

ABSTRACT

Fathia Rizki Amalia. 24020121120028. Exposure to *Polyethylene* (PET) Microplastics on Histological Structure and Hepatosomatic Index (HSI) of Female Wistar Rat (*Rattus norvegicus*) Hepar. Under the guidance of Silvana Tana and Rizki Sandhi Titisari.

Microplastics are micro-sized plastic waste and their existence poses a serious threat to the environment and health. Exposure to microplastics can hurt the hepatic organ which plays a role in metabolism and detoxification. Microplastics can have an impact on changes in HSI, which shows the proportion of hepatic weight to body weight, as well as damage to hepatic histology. The purpose of this study was to examine and analyze the effect of microplastic exposure on the histology and Hepatosomatic Index (HSI) of white rat hepar. The research design used was a completely randomized design (CRD) using 20 female white rats. The treatment groups included control (P), given 0.0005 mg/2 ml microplastic solution (P1), given 0.005 mg/2 ml microplastic solution (P2), given 0.25 mg/2 ml microplastic solution (P3). The variables observed were Hepatosomatic Index (HSI), hepatocyte diameter and cell damage. Data were tested with One-way ANOVA at 95% confidence level ($P < 0.05$). The results of statistical analysis using ANOVA showed that microplastic exposure did not give a significant difference to the HSI value, but showed a significantly different value for the diameter of hepatocytes. Histology showed some cell damage, such as fatty degeneration, pycnosis, karyorrhexis and karyolysis.

Keywords: *microplastics, PET, HSI, hepatocyte diameter, necrosis.*