

## Pendugaan Umur Simpan Jamu Turun Tegang Saraf dengan Penggunaan Pengawet Makanan = Shelf Life Estimation of Neuropathic Pain Reducer Herbal with The Use of Food Preservative

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### Abstrak

Jamu Turun Tegang Saraf merupakan produk jamu cair siap minum berbahan dasar cengkih, jahe merah, dan pala yang berkhasiat menurunkan ketegangan saraf. Jamu ini merupakan jamu baru yang masih memerlukan pengembangan produk salah satunya dengan menduga umur simpannya untuk memberikan jaminan keamanan mutu serta informasi keamanan konsumsi bagi konsumen. Dalam penelitian ini, mutu dan keamanan produk diamati berdasarkan variasi jumlah penambahan pengawet natrium benzoat (0; 1000; dan 2000 mg/kg) serta suhu penyimpanan (30°C; 40°C; dan 50°C). Penelitian dilakukan untuk memperoleh jumlah penambahan pengawet yang memberikan umur simpan jamu paling lama dengan mengamati parameter penurunan kandungan senyawa fenolik dan nilai organoleptik (warna, bentuk, aroma, dan rasa) jamu selama penyimpanan. Pendugaan umur simpan dilakukan menggunakan metode Accelerated Shelf Life Testing (ASLT) dengan pendekatan model persamaan Arrhenius. Diamati pertumbuhan mikroba selama penyimpanan menggunakan metode Angka Lempeng Total (ALT) guna memberikan jaminan keamanan konsumsi bagi konsumen. Hasil penelitian ini diperoleh bahwa pendugaan umur simpan dilakukan berdasarkan parameter kritis kandungan senyawa fenolik dimana umur simpan Jamu Turun Tegang Saraf tanpa penambahan pengawet dengan suhu penyimpanan 30°C; 40°C; dan 50°C adalah 3; 4; dan 5 hari; Jamu Turun Tegang Saraf dengan penambahan pengawet 1000 mg/kg suhu penyimpanan 30; 40; dan 50 adalah 5; 6; dan 8 hari; dan umur simpan Jamu Turun Tegang Saraf dengan penambahan pengawet 2000 mg/kg suhu penyimpanan 30; 40; dan 50°C adalah 6; 7; dan 9 hari. Jamu Turun Tegang Saraf dengan penambahan pengawet 2000 mg/kg suhu penyimpanan 30°C; 40°C; dan 50°C aman dikonsumsi hingga hari ke-16 penyimpanan. Jamu Turun Tegang Saraf dengan pengawet 1000 mg/kg suhu penyimpanan 40°C; dan 50°C aman dikonsumsi hingga hari ke-16 penyimpanan, sedangkan Jamu Turun Tegang Saraf tanpa pengawet suhu penyimpanan suhu 40°C dan 50°C aman dikonsumsi hingga hari ke-13 dan hari ke-16 penyimpanan.

.....Neuropathic Pain Reducer Herbal is a ready-to-drink liquid herbal medicine made from cloves, red ginger, and nutmeg which has the effect of reducing nervous tension. This product is a new herbal medicine that still that still needs some product developments, including product shelf life to provide quality assurance and consumption safety information for consumers. In this study, product quality and safety were observed based on variations in the amount of added sodium benzoate (0; 1000; and 2000 mg/kg) and storage temperature (30°C; 40°C; and 50°C). The study was conducted to obtain the amount of added preservatives that provide the longest shelf life of herbal medicine by observe the decrease in quality parameters of the phenolic compounds content and organoleptic values (color, shape, aroma, and taste) of herbal medicine during storage. Shelf life estimation was carried out using the Accelerated Shelf Life Testing (ASLT) method with the Arrhenius equation model approach. Microbial growth was observed during storage using the Total Plate Count (TPC) method in order to guarantee consumption safety for consumers. The content of eugenol compounds which act as natural preservatives in herbal medicine were

identified and their decrease was observed. The results of this study showed that the estimation of shelf life was carried out based on critical parameters of the content of phenolic compounds where the shelf life of Neuropathic Pain Reducer Herbal without the addition of preservatives with a storage temperature of 30; 40; and 50 is 3; 4; and 5 days; Neuropathic Pain Reducer Herbal with added sodium benzoate 1000 mg/kg storage temperature 30; 40; and 50 is 5; 6; and 8 days; and the shelf life of Neuropathic Pain Reducer Herbal with added sodium benzoate 2000 mg/kg storage temperature 30; 40; and 50 is 6; 7; and 9 days. Neuropathic Pain Reducer Herbal with added sodium benzoate 2000 mg/kg and storage temperature 30; 40; and 50 is safe for consumption until the 16th day of storage. Neuropathic Pain Reducer Herbal with added sodium benzoate 1000 mg/kg storage temperature 40; and 50 are safe for consumption up to the 16th day of storage, while Neuropathic Pain Reducer Herbal without added sodium benzoate at storage temperatures of 40 and 50 are safe for consumption until the 13th day and 16th day of storage. Eugenol compounds were proven to exist by HPLC testing and it was found that the greater the amount of addition of sodium benzoate affects the degradation of eugenol compounds.