

ABSTRAK

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APLIKASI *AUTOCLAVING-COOLING* PADA PEMBUATAN MI KERING SUBSTITUSI KACANG MERAH DAN UMBI TALAS

Tugas Akhir, Fakultas Sains dan Teknologi (2018)

(xix + 91 halaman: 11 tabel, 44 gambar, dan 41 lampiran)

Kacang merah merupakan salah satu bahan pangan lokal yang mengandung kadar protein dan kadar pati resisten yang tinggi. Pati resisten adalah salah satu bagian pati yang tidak dapat dicerna oleh enzim di usus halus, difermentasi oleh mikroba di usus besar, dan berperan seperti serat. Tujuan dari penelitian adalah untuk menentukan pengaruh modifikasi *autoclaving*, *cooling*, dan *autoclaving-cooling* yang dapat meningkatkan kadar pati resisten tepung kacang merah dan tepung umbi talas dan untuk menentukan pengaruh konsentrasi tepung terigu dan rasio substitusi tepung kacang merah dan tepung umbi talas terhadap karakteristik mi kering. Perlakuan pada tepung kacang merah dan tepung umbi talas berupa *autoclaving*, *cooling*, dan *autoclaving-cooling*. Perlakuan pada formulasi mi kering adalah konsentrasi tepung terigu (20, 40, 60, 80%) dan rasio substitusi tepung kacang merah dan tepung umbi talas (1:3, 2:2, 3:1). Berdasarkan hasil penelitian, modifikasi pengolahan *autoclaving-cooling* dapat meningkatkan kadar pati resisten pada tepung kacang merah dan tepung umbi talas dari 4.05 ± 0.95 dan $2.60 \pm 0.01\%$ menjadi 6.23 ± 0.11 dan $3.19 \pm 0.02\%$. Mi kering terpilih dibuat dari 60% tepung terigu dan rasio substitusi 3:1 tepung kacang merah dengan tepung umbi talas hasil modifikasi pengolahan *autoclaving-cooling* berdasarkan kadar pati resisten dan uji organoleptik. Mi kering terpilih mengandung kadar pati resisten $4.56 \pm 0.56\%$, kadar protein $16.92 \pm 0.07\%$, kecerahan 42.91 ± 0.93 , *hardness* 3012.49 ± 69.43 g, skor hedonik 5.11 ± 0.99 , sudut difraksi (2θ) 19.67 , 22.53 , dan 24.03° dengan tipe kristalinitas B.

Kata kunci: mi kering, *autoclaving-cooling*, pati resisten, tepung kacang merah, tepung umbi talas

Referensi: 76 (1970-2018)

ABSTRACT

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AUTOCLAVING-COOLING APPLICATIONS ON DRIED NOODLE SUBSTITUTED WITH RED KIDNEY BEAN AND TARO

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(xix + 91 pages: 11 tables, 44 figures, and 41 appendices)

Red kidney bean is one of local food ingredients that contain high protein and resistant starch. Resistant starch is group of starch that can not be digest by enzyme in small intestine, fermented by microbes in colon, and act like fiber. The aims of this research were to determine the effect of autoclaving, cooling, and autoclaving-cooling to resistant starch content of red kidney bean flour and taro flour and to determine the effect of concentration wheat flour and substitution ratios of red kidney bean flour and taro flour on dry noodle characteristics. The treatment for red kidney bean and taro flours were autoclaving, cooling, and autoclaving-cooling. The treatment for dry noodle formulations were concentrations of wheat flour (20, 40, 60, 80%) and substitution ratios of red kidney bean flours and taro flours (1:3, 2:2, 3:1). Based on the result, autoclaving-cooling treatment on red kidney bean flour and taro flour could increase resistant starch content from 4.05 ± 0.95 and $2.60\pm0.01\%$ to 6.23 ± 0.11 and $3.19\pm0.02\%$ respectively. Dry noodle made from 60% wheat flour and substitution ratios of autoclaved-cooled red kidney bean flour and taro flour 3:1 was the best formula based on resistant starch content and organoleptic test. Dry noodle had resistant starch content $4.56\pm0.56\%$, protein content $16.92\pm0.07\%$, lightness 42.91 ± 0.93 , hardness $3012.49\pm69.43\text{g}$, hedonic score 5.11 ± 0.99 , angle of diffraction (2θ) 19.67, 22.53, and 24.03° with crystalline type B.

Keyword: dry noodle, autoclaving-cooling, resistant starch, red kidney bean flour, taro flour

References: 76 (1970-2018)