

## PENGARUH PEMBERIAN TEH DAUN TEKELAN TERHADAP PENURUNAN KADAR GULA DARAH MENCIT

*[The Effect of Giving Chromolaena odorata L. Leaves Tea to Decrease Blood Glucose Levels in Mice]*

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### **ABSTRACT**

*The aims of this research was to determine brewing concentration of Chromolaena odorata leaves tea according to the highest of total phenolic content (TPC) and antioxidant activity, and the effectiveness of C.odorata leaves tea to decrease blood glucose levels of diabetic mice. This research was conducted in 2 stages, first one is to determine brewing concentration of tea which had the highest antioxidant activity and the second stage was giving tea beverage products to diabetic mice. The method used in this research was Randomized Completely Design (RCD) with six treatments of tea concentration which added 1.25%, 2.5%, 3.75%, 5%, 6.25% and 7.5%. The data were analyzed by analysis of variance (ANOVA) at 5% level using Co-Stat software. If there was any difference, the data tested further by Orthogonal Polynomial Method for TPC and activity antioxidant, and tested by Least Significant Difference (LSD) for blood glucose level and body weight of mice. The results of the first stage showed that adding concentration of C.odorata leaves tea gave significant difference on increased TPC and antioxidant activity. The highest result were obtained from tea beverage from a brewing concentration of 7.5% with 82.67% antioxidant activity and 18,221 mg GAE/g of ingredients. Based on the in vivo test, giving C.odorata leaves tea with a brewing concentration of 7.5% was effective to reduce the blood glucose level of diabetic mice with the decrease level was 65 mg/dL and minimize the body weight loss of diabetic mice by 1.57 g for 7 days.*

**Keywords:** *Chromolaena odorata, diabetic, tea.*

### **ABSTRAK**

Tujuan dari penelitian ini adalah untuk menentukan konsentrasi penyeduhan teh tekelan ditinjau dari kadar total fenolik dan aktivitas antioksidan tertinggi; serta menentukan efektivitas produk minuman teh daun tekelan terhadap penurunan kadar gula darah mencit diabetes. Penelitian ini dilakukan dalam 2 tahap, pertama yaitu penentuan konsentrasi penyeduhan teh yang memiliki aktivitas antioksidan tertinggi dan tahap kedua yaitu pemberian produk minuman teh pada mencit diabetes. Rancangan penelitian yang digunakan adalah Rancangan Acak Lengkap (RAL) dengan enam perlakuan penambahan konsentrasi teh yakni 1,25%, 2,5%, 3,75%, 5%, 6,25%, dan 7,5%. Data hasil pengamatan diuji dengan analisis keragaman (ANOVA) pada taraf 5% menggunakan software Co-Stat. Apabila terdapat beda nyata diuji lanjut dengan menggunakan polinomial ortogonal untuk uji fenolik total dan aktivitas antioksidan serta *Least Significant Difference* (LSD) untuk uji gula darah mencit dan berat badan mencit. Hasil penelitian tahap pertama menunjukkan bahwa penambahan konsentrasi penyeduhan teh daun tekelan memberikan pengaruh yang signifikan terhadap peningkatan kadar fenolik total dan aktivitas antioksidan. Hasil tertinggi diperoleh dari minuman teh dengan konsentrasi penyeduhan 7,5% menghasilkan aktivitas antioksidan sebesar 82,67% dan fenolik total sebesar 18,221 mg GAE/g bahan. Berdasarkan uji *in vivo*, pemberian minuman teh daun tekelan dengan konsentrasi penyeduhan 7,5% efektif menurunkan gula darah mencit diabetes sebesar 65 mg/dL dan meminimalisir penurunan berat badan mencit diabetes sebesar 1,57 g selama 7 hari.

**Kata kunci:** daun tekelan, diabetes, teh.