

RINGKASAN

Minuman temulawak pada penjual jamu gendong umumnya dikemas menggunakan kantong plastik atau botol plastik yang diduga tidak mampu menjaga minuman temulawak dari kerusakan fisik, kimia, maupun mikrobiologi sehingga produk menjadi cepat rusak dan berumur simpan pendek. Minuman temulawak mengandung senyawa bioaktif yang sangat reaktif terhadap cahaya, pH, dan suhu. Alternatif penanganan untuk meminimalisir kerusakan tersebut yaitu dengan pemilihan kemasan yang tepat dan penyimpanan pada suhu rendah. Penelitian ini bertujuan untuk mengetahui pengaruh jenis kemasan, umur simpan, dan kombinasi antara jenis kemasan dan umur simpan terhadap sifat kimia, mikrobiologi, dan sensoris minuman temulawak selama penyimpanan suhu refrigerator. Serta untuk mengetahui umur simpan minuman temulawak dari masing-masing jenis kemasan.

Metode yang digunakan adalah metode eksperimental dengan Rancangan Acak Kelompok (RAK) yang disusun secara faktorial dengan 3 kali ulangan. Faktor yang diuji yaitu 1) Jenis kemasan (K) terdiri dari plastik PE (K1); *cup* plastik PP (K2); dan botol kaca coklat (K3). 2) Umur simpan (L) terdiri dari 2 hari (L1); 6 hari (L2); 10 hari (L3); dan 14 hari (L4). Variabel yang diamati meliputi: 1) Total mikroba (variabel mikrobiologi) dan kadar gula reduksi (variabel kimia). Data dianalisis menggunakan uji F dengan taraf kepercayaan 95%; 2) Warna, aroma rempah tambahan, flavor temulawak, rasa pahit, rasa asam, dan kesukaan (variabel sensoris). Data dianalisis menggunakan uji *Friedman*; 3) Analisis lebih lanjut terkait proksimat (kadar air, abu, lemak, protein total, dan karbohidrat) dan total padatan (Brix). Data dianalisis menggunakan uji T.

Variasi jenis kemasan dan umur simpan berpengaruh nyata terhadap total mikroba minuman temulawak. Minuman temulawak selama penyimpanan suhu refrigerator menghasilkan total mikroba terendah pada kemasan botol kaca coklat yaitu 5,62 Log₁₀ CFU/mL dan umur simpan 2 hari yaitu 4,63 Log₁₀ CFU/mL, namun pada umur simpan 14 hari minuman temulawak memiliki total mikroba 7,53 Log₁₀ CFU/mL dan sudah melebihi SNI total mikroba pada minuman jamu yaitu maksimal 10⁶ CFU/mL. Kombinasi perlakuan antara jenis kemasan dan umur simpan berpengaruh nyata terhadap sifat sensoris minuman temulawak. Minuman temulawak terbaik diperoleh dari kombinasi perlakuan jenis kemasan *cup* plastik PP dengan umur simpan 6 hari yang menghasilkan warna 3,35 (kuning kecoklatan), rasa pahit 2,58 (pahit-agak pahit), rasa asam 2,95 (sedikit kuat-agak kuat), dan total mikroba 1,48 x 10⁵ CFU/mL (masih memenuhi SNI total mikroba minuman jamu yaitu 10⁶ CFU/mL). Berdasarkan total mikroba dan sensoris, umur simpan minuman temulawak pada kemasan plastik PE, *cup* plastik PP, botol kaca coklat berturut-turut yaitu 6, 10, dan 10 hari.

SUMMARY

Temulawak drinks in traditional herbalist generally packaged using plastic bags or plastic bottles that were allegedly unable be able to keep temulawak drinks from physical, chemical, and microbiological damages which makes the product can be easily damaged and have a short shelf life. Temulawak drink contains bioactive compounds that are highly reactive to light, pH, and temperature. Alternative treatment to minimize those damages is by selecting an appropriate packaging and store them at low temperatures. This research aimed to determine the effect of the packaging's type, shelf life, and the combination of the packaging's type and shelf life toward chemicals, microbiological and sensory properties of temulawak drinks during its storage in refrigerator's temperature. And also to determine the shelf life of the temulawak drinks from each type of packaging.

This research was conducted by experimental method with Randomized Block Design (RBD) arranged in factorial with three replications. The examined factors were: 1) Type of packaging (K) which consists of a plastic PE (K1); plastic cup PP (K2); and a brown glass bottle (K3). 2) Shelf life (L) which consists of 2 days (L1); 6 days (L2); 10 days (L3); and 14 days (L4). The observed variables including: 1) Total microbes (microbiology variable) and reduction sugar (chemical variable). The data were analyzed by F test with 95% of trust level; 2) The color, aroma of additional spices, temulawak's flavour, bitter taste, sour taste, and preferences (sensory variables). The data were analyzed by Friedman test; 3) Further analysis related proximate (moisture, ash, fat, total protein, and carbohydrates) and total solids (Brix). The data were analyzed by T test.

Variations type of packaging and shelf life significantly affect the total microbial of temulawak drinks. Temulawak drinks during its storage at the refrigerator's temperature which has the lowest total microbes is in brown glass bottles that is 5,62 Log₁₀ CFU/mL and shelf life of 2 days is 4,63 Log₁₀ CFU/mL, but the shelf life of 14 days temulawak drink has total microbes 7,53 Log₁₀ CFU/mL and already exceeded the SNI's total microbes of herb drink is a maximum of 10⁶ CFU/mL. The combination treatment between types of packaging and shelf life significantly affect the sensory variables of temulawak drinks. The best of temulawak drinks was produced from the combination treatment of the type of packaging plastic cup PP with a shelf life of 6 days which produce color 3,35 (tawny), 2,58 bitter taste (bitter- slightly bitter), sour taste of 2,95 (slightly stronger-bit strong), and the total microbial 1,48 x 10⁵ CFU/mL (still qualify SNI total microbial herbal drink that is 10⁶ CFU/mL). The shelf life of temulawak drinks on each PE plastic packaging, plastic cup PP, and brown glass bottles in a row are 6, 10, and 10 days.