ABSTRAK

PENGARUH PEMBERIAN EKSTRAK ETANOL DAUN SIRIH (*Piper betle* L.) TERHADAP KETEBALAN ENDOMETRIUM MENCIT BETINA (*Mus musculus* L.) PADA FASE ESTRUS

Oleh

WAYAN MITRI APRILIA SARI

Endometrium merupakan lapisan mukosa uterus yang mengalami perubahan dinamis selama siklus reproduksi dan berperan penting dalam proses implantasi. Ketebalan endometrium pada fase estrus sangat dipengaruhi oleh hormon estrogen dan menjadi indikator penting keberhasilan reproduksi. Beberapa bahan alami, termasuk daun sirih (*Piper betle* L.), diketahui mengandung senyawa fitokimia yang berpotensi memengaruhi sistem reproduksi. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian ekstrak etanol daun sirih terhadap ketebalan endometrium serta menentukan dosis yang paling efektif pada mencit betina (*Mus musculus* L.) fase estrus. Penelitian menggunakan Rancangan Acak Lengkap (RAL) dengan empat perlakuan, yaitu kontrol dan tiga dosis ekstrak etanol daun sirih (9 mg/30gBB, 12 mg/30gBB, dan 15 mg/30gBB), masing-masing dengan lima ulangan. Ekstrak diberikan secara oral selama 14 hari. Parameter yang diamati adalah ketebalan endometrium melalui pengukuran histopatologi preparat uterus menggunakan mikroskop cahaya. Data dianalisis menggunakan uji Kruskal–Wallis. Hasil penelitian menunjukkan bahwa rata-rata ketebalan endometrium antar kelompok perlakuan tidak menunjukkan perbedaan yang signifikan secara statistik ($p > 0,05$). Meskipun terdapat variasi nilai ketebalan secara deskriptif, pola penurunan ketebalan endometrium tidak konsisten seiring peningkatan dosis. Hal ini diduga dipengaruhi oleh dominasi estrogen endogen pada fase estrus serta dosis dan durasi pemberian ekstrak yang belum optimal. Berdasarkan penelitian ini dapat disimpulkan bahwa pemberian ekstrak etanol daun sirih belum mampu secara signifikan menurunkan ketebalan endometrium mencit betina pada fase estrus dan belum diketahui dosis yang paling efektif.

Kata kunci: endometrium, *Piper betle* L., fase estrus, mencit betina

ABSTRACT

THE EFFECT OF ETHANOL EXTRACT OF BETEL LEAF (*Piper betle* L.) ON ENDOMETRIAL THICKNESS OF FEMALE MICE (*Mus musculus* L.) IN THE ESTRUS PHASE

By

WAYAN MITRI APRILIA SARI

The endometrium is the mucosal lining of the uterus that undergoes dynamic changes during the reproductive cycle and plays an important role in the implantation process. Endometrial thickness during the estrus phase is strongly influenced by estrogen and serves as an important indicator of reproductive success. Several natural materials, including betel leaf (*Piper betle* L.), are known to contain phytochemical compounds that may affect the reproductive system. This study aimed to determine the effect of ethanol extract of betel leaf on endometrial thickness and to identify the most effective dose in female mice (*Mus musculus* L.) during the estrus phase. This study used a Completely Randomized Design (CRD) with four treatments, namely a control group and three doses of ethanol extract of betel leaf (9 mg/30g body weight, 12 mg/30g body weight, and 15 mg/30g body weight), each consisting of five replicates. The extract was administered orally for 14 days. The observed parameter was endometrial thickness measured through histopathological examination of uterine preparations using a light microscope. Data were analyzed using the Kruskal–Wallis test. The results showed that the average endometrial thickness among treatment groups did not show a statistically significant difference ($p > 0.05$). Although there were descriptive variations in thickness values, the pattern of endometrial thinning was not consistent with increasing doses. This may be influenced by the dominance of endogenous estrogen during the estrus phase, as well as the dose and duration of extract administration that may not have been optimal. Based on this study, it can be concluded that the administration of ethanol extract of betel leaf was not able to significantly reduce endometrial thickness in female mice during the estrus phase, and the most effective dose has not yet been determined.

Keywords: endometrium, *Piper betle* L., estrus phase, female mice.