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EFFECT OF COOKING METHODS ON PHYSICOCHEMICAL QUALITY, FATTY ACID PROFILE AND MICROSTRUCTURE OF CHICKEN MEAT

ABSTRACT

Khoriq Agung Santoso

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The research was aimed to investigate the effect of cooking methods on chemical and physical quality, fatty acid profile and microstructure of chicken meat. The materials used were *Pectoralis superfisialis* muscle of male chicken aged 32 days. The experiment were divided into five treatments (raw, steaming, boiling, frying and microwave). Variabels observed were chemical properties (moisture, fat, protein and collagen contents), physical properties (coocking loss, pH and Warner Brarzler shear force values), fatty acid profile and microstructure. The data were tested by analysis of variance of completely randomized design, the significantly different will be tested by Duncan's Multiple Range Test. Different cooking methods exhibited highly significant effect (P<0,01) on the chemical and physical quality. The moisture content of steamed, boiled, fried and microwave were 71.68, 64.40, 64.58, 57.14 and 57.46%, respectively. Protein content were 22.49, 29.76, 29.06, 32.21 and 33.91%. Fat content were 3.82, 2.22, 2.33, 6.50 and 3.66%. Collagen content were 1.53, 1.54, 1.78, 2.10 and 1.65%. pH 4.89, 5.28, 5.45, 5.44 and 5.29. Cooking loss were 30.98, 31.07, 44.82 and 42.46%. Tenderness were 1.64, 9.04, 7.55, 9.81 and 9.86 kg/cm^2. The cooking methods by frying increased the saturated fatty acids of chicken meat, especially palmitic acid. The cooking methods affected the structure of chicken meat, and the boiled meat has a pore spot muscle fiber while fried meat has a compact muscle fiber. It can be concluded that the best cooking process was steaming.

Key word: Chicken meat, Cooking method, Physicochemical quality, Fatty acid profile, Microstructure.

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INTISARI

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Penelitian ini bertujuan untuk mengetahui pengaruh metode pemasakan terhadap kualitas kimia, fisik, profil asam lemak dan mikrostruktur daging ayam. Materi yang digunakan adalah daging ayam bagian dada. Perlakuan dari penelitian ini terdiri dari daging ayam segar, kukus, rebus, goreng dan *microwave* dengan tingkat kematangan *well done*. Variabel yang diamati meliputi kualitas kimia (kadar air, protein, lemak dan kolagen), kualitas fisik (pH, susut masak dan keempukan), profil asam lemak dan mikrostruktur. Data dianalisis menggunakan rancangan acak lengkap pola searah dan dilanjutkan dengan uji *Duncan's New Multiple Ranges Test.* Metode pemasakan yang berbeda berpengaruh sangat nyata ($P<0,01$) pada kualitas kimia dan fisik daging. Kadar air daging segar, kukus, rebus, goreng dan *microwave* masing-masing adalah 71,68, 64,40, 64,58, 57,14 dan 57,46%. Kadar protein masing-masing adalah 22,49, 29,76, 29,06, 32,21 dan 33,91%. Kadar lemak masing-masing 3,82, 2,22, 2,33, 6,50 dan 3,66%. Kadar kolagen masing-masing adalah 1,53, 1,54, 1,78, 2,10 dan 1,65%. pH masing-masing adalah 4,89, 5,28, 5,45, 5,44 dan 5,29. Susut masak masing-masing adalah 30,98, 31,07, 44,82 dan 42,46%. Keempukan daging masing-masing adalah 1,64, 9,04, 7,55, 9,81 dan 9,86 kg/cm^2 (kukus, rebus, goreng dan *microwave*). Proses pemasakan dengan cara penggorengan meningkatkan asam lemak jenuh daging ayam terutama asam palmitat. Proses pemasakan merubah struktur daging ayam, daging ayam rebus memiliki serabut otot yang sangat longgar sedangkan daging ayam kukus memiliki serabut otot yang kompak. Dapat disimpulkan bahwa proses pemasakan yang paling baik adalah dengan cara kukus.

Kata kunci: Daging ayam, Metode pemasakan, Kualitas kimia, Kualitas fisik, Profil asam lemak, Mikrostruktur.