

## ABSTRACT

**LESTARI, P. 2014. TEST OF ANTIHYPERGLYCEMIC (*Syzigium polyanthum*) EFFECT EXTRACT ETHANOLIC COMBINATION OF EUGENIA (*Eugenia polyantha* Wight) AND SOURSOP (*Annona muricata*) IN MALE MICE ALLOXAN-INDUCED, THESIS, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITY SURAKARTA.**

*Eugenia* (*Syzigium polyanthum*) and soursop leaf (*Annona muricata*) are plants which used as antidiabetic drug. This study was aimed to determine effect and most effective dose for combination of ethanol extract of eugenia and soursop leaves in giving decrease effect of blood glucose level in alloxan-induced mice.

The study was conducted by using 35 male white mice, swiss, age 3-4 months, weight 20-30 grams. Mice were made diabetic using alloxan intraperitoneally. All mice were divided 7 groups, each consisting 5 mice which include group I: negative control, group II: positive control (glibenclamide), group III: eugenia leaf extract (2.62 mg/20 g bw), group IV: soursop leaf extract (3,5 mg/20 g bw), group V combination groups of eugenia and soursop leaf extracts 0,65 mg/20 g bw: 2,625 mg/20 g bw (25%:75%), group VI: 1.31 mg/20 g bw: 1.75 mg/20 g mm (50%:50%) and group VII: 1,96 mg/20 g bw: 0,875 mg/20 g mm (75%:25%). Blood glucose level was observed on 3<sup>rd</sup>, 7<sup>th</sup>, and 14<sup>th</sup> days, measured with glucometer GlucoDr. The results of blood glucose level was analyzed by one way ANOVA ( $p < 0.05$ ), followed by post hoc test.

The results showed that administration of combination dose of eugenia and soursop leaves in all treatment groups could lower blood glucose level comparable with glibenclamide ( $p < 0.05$ ). Combination dose of eugenia and soursop leaf extracts 1.96 mg/20 g bw: 0,875 mg/20 g bw (75%:25%) gave the most effective lowering effect compared to all treatment groups.

Keywords: *Syzigium polyanthum*., *Annona muricata*., Alloxan, blood glucose.

# **BAB I**

## **PENDAHULUAN**

### **A. Latar Belakang Masalah**

Diabetes Mellitus adalah gangguan metabolisme yang ditandai dengan hiperglikemia yang berhubungan dengan abnormalisasi metabolisme karbohidrat, lemak, protein, yang disebabkan oleh penurunan sensitivitas insulin atau keduanya (Sukandar 2008).

Diabetes melitus (DM) adalah suatu sindroma klinik yang ditandai oleh poliuria, polidipsia, dan polifagia, disertai peningkatan kadar glukosa darah atau hiperglikemia (glukosa puasa  $\geq 200$  mg/dl atau postprandial  $\geq 200$  mg/dl atau glukosa sewaktu  $\geq 200$  mg/dl). Bila DM tidak segera diatasi akan terjadi gangguan metabolisme lemak dan protein, dan resiko timbulnya gangguan mikrovaskuler atau makrovaskuler meningkat (Suherman 2007).

Diabetes mellitus pada dasarnya dapat ditangani dengan berolahraga secara teratur, mengurangi kelebihan berat badan, menghindari stress, menjaga kesehatan tubuh, menghindari trauma untuk mencegah infeksi, mengatur pola makan dan mengkonsumsi obat antidiabetes oral dan atau suntikan insulin secara teratur. Tetapi penanganannya tidak semudah yang dibayangkan karena belum tentu penderita DM rajin berolahraga, mengatur pola makan yang sehat. Di samping itu, obat yang beredar dipasaran relatif mahal karena penggunaannya jangka panjang dan sering menimbulkan efek samping yang tidak diharapkan.