

## ABSTRACT

Putrie Fahira Banu. 24020121190051. **The Potential of *Madura Kencing Manis* Herbal Remedies in Improving Testicular Structural and Functional Reproductive Performance of Diabetic White Rats (*Rattus norvegicus*)**. Under the guidance of Agung Janika Sitasiwi and Kasiyati.

*Madura kencing manis* herbal remedies is a traditional herbal commonly used to treat diabetes, but until now, there is no definite scientific evidence. This study aims to evaluate and analyse the potential effects of *Madura kencing manis* herbal remedies on the structural and functional aspects of rat reproduction organs, observed through histomorphometry, SOD levels, and protein molecular weight. The study used male Wistar rats,  $\pm 2$  months old, as a test model for diabetes-induced with streptozotocin (STZ). The rats were divided into 5 groups: the negative control group was given aquadest, the positive diabetes group was given metformin (P1), and the diabetes treatment group was given *Madura kencing manis* herbal remedies at doses of 5, 10, and 15g/kg body weight (P2, P3, P4) for 21 days. Variables measured included testicular relative weight seminiferous tubule diameter, gonadosomatic index, spermatogenesis stage, percentage of cell damage, superoxide dismutase (SOD) levels, and protein molecular weight. Data were tested for normality and homogeneity, showing normal and homogeneous results. An ANOVA test was conducted with a 95% confidence level. Duncan's post hoc test followed the results of significant differences. The results showed that the herbal remedies had a repair effect on the testicular tissue of diabetic rats. This study concludes that phytochemical compounds from *Madura kencing manis* herbal remedies could improve the structure and function of reproductive organs in diabetic rats.

**Keywords:** *madura herbal remedies, seminiferous tubules, superoxide dismutase, spermatogenesis*

