

PENGARUH EKSTRAK ETANOL DAUN KEMBANG BULAN (*Tithonia diversifolia*) TERHADAP KADAR UREUM-KREATININ PADA TIKUS SPRAGUE DAWLEY YANG DIINDUKSI NICOTINAMIDE-STREPTOZOTOCIN

ABSTRAK

Latar Belakang: Penyakit ginjal diabetes merupakan penyebab utama gagal ginjal yang ditandai dengan peningkatan kadar ureum dan kreatinin. Ekstrak daun *Tithonia diversifolia* merupakan ramuan herbal yang digunakan pada masyarakat untuk penyakit diabetes melitus dan secara ilmiah mampu menurunkan kadar glukosa darah.

Tujuan: Tujuan penelitian ini adalah untuk mengetahui efek perlindungan ekstrak daun *Tithonia diversifolia* dalam mencegah peningkatan kadar ureum dan kreatinin pada tikus diabetes.

Metode penelitian: Penelitian ini merupakan penelitian eksperimental dengan *post test only with control group design*. Dua puluh ekor tikus putih dibagi dalam 5 kelompok. Kelompok 1: kontrol sehat (SO, n=4), kelompok 2: kontrol sakit (SN, n=4), kelompok 3 (n=4), kelompok 4 (n=4), dan kelompok 5 (n=4) adalah kelompok sakit dan diberikan ekstrak etanol daun kembang bulan 25 mg/kgBB, 50 mg/kgBB, dan 100 mg/kgBB selama 28 hari.

Hasil: Kadar ureum pada kelompok 1,2,3,4 dan 5 masing-masing adalah $28,8 \pm 1,3$; $75,0 \pm 14,3$; $59,2 \pm 17,5$; $51,0 \pm 15,7$; dan $35,0 \pm 3,6$ mg/dL. Selanjutnya kadar kreatinin pada kelompok 1,2,3,4 dan 5 masing-masing $0,9675 \pm 0,033$; $1,1625 \pm 0,057$; $1,1325 \pm 0,144$; $1,025 \pm 0,075$; dan $0,9875 \pm 0,106$ mg/dL. Uji statistik menunjukkan bahwa terdapat perbedaan kadar ureum-kreatinin kelompok 5 dengan kelompok 2 ($p=0,000$; $p=0,016$), sedangkan antara kelompok 1 tidak ada perbedaan ($p=0,487$; $p=0,762$).

Kesimpulan: Ekstrak daun *Tithonia diversifolia* dengan dosis 100 mg/KgBB dapat mencegah peningkatan kadar ureum-kreatinin pada tikus diabetes.

Kata kunci: Daun kembang bulan, *Tithonia diversifolia*, ureum, kreatinin, *Stress Oxidative*

THE EFFECT OF KEMBANG BULAN (*Tithonia diversifolia*) ETHANOL EXTRACT ON UREA-CREATININE LEVELS IN SPRAGUE DAWLEY RATS INDUCED BY NICOTINAMIDE-STREPTOZOTOCIN

ABSTRACT

Background: Diabetic kidney disease is a major cause of kidney failure characterized by increased levels of urea and creatinine. *Tithonia diversifolia* leaf extract is an herb that is used for diabetes mellitus in the community and is scientifically able to reduce blood glucose levels.

Goals: The purpose of this study was to determine the protective effect of *Tithonia diversifolia* leaf extract to prevent the increase in urea and creatinine levels in diabetic rats.

Study Method: Twenty-five Sprague Dawley rats were divided into 5 groups, the first group was a healthy control group, group 2 was a diabetic control group, while groups 3,4, and 5 were diabetes rats with ethanol extract of *Tithonia diversifolia* leaves at a dose, 25; 50; and 100 mg/kg BW for 28 days. Induction of diabetes with nicotinamide (230 mg/kg BW) and streptozotocin (65 mg/kg BW). The rat blood serum was taken and the urea-creatinine was examined by the enzymatic method. Data analysis used the ANOVA test and LSD test.

Result: The urea levels in groups 1,2,3,4 and 5 were respectively 28.8±1.3; 75.0±14.3; 59.2±17.5; 51.0±15.7; and 35.0±3.6 mg/dL. Furthermore, the creatinine levels in groups 1,2,3,4 and 5 were respectively 0,9675 ± 0,033; 1,1625 ± 0,057; 1,1325 ± 0,144; 1,025 ± 0,075; dan 0,9875 ± 0,106 mg/dL. The statistical test showed that there were differences in urea-creatinine levels in group 5 with groups 2 (p=0.000; p=0.016), while there was no difference between groups 1 (p=0.487;p=0.762).

Conclusion: *Tithonia diversifolia* leaf extract at a dose of 100 mg/kg BW can prevent the increase in urea-creatinine levels in diabetic rats.

Keywords: Daun kembang bulan, *Tithonia diversifolia*, blood urea nitrogen (BUN), creatinine, *Stress Oxidative*