

ABSTRAK

Eka Putri Mahara. NIM : 5183540008. Uji Sensori dan Aktivitas Antioksidan Pada Belimbing Wuluh (*Averrhoa bilimbi*) Sebagai Pengawet Alami Pada Daging Sapi (*Bos taurus*). Program Studi Gizi. Jurusan Pendidikan Kesejahteraan Keluarga. Universitas Negeri Medan. 2023

Penyebab utama dari kerusakan daging adalah tercemarnya daging oleh mikroorganisme sehingga menyebabkan penyimpangan warna, bau busuk, timbulnya gas, asam dan beracun. Daging segar dapat terkontaminasi oleh bakteri yang berasal dari peralatan, proses pengolahan, air, dan pengemasan. Suatu upaya untuk mempertahankan kualitas daging dapat dilakukan dengan menggunakan belimbing wuluh. Belimbing wuluh dapat digunakan sebagai bahan pengawet alami sebab diketahui memiliki aktivitas antioksidan dan antimikroba yang dapat menghambat pertumbuhan dan kecepatan reaksi biokimia pada daging. Penelitian ini bertujuan untuk 1. Mengetahui kadar konsentrasi penambahan larutan belimbing wuluh (*Averrhoa bilimbi*) pada daging yang paling disukai panelis, 2. Mengetahui kandungan gizi makro (karbohidrat, lemak, protein) pada daging, 3. Mengetahui kandungan fitokimia (flavonoid) serta kadar aktivitas antioksidan.

Desain penelitian yang digunakan adalah penelitian eksperimen dengan menggunakan metode Rancangan Acak Lengkap (RAL) dengan faktor tunggal yaitu konsentrasi cairan belimbing wuluh yang digunakan dengan 4 formula F0 = 0%, F1 = 20% F2 = 40%, F3 = 60%. Uji sensori dilakukan di laboratorium organoleptik Universitas Negeri Medan, sedangkan untuk analisis zat gizi dilakukan di laboratorium Balai Standarisasi dan Pelayanan Jasa Industri (BSPJI) Medan, untuk analisis aktivitas antioksidan dilakukan di laboratorium Politeknik Teknologi Kimia dan Industri (PTKI). Uji organoleptik berupa uji hedonik dan uji mutu hedonik dilakukan menggunakan panelis semi terlatih yang berjumlah 25 orang. Hasil penelitian dianalisis dengan menggunakan metode uji *kruskal wallis* dengan uji lanjutan *man-whitney*. Penentuan daging sapi terbaik dipilih berdasarkan nilai rata-rata tertinggi dari setiap parameternya. Analisis kandungan protein, lemak dan karbohidrat menggunakan metode SNI 01-2891-1992 kemudian dibandingkan dengan TKPI (Tabel Komposisi Pangan Indonesia) dan analisis aktivitas antioksidan menggunakan metode DPPH.

Berdasarkan hasil penelitian perlakuan terpilih adalah F2 dengan konsentrasi larutan 40% dengan total skor 1. Kandungan gizi pada daging yang dimarinasi dengan konsentrasi larutan 40% yaitu kadar karbohidrat (0,00 %), kadar protein (16,7 %), kadar lemak (14,9 %), kadar fitokimia flavonoid sebesar (11024,98 µg/gram) dan nilai aktivitas antioksidan berdasarkan IC50 yaitu 94,41 ppm yang tergolong kuat.

Kata kunci : Daging sapi, Belimbing wuluh, Pengawet alami, Antioksidan, Zat gizi.

ABSTRACT

Eka Putri Mahara. NIM : 5183540008. Sensory Test and Antioxidant Activity in Belimbing Wuluh (*Averrhoa bilimbi*) as a Natural Preservative in Beef (*Bos taurus*). Nutrition Study Program. Family Welfare Education Department. Medan State University. 2023

The main cause of spoilage of meat is contamination of meat by microorganisms, causing discoloration, bad smell, gas, acid and poison. Fresh meat can be contaminated with bacteria from equipment, processing, water and packaging. An effort to maintain the quality of meat can be done by using belimbing wuluh. Carambola wuluh has a low pH and has active compounds in the form of flavonoids which act as anti-bacterial agents. Carambola wuluh can be used as a natural preservative because it is known to have antioxidant and antimicrobial activities that can inhibit growth and speed biochemical reactions in meat. This study aims to determine the concentration of the addition of belimbing wuluh (*Averrhoa bilimbi*) solution to the meat that the panelists like most as well as the macronutrient content (carbohydrates, fat, protein) and the content of phtochemicals (flavonoids) as well as the levels of antioxidant activity.

The research design used was an experimental study using a completely randomized design (CRD) method with a single factor, namely the concentration of starfruit juice used with 4 formulas F0 = 0%, F1 = 20% F2 = 40%, F3 = 60%. The sensory test was carried out at the organoleptic laboratory at Medan State University, while for nutrient analysis it was carried out at the Medan Industrial Standardization and Service Center (BSPJI) laboratory, for antioxidant activity analysis it was carried out at the Chemical and Industrial Technology Polytechnic (PTKI) laboratory. Organoleptic tests in the form of hedonic tests and hedonic quality tests were carried out using 25 semi-trained panelists. The results of the study were analyzed using the Kruskal Wallis test method with the Man-Whitney follow-up test. Determination of the best meat is selected based on the highest average value of each parameter. Analysis of protein, fat and carbohydrate content using the SNI-0102891-1992 method was then compared with TKPI (Indonesian Food Composition Table) and analysis of antioxidant activity using the DPPH method.

Based on the research results, the chosen treatment was F2 with a solution concentration of 40% with a total score of 1. The nutritional content of marinated beef with a concentration of 40% was carbohydrate content (0.00%), protein content (16.7%), fat content (14.9 %), the levels of flavonoid phytochemicals were (11024.98 µg/gram) and the value of antioxidant activity based on IC50 was 94.41 ppm.

Keywords: Beef, Carambola wuluh, Natural preservative, Antioxidant, Macronutrients.