

PENGARUH LAMA PEMBAKARAN TERHADAP KUALITAS FISIK DAN MIKROSTRUKTUR SATE DAGING KUDA

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh lama pembakaran terhadap kualitas fisik dan mikrostruktur sate daging kuda. Persiapan awal, daging direndam dalam bumbu dan ditusuk dengan bambu kemudian dibakar sesuai dengan perlakuan. Perlakuan lama pembakaran adalah 3, 5, dan 7 menit dengan masing-masing dibakar menggunakan arang. Bahan yang digunakan yaitu daging kuda bagian punggung. Parameter yang diamati adalah kualitas fisik (daya ikat air, keempukan, nilai pH, dan warna) serta mikrostruktur. Data kualitas fisik dianalisis statistik menggunakan analisis variansi rancangan acak lengkap pola searah (ANOVA) apabila terdapat perbedaan dilakukan uji lanjut dengan Duncan's New Multiple Range Test. Kualitas mikrostruktur dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa lama pembakaran berpengaruh nyata ($P < 0,05$) terhadap nilai daya ikat air (31,19%; 27,24%; 26,49%), *hardness* (5,28 N; 6,53 N; 9,89N), *gumminess* (304,84; 412,71; 571,24), *chewiness* (192,53; 298,78; 382,53), *springiness* (63,19%; 71,45%; 66,99%), dan pH (6,00; 6,07; 6,06), tetapi berpengaruh tidak nyata ($P > 0,05$) terhadap nilai kecerahan (L^*) (28,06%; 28,89%; 30,51%), nilai kemerahan (a^*) (7,70%; 6,84%; 8,45%), dan nilai kekuningan (b^*) (8,23%; 9,58%; 10,65%). Nilai-nilai ini menunjukkan bahwa waktu pemanggangan selama 5 menit menghasilkan keseimbangan yang baik antara retensi kelembapan, kelembutan, dan kekenyalan dibandingkan perlakuan lainnya. Lama pembakaran memberikan pengaruh terhadap kualitas mikrostruktur, yakni serabut otot mengalami penyusutan dan jarak antar serabut otot merenggang serta jaringan lemak membesar seiring dengan bertambahnya waktu pembakaran. Kesimpulan yang dapat diambil yaitu lama pembakaran 5 menit menghasilkan kualitas fisik terbaik pada sate daging kuda karena keseimbangan yang baik dari parameter yang diukur. Pembakaran yang terlalu lama dapat menyusutkan serabut otot sehingga jarak antar serabut otot merenggang dan jaringan lemak membesar.

Kata Kunci: Daging Kuda, Sate, Lama Pembakaran, Kualitas Fisik, Kualitas Mikrostruktur

THE EFFECT OF GRILLING DURATION ON THE PHYSICAL AND MICROSTRUCTURE QUALITIES OF HORSE MEAT SATAY

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ABSTRACT

This research investigated the effect of grilling duration on the physical quality and microstructure of horse meat satay. Physical and microstructural qualities were tested to measure the differences among treatments. The meat was marinated in spices and skewered with bamboo before being grilled according to the treatment conditions. The grilling durations tested were 3, 5, and 7 minutes, using charcoal for each treatment. The material used was horse meat from the back part. The observed parameters included physical quality (water holding capacity, tenderness, pH value, and color) as well as microstructure. Physical quality data were statistically analyzed using a one-way ANOVA (Analysis of Variance), and if differences were found, further testing was conducted using Duncan's New Multiple Range Test. Microstructure quality was analyzed descriptively. The results indicated that grilling duration significantly affected ($P < 0.05$) water holding capacity (31,19%; 27,24%; 26,49%), hardness (5,28 N; 6,53 N; 9,89N), gumminess (304,84; 412,71; 571,24), chewiness (192,53; 298,78; 382,53), springiness (63,19%; 71,45%; 66,99%), and pH (6,00; 6,07; 6,06); however, it did not significantly affect ($P > 0.05$) brightness (L^*) (28,06%; 28,89%; 30,51%), redness (a^*) (7,70%; 6,84%; 8,45%), and yellowness (b^*) (8,23%; 9,58%; 10,65%). These values indicate that the 5-minute grilling time resulted in a good balance of moisture retention, tenderness, and chewiness compared to the other treatments. Grilling duration influenced microstructure quality, with muscle fibers shrinking and the distance between muscle fibers increasing while fat tissue expanded as grilling time increased. It was concluded that a grilling duration of 5 minutes yielded the best physical quality for horse meat satay due to its favorable balance of the measured parameters. Excessive grilling caused muscle fibers to shrink, resulting in increased spacing between them and enlarged fat tissue.

Keywords: Horse Meat, Satay, Grilling Duration, Physical Quality, Microstructure Quality