

ABSTRAK

Arlina, 2026, UJI AKTIVITAS ANTIHIPERGLIKEMIK EKSTRAK ETANOL DAUN JATI (*Tectona grandis* L.) PADA MENCIT PUTIH JANTAN YANG DIINDUKSI DIET TINGGI FRUKTOSA, SKRIPSI, FAKULTAS FARMASI, UNIVERSITAS SETIA BUDI, SURAKARTA. Dibimbing oleh apt. Jena Hayu Widyasti, M.Farm. dan apt. Vivin Nopiyanti M.Sc.

Diabetes melitus tipe 2 merupakan penyakit metabolik kronis yang ditandai dengan hiperglikemia akibat resistensi insulin dan penurunan fungsi sel beta pankreas. Peningkatan prevalensi diabetes melitus mendorong pengembangan terapi alternatif berbasis bahan alam. Daun jati (*Tectona grandis* L.) diketahui mengandung metabolit sekunder seperti flavonoid, tanin, dan saponin yang berpotensi sebagai agen antihiperglikemik. Penelitian ini bertujuan untuk mengetahui aktivitas antihiperglikemik, menentukan dosis efektif, serta menetapkan kadar flavonoid total ekstrak etanol daun jati pada mencit putih jantan yang diinduksi diet tinggi fruktosa.

Ekstrak etanol daun jati diperoleh melalui metode maserasi menggunakan etanol 70% dan distandarisasi sesuai Farmakope Herbal Indonesia. Sebanyak 30 ekor mencit putih jantan dibagi menjadi enam kelompok, yaitu kontrol normal, kontrol negatif, kontrol positif metformin 500 mg/kgBB, serta tiga kelompok perlakuan ekstrak dengan dosis 150, 300, dan 600 mg/kgBB. Parameter yang diamati meliputi kadar glukosa darah dan perubahan berat badan mencit. Data dianalisis dengan uji normalitas. Karena data tidak berdistribusi normal, analisis dilanjutkan menggunakan uji *Kruskal–Wallis* dan uji *Mann–Whitney* sebagai uji lanjut.

Hasil penelitian menunjukkan bahwa ekstrak etanol daun jati memiliki aktivitas antihiperglikemik yang signifikan dibandingkan kontrol negatif. Dosis 300 mg/kgBB merupakan dosis paling efektif dan menunjukkan hasil yang sebanding dengan metformin. Kadar flavonoid total ekstrak sebesar 1,70146% diduga berperan dalam aktivitas antihiperglikemik yang diamati pada mencit uji.

Kata kunci: *Tectona grandis* L., antihiperglikemik, diabetes melitus tipe 2, diet tinggi fruktosa, flavonoid

ABSTRACT

Arlina, 2026, ANTIHYPERGLYCEMIC ACTIVITY TEST OF ETHANOL EXTRACT OF TEAK LEAVES (*Tectona grandis* L.) IN MALE WHITE MICE INDUCED WITH HIGH FRUCTOSE DIET, FACULTY OF PHARMACY, SETIA BUDI UNIVERSITAS, SURAKARTA. Supervised by apt. Jena Hayu Widyasti, M.Farm. and apt. Vivin Nopiyanti M.Sc.

Type 2 diabetes mellitus is a chronic metabolic disease characterised by hyperglycaemia due to insulin resistance and decreased pancreatic beta cell function. The increase in the prevalence of diabetes mellitus has encouraged the development of alternative therapies based on natural ingredients. Teak leaves (*Tectona grandis* L.) are known to contain secondary metabolites such as flavonoids, tannins, and saponins that have potential as antihyperglycaemic agents. This study aims to determine the antihyperglycaemic activity, establish the effective dose, and quantify the total flavonoid content of teak leaf ethanol extract in male white mice induced with a high-fructose diet.

Teak leaf ethanol extract was obtained via maceration using 70% ethanol and standardised according to the Indonesian Herbal Pharmacopoeia. Thirty male white mice were divided into six groups: normal control, negative control, positive control with metformin 500 mg/kgBW, and three treatment groups with extract doses of 150, 300, and 600 mg/kgBW. The parameters observed included blood glucose levels and changes in body weight of the mice. Data were analysed using normality tests. Since the data were not normally distributed, analysis was continued using the Kruskal–Wallis test and Mann–Whitney test as follow-up tests.

The results showed that ethanol extract of teak leaves had significant antihyperglycaemic activity compared to the negative control. A dose of 300 mg/kgBW was the most effective dose and showed results comparable to metformin. The total flavonoid content of the extract was 1,70146%, which was thought to play a role in the antihyperglycaemic activity observed in the test mice.

Keywords: *Tectona grandis* L., antihyperglycemic, type 2 diabetes mellitus, high fructose diet, flavonoids