

**FAKULTAS KEDOKTERAN  
UNIVERSITAS PEMBANGUNAN NASIONAL “VETERAN” JAKARTA**

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**EVALUASI AKTIVITAS HEPATOPROTEKTIF EKSTRAK BUAH  
KELOR (*Moringa oleifera* fruits) PADA GAMBARAN HISTOPATOLOGI  
HATI TIKUS (*Rattus norvegicus*) GALUR *Sprague Dawley* MODEL  
OBESITAS**

RINCIAN HALAMAN (xvii + 111 halaman, 24 tabel, 19 gambar, 4 lampiran)

**ABSTRAK**

**Introduksi:** Dengan peningkatan prevalensi yang sangat pesat, Penyakit Hati Berlemak Non-Alkohol (PHBNA) kini menjadi salah satu kontributor penting beban kesehatan global. Kondisi ini dipengaruhi oleh tingginya prevalensi obesitas, pola makan tinggi kalori, dan gaya hidup sedentari. Diet tinggi lemak memicu akumulasi asam lemak bebas di hati, yang menimbulkan kerusakan hepatoseluler melalui mekanisme stres oksidatif. Buah Kelor (*Moringa oleifera* fruits) kaya akan flavonoid, polifenol, dan alkaloid yang berperan sebagai agen hepatoprotektif. **Metode:** Studi ini merupakan *true experimental* dengan pendekatan *post-test only control group* menggunakan 30 ekor tikus (*Rattus norvegicus*) galur *Sprague Dawley*. Hewan coba kemudian dibagi ke menjadi lima kelompok, tiga kelompok kontrol dan dua kelompok perlakuan yang diberi intervensi berupa ekstrak buah kelor dosis 500 mg/KgBB satu kali sehari dan dua kali sehari. Evaluasi gambaran histopatologi dilakukan analisis menggunakan *One Way ANOVA*, dan dilanjutkan dengan *Post-Hoc Tukey*. **Hasil:** Ekstrak buah kelor hasil maserasi mampu menurunkan derajat steatosis berdasarkan Skor Aktivitas *Non-Alcoholic Fatty Liver Disease* (NAS), dengan efektivitas tertinggi pada dosis 500 mg/KgBB dua kali sehari, diikuti dengan vitamin C serta pemberian dosis 500 mg/KgBB satu kali sehari. **Kesimpulan:** Antioksidan dalam ekstrak buah kelor menunjukkan aktivitas hepatoprotektif melalui reduksi stress oksidatif, penghambatan peroksidasi lipid, serta penurunan kerusakan struktural hepatosit pada gambaran histopatologi tikus *Sprague Dawley*.

**Daftar Pustaka** : 106 (2013-2025)

**Kata Kunci** : *Ballooning*, Buah Kelor, Histopatologi, Inflamasi Lobular Steatosis

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**EVALUATION OF THE HEPATOPROTECTIVE EFFECTS OF MORINGA OLEIFERA FRUITS EXTRACT ON LIVER HISTOPATHOLOGY IN HIGH-FAT-DIET-INDUCED OBESE SPRAGUE DAWLEY STRAIN RATS**

*PAGE DETAILS (xvii + 111 pages, 24 tabels, 19 figures, 4 appendices)*

**ABSTRACT**

**Introduction:** As a primary contributor to the global health burden, Non-alcoholic fatty liver disease (NAFLD) has emerged as one of the fastest-rising metabolic disorders worldwide, largely driven by the rising obesity rates, high-calorie dietary pattern, and increasingly sedentary lifestyle. High-fat diets promotes the deposition of free fatty acid within the hepatic tissue, initiating oxidative stress-mediated hepatocellular injury. Moringa oleifera fruits are abundant in bioactive constituents, particularly flavonoids, polyphenols, and alkaloids, which exhibit notable hepatoprotective properties. **Methods:** This study is a true experimental design with a post-test-only control group approach with 30 male Sprague Dawley strain rats (*Rattus norvegicus*). The rats will be random allocated into five groups, including three control groups and two intervention groups subjected to Moringa oleifera fruit extract at a dosage of 500 mg/KgBW administered once or twice a day. The evaluation of histopathological findings will be analyzed using One Way ANOVA, followed by Tukey’s Post-Hoc. **Results:** Macerated Moringa oleifera fruit extract demonstrated a reduction in steatosis severity, as assessed by the Non-Alcoholic Fatty Liver Disease Activiy Score (NAS). The most prominent effect was observed at a dosage of 500 mg/KgBW administered twice a day, followed by vitamin C and the one a day 500 mg/KgBW regimen. **Conclusion:** The antioxidant constituents of Moringa oleifera fruit extract exhibit hepatoprotective activity through the reduction of oxidative stress, inhibition of lipid peroxidation, and reduction of hepatocyte structural degeneration, as evidenced by histopathological findings in Sprague Dawley rats.

**Bibliography** : 106 (2013-2025)

**Keywords** : Ballooning, Histopathology, Lobule Inflammation, Moringa oleifera fruits, Steatosis