

## ABSTRACT

Intan Prasita Aulia Devi. 24020121130085. **Microanatomic Structure of the Renal of White Rats (*Rattus norvegicus*) of The Wistar Strain Exposed to Polyethylene Terephthalate Microplastics.** Under the supervision of Muhammad Anwar Djaelani and Rasyidah Fauzia Ahmar.

Polyethylene Terephthalate (PET) is a type of plastic widely used as a basic material for a product. Excessive use of PET increases the risk of contamination from microplastics, which are plastic particles measuring less than 5 mm. Microplastics can accumulate in the kidneys, but research on the impact of PET microplastics on renal health is still limited. This study aimed to analyze the effect of PET microplastic exposure on the kidney index and kidney microanatomy white rats (*Rattus norvegicus*). The research was conducted using an experimental method with a completely randomized design, consisting of four groups P0 (control), P1 (0.005 mg PET/2 mL), P2 (0.05 mg PET/2 mL), and P3 (0.25 mg PET/2 mL), which received oral treatment for 24 days. The kidney index was calculated based on body weight and kidney weight data. Glomeruli, proximal convoluted tubules, distal convoluted tubules, and Bowman's capsule were analyzed quantitatively by measuring the width of each variable, and qualitatively by observing the histopathology of microscopic slides. Data were analyzed using ANOVA, Kruskal-Wallis, and descriptive analysis. The results showed that all quantitative variables showed no significant differences ( $p > 0.05$ ), but cell damage scoring for all variables showed significant differences ( $p < 0.05$ ). These findings indicate that exposure to Polyethylene Terephthalate (PET) microplastics can cause changes in kidney microanatomy.

**Keywords:** *Plastic, Kidney, Glomerulus, Tubule*