

## ABSTRACT

Afina Ghaida Mazaya. 24020121130078. Histomorphometry of the Kidneys of Diabetic Sprague-Dawley Rats after Administration of Durian Peel Ethanol Extract. Under the guidance of Sri Isdadiyanto and Sunarno.

Diabetic nephropathy is one of the most common microvascular complications of diabetes mellitus. Numerous studies have investigated kidney tissue damage in diabetes induced by alloxan. The exploration of herbal plants has become an alternative approach to repair kidney damage. Durian peel is a local biological material that contains various metabolites with potential antioxidant and anti-inflammatory properties. However, the effect of durian peel on diabetic kidney disease has not been comprehensively studied. This study aimed to analyze the effect of ethanol extract of durian peel on the histological structure of diabetic white rat kidneys, observed through variables such as glomerular diameter, Bowman's capsule space, proximal convoluted tubule epithelial thickness, and distal convoluted tubule epithelial thickness. This study used 25 male Sprague Dawley rats divided into five groups under a completely randomized design (CRD): a normal group (K0), a diabetic group (K1), and treatment groups administered durian peel ethanol extract (DPEE) at doses of 100, 150, and 200 mg/200 g body weight (K2, K3, and K4, respectively). Data were analyzed using ANOVA followed by Duncan's Post Hoc test. The results showed that administration of DPEE had a significant effect on glomerular diameter and Bowman's capsule space, but had no significant effect on the epithelial thickness of proximal and distal convoluted tubules. The conclusion of this study was that DPEE had the potential to repair structural damage to the glomerulus and Bowman's capsule and did not have a direct effect on the proximal and distal tubules of the kidneys of diabetic white rats.

*Keywords: hyperglycemia, diabetic nephropathy, glomerulus, antidiabetic*