

ABSTRAK

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SUBSTITUSI PATI GANYONG HASIL *HEAT MOISTURE TREATMENT* PADA ROTI GAMBANG DENGAN SUMBER PROTEIN BERBEDA

Skripsi, Fakultas Sains dan Teknologi (2021)

(xiiv + 51 halaman; 17 gambar; 8 tabel; 14 lampiran)

Umbi ganyong memiliki nilai ekonomis yang rendah, sehingga upaya untuk meningkatkan nilai tambah dari umbi ganyong adalah mengolahnya menjadi tepung atau pati. Kandungan amilosa dapat menyebabkan tekstur roti yang lebih lembut dan berperan dalam meningkatkan kadar pati resisten tipe 3. Pati resisten dapat ditingkatkan melalui metode HMT. Tujuan dari penelitian adalah menentukan pengaruh waktu dan suhu HMT terhadap kadar amilosa pati ganyong dan menentukan pengaruh rasio substitusi tepung terigu dengan pati ganyong hasil HMT terbaik dan jenis protein yang digunakan terhadap karakteristik roti gambang. Tahap pertama penelitian berupa proses HMT (suhu 100°C, 110°C, dan 120°C) dengan waktu (30, 60, dan 90 menit) terhadap pati ganyong, sedangkan pada tahap kedua roti gambang diberi rasio substitusi tepung terigu dengan pati ganyong hasil HMT terbaik (120°C, 90 menit) 100:0, 90:10, 80:20, 70:30, 60:40, 50:50. Metode HMT dapat meningkatkan kadar amilosa, tetapi menurunkan rendemen, kadar air, *lightness* dan daya serap air. HMT 120°C dengan waktu 90 menit menghasilkan pati ganyong dengan kadar amilosa tertinggi (27,76%) dan kadar pati resisten (0,73%). Substitusi tepung terigu dengan pati ganyong hasil HMT dan penggunaan jenis protein berbeda, menurunkan volume pengembangan, *lightness*, dan *hardness* pada roti gambang, tetapi menaikkan kadar air (pada perlakuan substitusi 90:10 dengan jenis protein telur). Rasio substitusi tepung terigu dengan pati ganyong 90:10 hasil HMT dengan jenis protein telur menghasilkan roti gambang terbaik, dengan nilai *hardness* yang mendekati kontrol.

Kata kunci : *heat moisture treatment*, roti gambang, substitusi, pati ganyong

Referensi : 53 (1995-2020)

ABSTRACT

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SUBSTITUTION OF CANNA STARCH USING *HEAT MOISTURE TREATMENT* ON GAMBANG BREAD WITH DIFFERENT SOURCE OF PROTEIN

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Canna edulis has low economic values, so that effort to increase the added value of this *canna edulis* is converting it into flour or starch. Amylose content can cause softer bread texture and have a role in increasing levels of resistant starch type III. Resistant starch can be increased through the heat moisture treatment method. The purpose of this research is to determine the relation of time and temperature during HMT towards amylose content of canna starch and assessing the substitution ratio of flour to canna starch from the HMT and evaluate different types of protein, which can influence physical characteristics of gambang bread. The first stage of this research is HMT towards canna starch at various temperature (100°C, 110°C, and 120°C) and time (30, 60, dan 90 minutes), whereas in the second stage of this research is developing gambang bread using the best result from HMT (120°C, 90 minutes) with different ratio of flour and canna starch 100:0, 90:10, 80:20, 70:30, 60:40, 50:50. HMT method can increase amylose content, but decrease rendemen, water content, lightness, and water absorption. HMT 120°C 90 minutes yields the highest amylose content (27,76%) in canna starch and resistant starch (0,73%). The substitution of flour and canna starch from HMT results and diverse types of protein decreasing volume of development, lightness, and hardness in gambang bread, however increasing water content (on the substitution of 90:10 in egg protein). The best gambang bread can be obtained by using the best HMT results with 90:10 substitution ratio of flour and canna starch and using egg protein with the closest hardness value to the control.

Keywords : heat moisture treatment, gambang bread, substitution, canna starch

References : 53 (1995-2020)