

**PENDUGAAN UMUR SIMPAN BUBUK PEPTON DAGING HALAL
DENGAN PENDEKATAN KADAR AIR KRITIS DI PUI-PT PROBIOTIK
UGM**

INTISARI

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Bubuk pepton daging memiliki kecenderungan menyerap uap air atau bersifat higroskopis yang berisiko menyebabkan kerusakan. Penelitian ini bertujuan untuk memperkirakan umur simpan dari bubuk pepton daging menggunakan metode *Accelerated Shelf Life Test (ASLT)* dengan pendekatan kadar air kritis. Bubuk pepton daging memiliki kadar air awal sebesar 7,22% db atau 0,0722 g H₂O/g padatan. Bubuk pepton daging akan dikemas menggunakan botol plastik *High Density Poly Ethylene (HDPE)* dan disimpan pada kondisi kelembaban relatif (RH) yang berbeda untuk mengetahui pola penyerapan air pada produk berdasarkan kurva Isoterm Sorpsi Lembab (ISL), sehingga dapat diprediksi umur simpan berdasarkan model pendekatan kadar air kritis. Kelembaban ruang penyimpanan yang digunakan, yaitu: 12%, 32%, 54%, 75%, and 97%. Dalam perhitungan umur simpan bubuk pepton daging digunakan RH 66% yang merepresentasikan RH ruangan. Hasil penelitian menunjukkan bahwa bubuk pepton daging yang disimpan pada suhu 30°C dengan RH 54%, 66%, dan 75% memiliki umur simpan berturut-turut 706, 303, 187 hari. Umur simpan bubuk pepton daging yang didapatkan menandakan bahwa semakin tinggi RH yang digunakan untuk penyimpanan maka semakin pendek umur simpan produk.

Kata kunci : bubuk pepton daging, kadar air kritis, umur simpan

**SHELF LIFE ESTIMATION OF HALAL MEAT PEPTONE POWDER USING
CRITICAL MOISTURE CONTENT MODEL METHOD AT PUI-PT
PROBIOTIK UGM**

ABSTRACT

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Meat peptone powder has a tendency to absorb moisture, making it highly hygroscopic and susceptible to deterioration. This study aims to estimate the shelf life of meat peptone powder using the Accelerated Shelf Life Test (ASLT) method with a critical moisture content approach. The initial moisture content of the meat peptone powder was 7.22% db or 0.0722 g H₂O/g solid. The powder was packaged in HDPE plastic bottles and stored under different relative humidity (RH) conditions to observe its moisture absorption pattern based on the ISL curve. The shelf life was then predicted using the critical moisture content model. The storage humidity levels used in this study were 12%, 32%, 54%, 75%, and 97%. For shelf-life calculations, RH 66% was used to represent room conditions. The results showed that at a storage temperature of 30°C, the shelf life of the meat peptone powder was 706, 303, and 187 days at RH levels of 54%, 66%, and 75%, respectively. These findings indicate that higher RH levels during storage lead to a shorter shelf life of the product.

Keywords : meat peptone powder, critical moisture content, shelf life