KONDISI KRITIS DAN STABILITAS SIFAT ANTIOKSIDASI JUS ALPUKAT DENGAN PENAMBAHAN LIDAH BUAYA (*Aloe vera var. chinensis)* SELAMA PENYIMPANAN

INTISARI

Jus alpukat dengan penambahan gel lidah buaya dibuat dengan cara mencampurkan alpukat, gel lidah buaya sebanyak 5%, gula 15% dan air (1:1,5). Penambahan lidah buaya pada produk pangan meningkatkan nilai gizi dan mampu menghambat oksidasi lemak pada jus alpukat yang kadar lemaknya tinggi. Hasil sebelumnya menunjukan bahwa penambahan lidah buaya 5%, gula 15%, dan air (1:1,5) pada pembuatan jus alpukat menghasilkan jus yang disukai, namun kondisi kritis dan stabilitas sifat antioksidasi jus alpukat yang ditambah lidah buaya belum diketahui. Jus buah termasuk produk pangan yang memiliki masa simpan relatif pendek. Tujuan umum dari penelitian ini adalah menentukan daya simpan berdasarkan kondisi dan sifat kritis. Tujuan khususnya adalah menentukan kondisi kritis dan mengevaluasi stabilitas sifat antioksidasi jus alpukat dengan penambahan lidah buaya selama penyimpanan.

Rancangan Percobaan yang dilakukan adalah Rancangan Acak Lengkap (RAL) dengan 1 faktor, yaitu lama penyimpanan. Penentuan kondisi kritis dengan menggunakan metode *paired comparison* antara jus alpukat dengan penambahan lidah buaya baru sebagai kontrol (penyimpanan jam ke nol) dan jus yang disimpan pada wadah terbuka (kondisi akselerasi) pada kelembaban relatif ±75,5% dan suhu 25^0C masing-masing setiap dua jam (2,4,6, dan seterusnya sampai panelis menolak). Penentuan umur simpan menggunakan lama penyimpanan 24,48,72 jam pada kondisi penyimpanan yang sama dilakukan dengan uji inderawi menggunakan metode *paired comparison* sampai panelis menolak. Analisis yang dilakukan adalah kadar air, DDPH, *total plate count* (TPC) pada jus alpukat dengan penambahan lidah buaya segar, kritis dan pada lama penyimpanan 24,48 dan 72 jam.

Hasil penelitian menunjukan bahwa kondisi kritis jus alpukat dengan penambahan lidah buaya yang disimpan pada RH 75,5% dan suhu 20^0C selama beberapa hari ditentukan oleh meningkatnya total bakteri dan sifat kritis ditentukan oleh perubahan bau. Secara khusus kondisi kritis jus alpukat dengan penambahan gel lidah buaya terjadi pada kadar air 90,37%, dengan total bakteri $4{,}2 \times 10^4$ koloni/g. Jus alpukat dengan penambahan lidah buaya memiliki daya simpannya 24 jam pada RH 77,5% dan suhu 20^0C. Aktivitas antioksidasi lidah buaya segar dengan nilai *Radical Scavenger Activity* (RSA) 8,91% dan setelah penyimpanan selama 1 hari (24 jam) menjadi 8,82%.

Kata kunci: kondisi-kritis, Jus-alpukat, lidah-buaya, antioksidan, daya-simpan

CRITICAL CONDITION AND STABILITY ANTIOXIDATIVE CHARACTERISTIC STABILITY OF AVOCADO JUICE WITH ADDED ALOE VERA (*Aloe vera var. cinensis*) DURING STORAGE

ABSTRACT

Avocado juice with the addition of *aloe vera* gel is made by mixing avocado, *aloe vera*with 5% of aloe vera gel, 15% of sugar, and water (1:1.5). The addition of aloe vera on food product has improved the nutrition value and able to inhibit the fat oxidation on avocado juice which has high fat content. The previous results have indicated that the addition of aloe vera (5%), sugar (15%), and water (1:1.5) on the making of avocado juice has produced preferred juice, however, the critical condition and the stability of antioxidant properties of avocado juice which added by *aloe vera* have not been discovered. Fruit juice includes food products that have a relatively short shelf life. The purpose of this research was to determine the storage life of the of avocado juice with *aloe vera* gel based on then critical condition during storage. Specifically, the purposes of this research were to determine the critical condition of the avocado juice with *aloe vera* gel and to evaluate the changes in antioxidative activity during storage. The experimental designed which has been performed is Completely Randomized Design (CRD) with one factor, namely retention time. The determination of critical condition is performed by using paired comparison method between avocado juice with an addition of fresh *aloe vera* as the control (retention time towards zero) and stored juice on the open container (acceleration condition) on ±75.5% of relative humidityand 25^0C of temperature respectively every two hours (2, 4, 6, and so on until the panelist is rejecting). The determination of storage time is using the 24, 48, 72 hours of retention time on the similar retention condition which performed through sensory test by applying paired comparison method until rejected by panelist. The performed analyses are water content, DDPH, total plate count (TPC) on avocado juice with an addition of fresh and critical type of *aloe vera* on 24, 48, 72 hours of retention time. The research results indicate that the critical condition of avocado juice with an addition of *aloe vera* which stored on 75.5% of RH and 20^0C of temperature in several days is determined by the increasing level of total bacteria and the critical properties are determined by the change of scent. In particular, the critical condition of avocado juice with an addition of *aloe vera* gel is occurring on 90.37% of water content with 4.2×10^4 colony/g of bacteria. The avocado juice with an addition of *aloe vera* has 24 hours of storability on 77.5% of RH and 20^0C of temperature. The antioxidant activity of fresh *aloe vera* with 8.91% of Radical Scavenger Activity (RSA) value and after one day (24 hours) of storage the value has become 8.82%.

Keywords : critical-condition, avocado-juice, *aloe-vera*, antioxidant, storability