

ABSTRACT

CHARACTERIZATION OF CHEMICAL, MICROBIOLOGICAL, AND SENSORY COMPONENTS OF SHREDDED SPICED FISH UNDER VARIOUS STIRRING TECHNIQUES, ROASTING DURATIONS, AND SHELF-LIFE ESTIMATION USING THE ASLT (ACCELERATED SHELF-LIFE TESTING) ARRHENIUS

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Lampung Province had an abundant supply of *Ranau tilapia*, but it was highly perishable post-harvest. The innovation of shredded spiced fish made from Ranau tilapia faced challenges in the roasting process, which was still conducted manually without standardized timing. Improvement of this process can be achieved through variations in stirring techniques and standardized roasting durations, as well as ozone sterilization to extend shelf life. This study examined the effects of stirring techniques and roasting durations on the chemical, microbiological, and sensory characteristics of the shredded spiced fish, determined the best treatment using the De Garmo method, and estimated its shelf life using the ASLT-Arrhenius method. The study was conducted in two stages. The first stage employed an CRBD with two factors, stirring technique (mechanical/conventional) and roasting duration (60, 75, 90, 105, 120 minutes), with three replications, analyzed using ANOVA and HSD 5% significance level. The second stage evaluated the effect of ozone sterilization on shredded spiced fish stored at 30°C, 40°C, and 50°C, with two replications, analyzed using the ASLT-Arrhenius method. The results indicated that the stirring technique significantly affected moisture content, protein content, aroma, color, taste, texture, and overall acceptability but did not influence total plate count. Roasting duration and its interaction with the stirring technique affected all quality parameters. The best treatment was mechanical stirring for 105 minutes, yielding a moisture content of 9.79%, protein content of 38.57%, and a total plate count of 1.53 log CFU/g, fulfilling the requirements of SNI 7690:2019. This treatment is also produced with a highly preferred taste, aroma, color, and texture. The shelf life of shredded spiced fish without ozonation in aluminium foil packaging was estimated at 206.31 days (6 months and 24 days).

Keywords: shredded spiced fish, stirring technique, roasting duration, shelf life ASLT-Arrhenius

ABSTRAK

KARAKTERISASI KOMPONEN KIMIAWI, MIKROBIOLOGI, SENSORI ABON IKAN REMPAH PADA BERBAGAI TEKNIK PENGADUKAN, LAMA PENYANGRAIAN, DAN PENDUGAAN UMUR SIMPAN DENGAN METODE ASLT (ACCELERATED SHELF-LIFE TESTING) ARRHENIUS

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Provinsi Lampung memiliki komoditas unggulan ikan nila ranau yang melimpah, namun mudah rusak pascapanen. Inovasi abon ikan rempah berbahan dasar ikan nila ranau menghadapi kendala penyangraian yang masih manual dan tanpa standar waktu. Penyempurnaan proses dapat dilakukan dengan variasi teknik pengadukan dan lama penyangraian yang terstandarisasi, serta teknik sterilisasi ozon untuk memperpanjang masa simpan. Penelitian ini mengkaji pengaruh teknik pengadukan dan lama penyangraian terhadap karakteristik kimiawi mikrobiologi sensori abon, menentukan perlakuan terbaik dengan metode De Garmo, serta memperkirakan umur simpan dengan metode ASLT-Arrhenius. Penelitian dilakukan dalam dua tahap. Tahap pertama menggunakan Rancangan Acak Kelompok (RAK) dengan dua faktor, teknik pengadukan (mesin dan konvensional) serta lama penyangraian (60, 75, 90, 105, dan 120 menit) dengan tiga ulangan. Data dianalisis menggunakan ANOVA dan BNJ 5%. Tahap kedua menguji efek sterilisasi ozon pada abon yang disimpan pada suhu 30°C, 40°C, dan 50°C dengan dua ulangan, dianalisis menggunakan metode ASLT-Arrhenius. Hasil penelitian menunjukkan teknik pengadukan berpengaruh terhadap kadar air, protein, aroma, warna, rasa, tekstur, dan penerimaan keseluruhan, tetapi tidak terhadap angka lempeng total. Lama penyangraian dan interaksinya dengan teknik pengadukan berpengaruh terhadap seluruh parameter mutu. Perlakuan terbaik adalah mesin pengaduk dengan penyangraian 105 menit, menghasilkan abon dengan kadar air 9,79%, protein 38,57%, dan angka lempeng total 1,53 log koloni/g, sesuai SNI 7690:2019, serta memiliki rasa, aroma, warna, dan tekstur sangat disukai. Umur simpan abon tanpa ozonisasi dalam kemasan aluminium foil mencapai 206,31 hari (6 bulan 24 hari).

Kata kunci: abon ikan rempah, teknik pengadukan, lama penyangraian, umur simpan ASLT Arrhenius