

ABSTRACT

Belina Mahardika Pratiwi. 24020120140102. Histological Structure of Female Wistar Rat (*Rattus norvegicus* L.) Liver after Administration Beet Powder (*Beta vulgaris* L.). Under the guidance of Silvana Tana and Sunarno.

The beetroot tuber is a plant commonly used as a traditional medicine and health supplement. This plant contains dietary fiber and has high levels of betalain pigments, flavonoids, and polyphenols, which possess strong antioxidant activity, making it potentially beneficial as an antioxidant for the liver to protect and regenerate hepatocytes. This study aims to analyze the effect of beetroot tuber flour on liver histology. The study used a Completely Randomized Design (CRD) with 30 female white rats divided into 5 treatment groups and 6 replications. The treatment groups included a control group (P0), a group given 10 mg/rat/day of beetroot tuber flour (P1), a group given 20 mg/rat/day of beetroot tuber flour (P2), a group given 30 mg/rat/day of beetroot tuber flour (P3), and a group given 40 mg/rat/day of beetroot tuber flour (P4). The observed variables were hepatocyte diameter, hepatosomatic index (HSI), and hepatocyte damage score in the liver. The data were analyzed using one-way ANOVA at a 95% confidence level ($P < 0.05$). The results of the ANOVA test showed no significant differences. The data for the liver cell damage score were analyzed using the non-parametric, namely Kruskal-Wallis test, which also showed no significant differences. The results of this study demonstrated that beetroot flour had the potential to be a hepatoprotector, as evidenced by the presence of binucleated cells in the liver histology of female white rats. The conclusion of this study was that beetroot flour at various doses did not have the potential to cause changes in the histological structure of the liver of female white rats.

Keywords: *antioxidants, liver diameter, hepatoprotective, damage score*