

KARAKTERISASI PROTEIN DAN LEMAK SERTA SENYAWA PEMBENTUK CITARASA RENDANG MINANGKABAU

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ABSTRAK

Rendang merupakan makanan tradisional suku Minangkabau di Sumatera Barat yang bahan dasarnya daging, santan kelapa dan berbagai macam rempah. Proses pemasakan berlangsung secara berlahan-lahan berkisar selama 5 - 6 jam pada suhu 80-93°C. Selama proses pemasakan terbentuk 2 jenis produk yaitu kalio dan rendang.

Proses pengolahan dengan pemanasan dapat mempengaruhi nilai gizi baik kearah positif maupun kearah negatif. Perubahan disebabkan karena panas dapat menyebabkan terjadinya reaksi kimia pada protein dan lemak seperti reaksi hidrolisis, reaksi Maillard, oksidasi dan reaksi kimia lainnya. Rempah-rempah selain ditujukan untuk memperbaiki citarasa juga berfungsi sebagai antioksidan dan antimikroba.

Tujuan penelitian ini adalah untuk mempelajari karakteristik protein dan lemak serta senyawa pembentuk citarasa rendang sehingga dapat menjadi informasi dan bermanfaat baik bagi konsumen, produsen dan perkembangan ilmu pengetahuan.

Penelitian dimulai bulan Juni 2014 sampai Juli 2016, pembuatan rendang, analisis proksimat dan senyawa volatil di Laboratorium Teknologi Hasil Pertanian Unand. Analisis profil asam amino dan asam lemak di Lab. Saraswanti Indo Genetech Bogor. Berat molekul protein di Laboratorium Biokimia Pangan dan Gizi Fateta IPB. Analisis daya cerna protein (*in-vitro*) di Laboratorium Teknologi Hasil Ternak IPB.

Hasil penelitian menunjukkan bahwa: terjadinya penurunan kadar protein dan kadar asam amino. Tidak terjadi perbedaan yang signifikan pada daya cerna protein daging rendang dibanding daging segar, dan daging kalio. Skor kimia asam amino menunjukkan bahwa asam amino pembatas adalah metionin dan sistein

Kadar lemak dan minyak daging meningkat dari daging segar menjadi kalio dan rendang. Kadar asam lemak pada minyak kalio dan rendang adalah: asam lemak jenuh rantai pendek dan rantai menengah sebanyak 59,87%, asam lemak jenuh rantai panjang 31,33%, asam lemak tidak jenuh 8,60%. Karakteristik lemak dan minyak kalio dan rendang dengan pemanasan berulang selama satu dan dua kali, masih memenuhi standar yang ditetapkan oleh Departemen Perindustrian (1992-SII-003-92) Menggunakan pelarut heksan dan aseton diperoleh 8 kelompok senyawa volatil pada kalio dan rendang yaitu: karboksilat, ester, aromatis, alkohol, alkena, keton, sulfida dan alkana. Citarasa rendang disebabkan karena keberadaan protein dan asam amino dari daging dan santan kelapa, lemak dan asam lemak dari santan kelapa, senyawa-senyawa hasil reaksi Maillard (*Maillard reaction products/MRPs*) serta senyawa volatil dan non-volatil dari rempah-rempah.

Kata kunci: kalio, rendang, protein, lemak, senyawa citarasa.

CHARACTERIZATION OF PROTEIN, FAT AND FLAVOR COMPOUNDS OF RENDANG MINANGKABAU

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Abstract

Rendang is a traditional food Minangkabau people in West Sumatra that basic ingredients of meat , coconut milk and various spices. Rendang cooking process occurred in range for 5 - 6 hours at 80-93°C. During the cooking process will form two types of products, namely kalio and rendang.

The treatment process with heating may affect the value of nutrition towards the positive or negative direction. Amended caused by heat can cause a chemical reaction on the protein and fat such as hydrolysis, Maillard reaction, oxidation and other chemical reactions. The use of spices in addition is intended to improve the flavor can also function as an antioxidant, antimicrobial and anti-fungal .

The purpose of this research is to study the characteristics of proteins and fats as well as rendang flavor forming compounds that can be helpful information for consumers, producers and the development of science .

The study began in June 2014 until July 2016, which begins with making products rendang and continued with the proximate analysis and volatile compounds at the Laboratory of Agricultural Technology Andalas University. Analysis of the amino acid profile and fatty acids profile at Laboratory of Saraswanti Indo Genetech Bogor. Molecular weight of proteins at Food and Nutritional Biochemistry Laboratory faculty of Agriculture Technology IPB . Analysis of protein digestibility (*in-vitro*) at Livestock Product Technology Laboratory IPB .

The results showed that concentration of protein and amino acids were decreased. But there was no difference in the digestibility of meat rendang than fresh and kalio. Amino acid essential score show that limiting amino acid are metionin and sistein.

Fat and oil increased from fresh meat into kalio and rendang. Fatty acids profile in kalio and rendang are short-chain saturated fatty acid and medium-chain as many as 59.87 % , long chain saturated fatty acids 31.33 % , unsaturated fatty acids 8.60%. Characteristics of fats and oils in rendang with repeated heating for one and two times, they still meet the standards set by the Department of Industry (1992 - SII - 003-92)

Using hexane and acetone obtained eight groups of volatile compounds in kalio and rendang namely carboxylic, ester , aromatic, alcohol , alkene , ketone , sulfide and alkane. Flavor of rendang is caused due to the presence of protein and amino acids from meat and coconut milk, fat and fatty acids from coconut milk, Maillard Reaction Products (MRPs) and volatile and non - volatile compounds from spices.

Key words: kalio, rendang, amino acid, protein digestibility, nutritional value.