# Pengaruh Ekstrak Etanol Daun Tin (Ficus carica L.) terhadap Kadar Gula Darah Puasa dan Gambaran Histopatologi Hati Tikus Diabetes yang Diinduksi Streptozotocin = Effect of Ethanol Extract of Tin Leaves (Ficus carica L.) on Fasting Blood Glucose Levels and Histopathological Features of Rat Liver Diabetic induced by Streptozotocin

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Abstrak

Latar belakang: Diabetes mellitus merupakan penyakit metabolik kronik yang terus meningkat secara global. Pengobatan yang panjang, mahal, dan memiliki efek samping membuat penelitian tentang pengobatan herbal diabetes terus dikembangkan. Sejumlah senyawa biokimia ekstrak etanol daun tin berpotensi sebagai antidiabetes, tetapi penelitian mengenai efek protektifnya terhadap hati tikus diabetes belum banyak dilakukan.

Metode: Penelitian eksperimental ini menggunakan 30 ekor tikus wistar yang terbagi dalam 6 kelompok. Streptozotocin 40 mg/kgBB diberikan secara intraperitoneal dan diberi perlakuan sesuai kelompok. Gula darah puasa diukur setiap 2 kali seminggu. Hati tikus diambil dan diamati di bawah mikroskop pada perbesaran 100x dan 400x. Persentase perubahan sel hepatosit dihitung, meliputi sel normal, degenerasi hidropik, degenerasi melemak, dan nekrosis.

Hasil: Data dianalisis menggunakan uji Kruskal-Wallis dan dilanjutkan uji Mann-Whitney. Hasil uji Kruskal-Wallis, pemberian ekstrak etanol daun tin pada tikus diabetes yang diinduksi streptozotocin berpengaruh nyata terhadap kadar gula darah puasa ($p<0,05$). Terjadi perubahan gambaran histopatologi hati, meliputi perubahan sel hepatosit normal, degenerasi hidropik, dan degenerasi melemak. Terdapat perbaikan gambaran histopatologi hati pada kelompok perlakuan ekstrak etanol daun tin dosis 200 mg/kgBB, 400 mg/kgBB, dan 800 mg/kgBB terhadap kontrol negatif.

Kesimpulan: Pemberian ekstrak etanol daun tin berpengaruh dalam menurunkan kadar gula darah puasa tikus diabetes, dengan dosis 800 mg/kgBB menunjukkan rata-rata persentase penurunan terbesar (53,61 ± 13,84%) dibandingkan kelompok lainnya. Pemberian ekstrak etanol daun tin juga berpengaruh pada perubahan gambaran histopatologi hati tikus diabetes

.....Introduction: Diabetes mellitus is a chronic metabolic disease that continues to increase globally. Long and expensive treatment with its side effects influence the studies on diabetes herbal medicine continue to be developed. A number of biochemical compounds from ethanol extract of fig leaves have potential as antidiabetics, but studies on their protective effects on the liver of diabetic rats have not been carried out.

Method: This experimental study used 30 wistar rats divided into 6 groups. Streptozotocin 40 mg/kgBW was administered intraperitoneally. Fasting blood glucose levels were measured twice a week. The rat liver was taken and observed under a microscope at 100x and 400x magnification. Hepatocyte cell change

percentages were observed, including normal cells, hydropic degeneration, fatty degeneration, and necrosis. Data were analyzed using the Kruskal-Wallis test and continued with the Mann-Whitney test.

Result: The results of the Kruskal-Wallis test, administration of ethanol extract of fig leaves to diabetic rats induced by streptozotocin had a significant effect on fasting blood glucose levels ($p<0.05$). Changes in the histopathological features of the liver, including changes in normal hepatocyte cells, hydropic degeneration, and fatty degeneration. There was an improvement in the histopathological feature of the liver in the treatment group of tin leaf ethanol extract at doses of 200 mg/kgBW, 400 mg/kgBW, and 800 mg/kgBW against negative control group.

Conclusion: Administration of fig leaf ethanol extract had an effect on reducing fasting blood glucose levels in diabetic Wistar rats, with a dose of 800 mg/kgBW showing the largest average percentage decrease (53,61 ± 13,84%) compared to other groups. Administration of tin leaf ethanol extract also affected changes in the histopathological features of diabetic rats liver