

**KARAKTERISTIK KOMBUCHA RIMPANG JAHE MERAH (*Zingiber officinale* var. *Rubrum*) DAN TEMULAWAK (*Curcuma xanthorrhiza* Roxb) SELAMA FERMENTASI**

**INTISARI**

Teh kombucha merupakan produk minuman tradisional hasil fermentasi larutan teh dan gula dengan menggunakan starter kombucha. Rimpang jahe dan temulawak dikenal sebagai sumber senyawa antioksidan alami dan juga memiliki rasa dan aroma khas. Kadar antioksidan, rasa dan aroma pada teh kombucha dapat ditingkatkan dengan menambahkan jahe dan temulawak. Tujuan dari penelitian ini untuk mengetahui pengaruh penambahan jahe, temulawak, dan perlakuan variasi lama waktu fermentasi terhadap sifat kimia, fisik, dan tingkat kesukaan kombucha rimpang

Teh kombucha rimpang dibuat dari larutan teh hijau dengan penambahan rimpang jahe dan temulawak melalui proses pengirisan rimpang, pengestrakan rimpang, penyaringan dan fermentasi. Metode penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan 2 faktor, yaitu pertama perlakuan jenis rimpang (jahe : air (1:3) dan temulawak : air (1:3) ) dan kedua lama waktu fermentasi 5, 7, 12 hari dengan 2 kali pengulangan. Semua data kuantitatif dianalisis menggunakan uji univariat serta uji F (ANOVA) dengan taraf kepercayaan yang digunakan 95%. dan dilanjutkan dengan uji Duncan.

Hasil penelitian menunjukkan penambahan rimpang (jahe dan temulawak) dan lama waktu fermentasi berpengaruh nyata ( $P < 0,05$ ) terhadap aktivitas antioksidan, kadar alkohol, dan tingkat kesukaan teh kombucha. Jenis rimpang (jahe dan temulawak) berpengaruh nyata ( $P < 0,05$ ) terhadap nilai total asam tertitrasi dan pH, akan tetapi jenis rimpang dan lama waktu fermentasi tidak menunjukkan adanya perbedaan nyata terhadap warna  $L^*$ ,  $a^*$ , dan  $b^*$ . Teh kombucha yang paling disukai dan memiliki aktivitas antioksidan tertinggi adalah teh kombucha yang terbuat dari rimpang temulawak dengan lama waktu fermentasi 7 hari. Teh kombucha tersebut memiliki nilai warna  $L^*$  58,40, warna  $a^*$  15,16, warna  $b^*$  32,68, total asam tertitrasi 0,70 %, pH 5,30, antioksidan 74,10 % RSA, alkohol 1,13 % dan nilai kesukaan 3,90.

Kata kunci : teh kombucha, jahe merah (*Zingiber officinale* var. *Rubrum*) , temulawak (*Curcuma xanthorrhiza* Roxb), antioksidan

# **CHARACTERISTICS OF KOMBUCHA RED GINGER (*Zingiber officinale* var. *Rubrum*) AND CURCUMA RHIZOMES (*Curcuma xanthorrhiza* Roxb) DURING FERMENTATION**

## **ABSTRACT**

Kombucha tea is a traditional beverage product from the fermentation of tea and sugar using the kombucha starter. The rhizomes of ginger and curcuma are known as natural antioxidant compounds sources with distinctive taste and aroma. The antioxidant level, taste, and aroma of kombucha tea can be increased by adding ginger and curcuma. The purpose of this study was to determine the effect of adding ginger, curcuma, and variation treatment in the duration of fermentation on chemical, physical, and preference levels of kombucha rhizome.

Kombucha rhizome tea is made from the green tea solution with the adding of ginger and curcuma rhizome through a process of slicing rhizomes, extracting rhizomes, filtering and fermentation. The research method used was a complete randomized design (CRD) with 2 factors, namely the treatment of rhizome types (ginger: water (1: 3) and curcuma: water (1: 3)) and the duration of fermentation which were 5, 7, 12 days with twice repetition. All quantitative data were analyzed using the univariate test and the F test (ANOVA) with the 95% confidence level, and continued with the Duncan test.

The results of this study showed that the addition of rhizomes (ginger and curcuma) and the duration of fermentation had a significant effect ( $P < 0.05$ ) on antioxidant activity, alcohol content, and the preference level of kombucha tea. Types of rhizomes (ginger and curcuma) had a significant effect ( $P < 0.05$ ) on the total value of titrated acid and pH, but the type of rhizome and the duration of fermentation did not show any significant differences in the colors  $L^*$ ,  $a^*$ , and  $b^*$ . The kombucha tea which was made from curcuma rhizome with 7 days fermentation was the most preferred kombucha tea and had the highest antioxidant activity. The kombucha tea had a color value of  $L^* 58.40$ , color  $a^* 15.16$ , color  $b^* 32.68$ , total titrated acid 0.70%, pH 5.30, antioxidant 74.10% RSA, alcohol 1.13 % and preferred value of 3.90.

Keywords: kombucha tea, red ginger (*Zingiber officinale* var. *Rubrum*), curcuma (*Curcuma xanthorrhiza* Roxb), antioxidant