

**PENGARUH EKSTRAK DAUN ASAM JAWA (*Tamarindus indica* L.)  
TERHADAP MOTILITAS SPERMA TIKUS PUTIH (*Rattus norvegicus*)  
JANTAN DIABETIK YANG DIINDUKSI ALOKSAN**

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**ABSTRAK**

Diabetes melitus (DM) dapat mengakibatkan komplikasi-komplikasi yang salah satunya adalah gangguan sistem reproduksi pria. DM menginduksi peningkatan *Reactive Oxygen Species* (ROS) yang mampu mengganggu proses pematangan sperma dan menurunkan persentase motilitas spermatozoa. Daun asam jawa diketahui memiliki zat antioksidan yang mampu mengurai radikal bebas. Tujuan penelitian adalah mengetahui efek pemberian ekstrak daun asam jawa terhadap motilitas sperma tikus diabetik. Metode penelitian adalah *true experimental* menggunakan *post-test only control group design*. Subjek hewan coba adalah tikus putih galur Wistar jantan berjumlah 30 ekor berusia 12 minggu dengan bobot 200-210 gram. Subjek dipilih acak dan dibagi ke 5 kelompok : K- (pakan dan minum standar), K+ (aloksan dosis 150mg/kgBB), P1 (aloksan dan dosis ekstrak 75mg/kgBB), P2 (aloksan dan dosis ekstrak 150mg/kgBB) dan P3 (aloksan dan dosis ekstrak 300mg/kgBB). Penelitian dilakukan selama 38 hari kemudian tikus diterminasi dan dilakukan pembedahan. Hasil perhitungan motilitas sperma dianalisis menggunakan uji statistik non-parametrik Kruskal-Wallis dan diperoleh nilai signifikansi 0.032 ( $p < 0.05$ ) yang menunjukkan ada pengaruh ekstrak daun asam jawa terhadap motilitas sperma tikus jantan diabetik. Kesimpulan penelitian adalah pemberian ekstrak daun asam jawa dengan dosis 75mg/kgBB dan 150mg/kgBB menunjukkan persentase motilitas sperma tikus yang lebih baik dan berbeda signifikan dengan tikus jantan diabetik yang diinduksi aloksan sedangkan pemberian dosis 300mg/kgBB menunjukkan persentase motilitas sperma tikus yang lebih baik tetapi tidak berbeda signifikan. Hal ini menunjukkan pemberian ekstrak daun asam jawa dapat mencegah penurunan motilitas sperma tikus akibat DM dengan dosis efektif yaitu 75mg/kgBB.

**Kata kunci** : Diabetes melitus, ekstrak daun asam jawa, motilitas spermatozoa, ROS, tikus galur wistar.

**EFFECT OF TAMARIND LEAF EXTRACT (*Tamarindus indica* L.) ON  
SPERMA MOTILITY OF ALLOXAN-INDUCED DIABETIC MALE RATS  
(*Rattus norvegicus*)**

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**ABSTRACT**

Diabetes mellitus (DM) can lead to complications, one of which is male reproductive system disorders. DM induces an increase in Reactive Oxygen Species (ROS) which can interfere with the sperm maturation process and reduce the percentage of spermatozoa motility. Tamarind leaves are known to have antioxidant substances that can break down and counteract free radicals. The aims of the research is to determine the effect of administering tamarind leaf extract on the sperm motility of diabetic rats. The research method is true experimental with post-test only control group design. Subjects were 30 male Wistar strain rats aged 12 weeks with a body weight of 200-210 grams. Subjects were randomly selected and divided into 5 groups: K- (standard food and drink), K+ (alloxan dose 150mg/kg bw), P1 (alloxan and extract dose 75mg/kg bw), P2 (alloxan and extract dose 150mg/kg bw), and P3 (alloxan and extract dose 300mg/kg bw). The study was conducted for 38 days and then the rats were terminated and dissected. The results of the calculation of sperm motility were analyzed with the Kruskal-Wallis non-parametric statistical test and obtained a p value of 0.032 ( $p < 0.05$ ) which indicates that there is an effect of tamarind leaf extract on the sperm motility of diabetic male rats. The conclusion of this study is that the administration of tamarind leaf extract at a dose of 75mg/kg bw and 150mg/kg bw shows a better percentage of rat sperm motility and is significantly different from alloxan-induced diabetic male rats while the administration of a dose of 300mg/kg bw shows a better percentage of rat sperm motility but is not significantly different. This shows that the administration of tamarind leaf extract can prevent the decrease in sperm motility of rats due to DM with an effective dose of 75mg/kg bw.

**Keywords** : Diabetes mellitus, ROS, sperm motility, tamarind leaf extract, wistar rats.