

PENGEMBANGAN KEJU SEBAGAI PANGAN FUNGSIONAL DENGAN PENAMBAHAN TEH HITAM *ORTHODOX*

ABSTRAK

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Penelitian berjudul “Pengembangan Keju sebagai Pangan Fungsional dengan Penambahan Teh Hitam *Orthodox*” telah dilaksanakan di Laboratorium Teknologi Hasil Ternak dan Ilmu Bahan Makanan Ternak, Fakultas Peternakan, Universitas Jenderal Soedirman, Purwokerto pada tanggal 25 Juli – 13 Agustus 2022. Tujuan dari penelitian ini adalah mengkaji karakteristik fisikokimia, sensoris dan fungsional keju susu sapi yang diperkaya dengan teh hitam *orthodox*. Materi yang digunakan dalam penelitian meliputi 40 liter susu sapi segar yang diperoleh dari *Experimental Farm*, Fakultas Peternakan, Universitas Jenderal Soedirman, teh hitam komersial, bakteri mesofilik, enzim rennet, dan CaCl_2 . Peralatan yang digunakan yaitu seperangkat alat membuat keju, oven, desikator, statif dan buret, kolorimeter, *food texture analyzer*, *centrifuge*, spektrofotometer, dan seperangkat alat uji sensoris. Parameter yang diamati meliputi karakteristik fisik, yaitu warna (L^* , a^* , b^* , *hue*, *chroma*, *whiteness index*) dan profil tekstur (*hardness* dan *stickiness*), karakteristik kimia yang meliputi kadar air, total padatan, pH, dan total asam tertitrasi, serta aktivitas antioksidan, dan karakteristik sensoris. Perlakuan terdiri atas kontrol (P_0), penambahan teh hitam *orthodox* masing-masing 0,5% (P_1), 1% (P_2), 1,5% (P_3), dan 2% (P_4) dengan 4 kali ulangan. Data dianalisis menggunakan analisis variansi dan dilanjutkan dengan Uji Lanjut Ortogonal Polinomial dan Beda Nyata Jujur (BNJ). Hasil penelitian menunjukkan bahwa penambahan teh hitam *orthodox* berpengaruh sangat nyata ($P < 0,01$) terhadap pH, total asam tertitrasi, warna (L^* , a^* , b^* , *hue*, dan *whiteness index*), dan aktivitas antioksidan keju. *Hardness* keju dipengaruhi secara nyata ($P < 0,05$) dengan penambahan teh hitam *orthodox*, namun tidak berpengaruh nyata ($P > 0,05$) terhadap kadar air, total padatan, *chroma*, dan *stickiness* keju. Penambahan teh hitam *orthodox* hingga 2% pada pembuatan keju cenderung meningkatkan nilai a^* , *hue*, *chroma*, total asam tertitrasi, dan aktivitas antioksidan keju. Aktivitas antioksidan keju meningkat hingga 33,49 (% inhibisi) dengan adanya penambahan teh hitam *orthodox* hingga 2%. Namun, penambahan teh hitam *orthodox* cenderung menurunkan nilai L^* dan b^* , *whiteness index*, *hardness*, nilai pH, dan kesukaan panelis terhadap keju. Tingkat kesukaan panelis terhadap keju susu sapi dengan penambahan teh hitam *orthodox* yang paling disukai adalah dengan penambahan sebanyak 0,5%.

Kata kunci: keju, pangan fungsional, teh hitam orthodox, fisikokimia, uji sensoris

DEVELOPMENT OF CHEESE AS A FUNCTIONAL FOOD WITH THE ADDITION OF ORTHODOX BLACK TEA

ABSTRACT

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The research entitled "Development of Cheese as a Functional Food with the Addition of Orthodox Black Tea" has been done in Laboratory of Animal Products Technology and Animal Feed Ingredients Science, Faculty of Animal Science, Jenderal Sudirman University, Purwokerto from July 25 until August 13, 2022. The purpose of this research was to examine the physicochemical, sensory and functional characteristics of cow's milk cheese enriched with orthodox black tea. The materials used in the study included 40 liters of fresh cow's milk obtained from Experimental Farm, Faculty of Animal Science, Jenderal Sudirman University, commercial black tea, mesophilic bacteria, rennet enzymes, and CaCl_2 . The equipment used is a set of tools for making cheese, oven, desiccator, stative and burette, colorimeter, food texture analyzer, centrifuge, spectrophotometer, and a set of sensory test equipment. Parameters observed included physical characteristics, including color (L^* , a^* , b^* , hue, chroma, whiteness index) and texture profile (hardness and stickiness), chemical characteristics including moisture content, total solids, pH, and total titratable acidity, as well as antioxidant activity, and sensory characteristics. The treatments of this research consisted of control (P0), addition of orthodox black tea was 0.5% (P1), 1% (P2), 1.5% (P3), and 2% (P4) with 4 replications. The results of this research were analyzed using analysis of variance and the proceeded using Orthogonal Polynomials and Honest Significant Differences (HSD). The results showed that the addition of orthodox black tea had a very significant effect ($P < 0.01$) on pH value, total titratable acidity, color (L^* , a^* , b^* , hue, and whiteness index), and antioxidant activity of cheese. Hardness of cheese was significantly affected ($P < 0.05$) with the addition of orthodox black tea, but had no significant effect ($P > 0.05$) on moisture content, total solids, chroma, and stickiness of cheese. The addition of orthodox black tea up to 2% in cheese making tends to increase the a^* value, hue, chroma, total titratable acidity, and antioxidant activity of cheese. The antioxidant activity of cheese increased up to 33.49 (% inhibition) with the addition of orthodox black tea up to 2%. But, the addition of orthodox black tea tends to decrease the L^* and b^* values, whiteness index, hardness, pH value, and panelists' preference of cheese. The panelists' level of preference for cow's milk cheese with the addition of orthodox was the most preferred with 0.5%.

Keywords: cheese, functional food, orthodox black tea, physicochemical, sensory test