

## ABSTRAK

### PENINGKATAN UMUR SIMPAN OSENG MERCON SIAP SAJI STERILISASI DALAM KEMASAN RETORT POUCH: ANALISIS PENGARUH METODE DAN WAKTU STERILISASI

Oleh

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## ABSTRAK

Oseng mercon merupakan makanan khas D.I. Yogyakarta yang bercita rasa pedas namun memiliki umur simpan pendek pada suhu ruang. Pengemasan dalam bentuk *frozen food* dinilai kurang praktis, sehingga diperlukan alternatif pengawetan melalui sterilisasi untuk mengeliminasi mikroba patogen seperti *Salmonella* sp., *Staphylococcus aureus*, *Clostridium botulinum*, dan *Bacillus cereus*. Penelitian ini mengkaji efektivitas teknik sterilisasi menggunakan autoklaf (121°C selama 3 dan 5 menit) dan panci presto (110°C selama 33 dan 36 menit) dengan kemasan *retort pouch* berbahan *aluminium foil*. Penentuan waktu sterilisasi atau *come-up-time* (CUT) didasarkan pada nilai kecukupan panas ( $F_0$ ). Evaluasi umur simpan dilakukan melalui metode *Extended Storage Studies* (ESS) meliputi pengamatan fisik dan kenampakan, *Total Plate Count* (TPC), pH, dan kadar air. Analisis data menggunakan *two-way ANOVA* ( $\alpha = 5\%$ ) dan uji lanjut *Duncan's Multiple Range Test* (DMRT). Hasil menunjukkan bahwa teknik panci presto 36 menit (P36) paling efektif mempertahankan umur simpan hingga 7 hari (TPC dan kadar air), serta kestabilan pH hingga 9 hari. Perlakuan lain menunjukkan efektivitas lebih rendah dengan umur simpan 3-8 hari tergantung parameter. Sampel kontrol (K) sebagai acuan batas kritis atau *Lower Control Limit* (LCL) mengalami penurunan mutu pada hari ke-4, ditandai dengan kemasan mengembung, aroma asam, pH 4,24, dan kadar air 57,86%. Hasil perhitungan Harga Pokok Produksi (HPP) menunjukkan bahwa teknik P36 lebih ekonomis dengan nilai sebesar Rp5.859,42 per kemasan dibandingkan jasa pengalengan (Rp10.000-Rp15.000).

**Kata kunci:** sterilisasi, retort pouch, oseng mercon, autoklaf, presto

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**EXTENDING THE SHELF LIFE OF READY-TO-EAT 'OSENG MERCON'  
STERILIZATION IN RETORT POUCH PACKAGING: ANALYSIS OF THE  
EFFECT OF STERILIZATION METHODS AND TIME**

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**ABSTRACT**

Oseng mercon is a specialty dish from D.I. Yogyakarta with a distinctive spicy flavor, but it has a short shelf life at room temperature. Oseng mercon, packaged as frozen food, is considered less practical, so an alternative preservation method through sterilization is needed to eliminate pathogenic microorganisms such as *Salmonella* sp., *Staphylococcus aureus*, *Clostridium botulinum*, and *Bacillus cereus*. This study examines the effectiveness of sterilization techniques using an autoclave (121°C for 3 and 5 minutes) and pressure cooker (110°C for 33 and 36 minutes) with aluminum foil retort pouches. The determination of sterilization time, or come-up-time (CUT), was based on the heat adequacy value ( $F_0$ ). Shelf life evaluation was conducted using the Extended Storage Studies (ESS) method, which included physical and visual observations, Total Plate Count (TPC), pH, and moisture content measurements. Data analysis used two-way ANOVA ( $\alpha = 5\%$ ) and Duncan's Multiple Range Test (DMRT) for post-hoc test. Results showed that the 36-minute pressure cooker technique (P36) was most effective in maintaining shelf life for up to 7 days (TPC and moisture content) and pH stability for up to 9 days. Other treatments showed lower effectiveness with a shelf life of 3-8 days depending on the parameter. The control sample (K) as the critical limit or Lower Control Limit (LCL) showed a decline in quality on day 4, characterized by bulging packaging, a sour aroma, a pH of 4,24, and a moisture content of 57,86%. The calculation of the Production Cost (HPP) showed that P36 technique was more economical with a value of Rp5.859,42 per package compared to canning services (Rp10.000-Rp15.000).

**Keywords:** *sterilization, retort pouch, oseng mercon, autoclave, pressure cooker*

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