

## **ABSTRAK**

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### **KARAKTERISTIK MINUMAN FUNGSIONAL EKSTRAK DAUN JAMBLANG (*Syzygium cumini*) DENGAN PENAMBAHAN SERBUK DAUN STEVIA (*Stevia rebaudiana*)**

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(xix + 60 halaman: 25 gambar, 6 tabel, dan 26 lampiran)

Minuman fungsional dapat dibuat dari berbagai tanaman, salah satunya adalah daun jamblang. Daun jamblang (*Syzygium cumini*) dapat mencegah penyakit diabetes karena memiliki aktivitas antioksidan, aktivitas inhibisi  $\alpha$ -glukosidase dan mengandung senyawa alkaloid, flavonoid, serta tanin. Daun stevia (*Stevia rebaudiana*) mengandung senyawa steviosida yang dapat memberikan rasa manis pada minuman fungsional. Penelitian ini bertujuan untuk memanfaatkan daun jamblang dan daun stevia dalam pembuatan minuman fungsional. Penelitian terbagi menjadi dua tahap yaitu tahap pendahuluan dan utama. Pada tahap pendahuluan dilakukan penentuan konsentrasi etanol berdasarkan uji total fenolik, flavonoid, aktivitas antioksidan, dan inhibisi  $\alpha$ -glukosidase. Pengujian yang sama juga dilakukan untuk mengetahui karakteristik serbuk daun stevia. Penelitian utama dilakukan untuk menentukan formulasi terbaik dalam pembuatan minuman fungsional. Penentuan dilakukan terhadap komposisi ekstrak daun jamblang sebanyak 0,1; 0,2; 0,3% serta pada konsentrasi serbuk daun stevia sebanyak 0,04; 0,07; 0,1%. Pada seluruh formulasi dilakukan pengujian pada warna, pH, total padatan terlarut, dan dilakukan pengujian secara organoleptik. Pada minuman fungsional terpilih dilakukan pengujian terhadap total fenolik, flavonoid, aktivitas antioksidan, dan inhibisi  $\alpha$ -glukosidase. Konsentrasi etanol terpilih untuk mengekstrak daun jamblang adalah 95% dengan total fenolik sebanyak 80,43 mg GAE/g, total flavonoid sebanyak 29,28 mg QE/g, aktivitas antioksidan ( $IC_{50}$ ) sebesar 60,44 ppm, dan aktivitas inhibisi  $\alpha$ -glukosidase ( $IC_{50}$ ) sebesar 55,95 ppm. Minuman fungsional terpilih berdasarkan uji hedonik secara keseluruhan adalah ekstrak daun jamblang sebanyak 0,2% dan serbuk daun stevia sebanyak 0,1%. Minuman fungsional terpilih memiliki total fenolik sebanyak 0,19 mg GAE/mL, total flavonoid sebanyak 0,04 mg QE/mL, aktivitas antioksidan ( $IC_{50}$ ) sebesar 12015,94 ppm, dan aktivitas inhibisi  $\alpha$ -glukosidase ( $IC_{50}$ ) sebesar 20485,06 ppm.

Kata kunci: aktivitas antioksidan,  $\alpha$ -glukosidase, daun stevia, ekstrak daun jamblang, minuman fungsional

Referensi : 104 (2000-2019)

## ABSTRACT

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### CHARACTERISTIC OF FUNCTIONAL DRINK FROM JAMBLANG (*Syzygium cumini*) LEAVES EXTRACT WITH THE ADDITION OF STEVIA (*Stevia rebaudiana*) POWDER

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Functional drinks can be made from various plants, one of which is jamblang leaves. Jamblang leaves (*Syzygium cumini*) can prevent diabetes because it has antioxidant activity,  $\alpha$ -glucosidase inhibitory activity and contains alkaloids, flavonoids, and tannins. Stevia leaves (*Stevia rebaudiana*) contain steviosida compounds that can give a sweet taste to functional drinks. This study aims to utilize jamblang leaves and stevia leaves in the making of functional drinks as  $\alpha$ -glucosidase inhibitor. The study was divided into two parts, namely the introduction and main part. In the introduction, the ethanol solvent concentration was determined based on the total phenolic test, flavonoids content, antioxidant activity, and  $\alpha$ -glucosidase inhibition. The same test was also carried out to determine the characteristics of stevia leaves powder. The main research was conducted to determine the best formulation in making functional drinks. Determination was made on the composition of jamblang leaves extract as much as 0.1; 0.2; 0.3% and stevia powder concentrations of 0.04; 0.07; 0.1%. All formulations were tested for color, pH, total dissolved solids, and organoleptic testing. In the selected functional drink, total phenolic, flavonoid, antioxidant activity, and  $\alpha$ -glucosidase inhibitions were tested. Result showed that the chosen concentration of ethanol solvent to extract jamblang leaves was 95% with a total phenolic amount of 80.43 mg GAE/g, total flavonoids as much as 29.28 mg QE/g, antioxidant activity ( $IC_{50}$ ) of 60.44 ppm, and activity inhibition of  $\alpha$ -glucosidase ( $IC_{50}$ ) of 55.95 ppm. The functional drink selected for hedonic test as a whole are jamblang leaves extract as much as 0.2% and stevia leaves powder as much as 0.1%. Selected functional drink has a total phenolic of 0.19 mg GAE/mL, total flavonoids of 0.04 mg QE/mL, antioxidant activity ( $IC_{50}$ ) of 12015.94 ppm, and activity inhibition of  $\alpha$ -glucosidase ( $IC_{50}$ ) 20485.06 ppm.

Keywords :  $\alpha$ -glucosidase, antioxidant activity, beverage, jamblang leaves extract, stevia leaves

References : 104 (2000-2019)