine characteristics. In this research, resistant starch content, proximate analyses and some properties of purple sweet potato flour and fettuccine were characterized. The result of this research showed that 24 hours cooling on purple sweet potato give the highest resistant starch content. The best purple sweet potato flour consist of 4.45% resistant starch content, 30.17% yield, 3.21% moisture content, 1.27% protein, 0.93% fat, 1.87% ash, 17 and 21° as the highest peak for x-ray diffraction and type C crystals. Fettuccine made from 20.01% of purple sweet potato flour and 3:1 ratio of wheat flour with semolina flour was the best formulation based on sensory result. This formulation has 4757.62 gram hardness, 35.85 lightness, and contains 1.89% resistant starch content, 5.91% moisture content, 3.36% ash, 15.91% protein, 4.74% fat, and 70.24% carbohydrates with 23° as the highest peak for x-ray diffraction and type C crystals.

Keyword: purple sweet potato, hard wheat flour, semolina flour, fettuccine, resistant starch

Reference: 85 (1991-2017)

## ABSTRAK

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### KAJIAN SUBSTITUSI PARSIAL TEPUNG UBI JALAR UNGU SEBAGAI PENGGANTI TEPUNG SEMOLINA DAN TEPUNG TERIGU DALAM PEMBUATAN FETTUCCINE

Tugas Akhir, Fakultas Sains dan Teknologi (2018).

(xviii + 126 Halaman, 6 Tabel, 19 Gambar, 26 Lampiran)

*Fettuccine* adalah produk pasta yang memiliki bentuk panjang dan pipih yang terbuat dari tepung terigu, tepung semolina, dan telur. Tepung terigu dan tepung semolina merupakan produk yang terus meningkat aktivitas impor setiap tahunnya. Tepung terigu dan tepung semolina juga dikenal memiliki tingkat gluten yang tinggi dan kadar pati resisten yang rendah. Tepung ubi jalar ungu menjadi alternatif dalam menurunkan konsumsi gluten dan menurunkan nilai impor tepung terigu dan tepung semolina. Tujuan dari penelitian ini mengetahui pengaruh pendinginan untuk kadar pati resisten tepung ubi jalar ungu dan pengaruh konsentrasi tepung ubi jalar ungu dan rasio tepung terigu dengan semolina terhadap karakteristik *fettuccine*. Hasil penelitian menunjukkan tepung ubi jalar ungu yang didinginkan 24 jam menghasilkan kadar pati resisten tertinggi. Tepung ubi jalar ungu terbaik memiliki kadar pati resisten 4,45%, rendemen sebesar 30,17%, kadar air 3,21%, protein 1,27%, lemak 0,93%, abu 1,87%, sudut tertinggi pola difraksi 17 dan 21°, dengan tipe kristal pati C. Formulasi *fettuccine* dengan penggunaan 30% tepung ubi jalar ungu dan rasio rasio tepung terigu dengan tepung semolina 3:1 menjadi formulasi terbaik *fettuccine* ubi jalar ungu. Formulasi *fettuccine* terbaik memiliki nilai *hardness* 4757,62 gram, *lightness* 35,85, kadar air 5,91%, kadar abu 3,36%, protein 15,91%, lemak 4,74%, dan karbohidrat 70,24% dengan sudut pola difraksi tertinggi 23° dan tipe kristal pati C.

Kata kunci : ubi jalar ungu, tepung terigu, tepung semolina, *fettuccine*, pati resisten

Referensi: 85 (1991-2017)