

ABSTRAK

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OPTIMASI SUHU DAN WAKTU SANGRAI BIJI DURIAN (*Durio zibethinus* L.) SEBAGAI SUBSTITUSI BUBUK KOPI DAN PROFIL FLAVORNYA

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(xvii + 75 halaman; 17 gambar; 24 tabel; 22 lampiran)

Biji durian diketahui dapat menghasilkan profil flavor yang menyerupai biji kopi apabila dilalui dengan proses penyangraian. Oleh karena itu, pada penelitian ini akan dilakukan optimasi kondisi penyangraian pada suhu (200-240°C) dan waktu (30-60 menit) tertentu. Biji durian yang sudah disangrai akan dianalisa kemiripannya dengan biji kopi Robusta dan Arabica, serta dilakukan deskripsi profil flavor pada perlakuan terbaik. Optimasi akan dilakukan dengan menggunakan metode *Response Surface Methodology* (RSM) pada program *Design Expert* 11.1.0.1[®]. Berdasarkan hasil optimasi, suhu dan waktu penyangraian yang optimum pada biji durian untuk menghasilkan produk yang menyerupai kopi Robusta adalah 240°C selama 47 menit 38 detik dan 229,48°C selama 52 menit 16 detik untuk menyerupai kopi Arabica dengan tingkat kemiripan sebesar 69%. Profil flavor dari bubuk kopi biji durian hasil optimasi ditentukan dengan *Quantitative Descriptive Analysis* (QDA) dengan 6 atribut, antara lain *sweet*, *bitter*, *sour*, *fruity* (aroma), *fruity* (flavor), *roasted* (flavor). Produk substitusi kopi Robusta memiliki kadar kafein yang rendah (0,26%±0,00), nilai *lightness* (34,05±0,43), nilai °Hue (38,01±0,10), nilai pH (6,40±0,02), kadar air (2,18%±0,05), kadar abu (3,84%±0,10), kadar lemak (1,41%±0,07), kadar protein (9,71%±0,06), dan kadar karbohidrat (85,04%±0,30). Produk substitusi kopi Arabica memiliki kadar kafein yang rendah (0,24%±0,00), nilai *lightness* (35,23±0,17), nilai °Hue (39,88±0,60), nilai pH (5,67±0,01), kadar air (2,22%±0,05), kadar abu (3,75%±0,07), kadar lemak (1,34%±0,09), kadar protein (9,63%±0,00), dan kadar karbohidrat (85,28%±0,23).

Kata Kunci : biji durian, optimasi, profil flavor, *Quantitative Descriptive Analysis* (QDA), *Response Surface Methodology* (RSM), substitusi kopi

Referensi : 70 (1995-2020)

ABSTRACT

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OPTIMIZATION OF ROASTING TEMPERATURE AND TIME OF THE DURIAN SEED (*Durio zibethinus* L.) AS COFFEE SUBSTITUTION AND ITS FLAVOR PROFILE

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(xvii + 75 pages; 17 figures; 24 tables; 22 appendices)

Durian seeds are known for their ability to produce the same flavor and aroma as the regular coffee beans have if it goes through roasting process. Hence, in this research, optimization of roasting treatment will be carried out at a certain temperature (200-240°C) and roasting time (30-60 minutes) to obtain a comparable aroma and taste with the Robusta and Arabica coffee. The optimization was done by using Response Surface Methodology (RSM) method from the program Design Expert 11.1.0.1[®]. The optimization results showed that the optimum temperature and roasting time for durian seeds are 240°C and 47 minutes 38 seconds for it to be comparable with the Robusta coffee and 229,48°C for 52 minutes 16 seconds for it to compare with the Arabica coffee, both having a similarity level of 69%. The flavor profile from the optimized product was determined using the Quantitative Descriptive Analysis (QDA) consisting of 6 attributes (sweet, bitter, sour, fruity (aroma), fruity (flavor), and roasted (flavor)). The Robusta coffee substitute has a low caffeine content (0,26%±0,00), a lightness value of 34,05±0,43, a °Hue value of 38,01±0,10, a pH of 6,40±0,02, a moisture content of 2,18%±0,05, an ash content of 3,84%±0,10, a fat content of 1,41%±0,07, a protein content of 9,71%±0,06, and a carbohydrate content of 85,04%±0,30, while the substitute for the Arabica coffee also has a low caffeine content of 0,24%±0,00, a lightness value of 35,23±0,17, a °Hue value of 39,88±0,60, a pH of 5,67±0,01, a moisture content of 2,22%±0,05, an ash content of 3,75%±0,07, a fat content of 1,34%±0,09, a protein content of 9,63%±0,00, and a carbohydrate content of 85,28%±0,23.

Keywords : coffee substitute, durian seed, flavor profile, optimization, Quantitative Descriptive Analysis (QDA), Response Surface Methodology (RSM)

Reference : 70 (1995-2020)