

ABSTRACT

Novita Tri Apsari. 24020121130119. Microanatomical Structure of the Testes of Male Wistar Strain White Rats (*Rattus norvegicus*) After Exposure to *Polyethylene Terephthalate* (PET) in the Form of Microplastics. Under the guidance of Agung Janika Sitasiwi and Rasyidah Fauzia Ahmar.

Microplastics are plastic particles smaller than 5 mm that are toxic and have the potential to cause biological effects on organisms. *Polyethylene terephthalate* (PET) is a type of plastic widely used in beverage bottles and packaging. This study aimed to analyze the effect of PET microplastic administration on the microanatomical structure of Wistar strain white rat testicles. This study used a Completely Randomized Design (CRD) with 20 Wistar strain white rats divided into 4 treatment groups and 5 replicates. The treatment in this study was carried out for 24 days, which included a control (P0), low dose treatment (P1) with a microplastic dose of 0,005 mg/animal/day, a medium dose treatment (P2) with a microplastic dose of 0,05 mg/animal/day, and a high dose treatment (P3) with a microplastic dose of 0,25 mg/animal/day. The variables observed were body weight, testicular weight, gonadosomatic index, seminiferous tubule diameter, and seminiferous tubule diameter damage score. The data were analyzed using ANOVA with a significance level of 5%. Damage scores were analyzed using Kruskal-Wallis and Mann-Whitney U. The results showed that PET microplastic administration did not show significant differences ($P>0.05$) in body weight, testicular weight, gonadosomatic index, and seminiferous tubule diameter, but did show significant differences ($P<0.05$) in seminiferous tubule structure, as indicated by significant differences in damage scores between the treatment and control groups. The conclusion of this study is that microplastic administration has the potential to damage the microanatomical structure of rat testes, as indicated by increased damage to the seminiferous tubules.

Keywords: *GSI, seminiferous tubule diameter, testicular damage score, polyethylene terephthalate*