

## INTISARI

*Costus speciosus* (Koen.) J.E. Smith (pacing) merupakan tumbuhan yang dimanfaatkan oleh masyarakat secara tradisional untuk kontrasepsi. Penelitian Sari *et al.* (2013) mengungkapkan bahwa ekstrak air daun pacing dapat menurunkan jumlah dan motilitas spermatozoa secara reversibel. Beberapa penelitian menyebutkan senyawa yang terkandung dalam pacing adalah diosgenin, tanin, tigogenin, dioscin, dan gracilin. Senyawa diosgenin dan tanin diduga memiliki kemampuan untuk menurunkan reproduksi. Kedua senyawa tersebut dapat disari dengan etanol 70%. Karena hal tersebut, maka dilakukan penelitian untuk mengetahui pengaruh pemberian ekstrak etanolik herba pacing terhadap produksi testosteron intratestikuler tikus jantan galur *Sprague-Dawley* (SD).

Penelitian dilakukan secara *in vivo* menggunakan hewan uji berupa tikus jantan galur SD yang dibagi menjadi 6 kelompok perlakuan dengan masing-masing kelompok terdiri dari 4 ekor tikus. Perlakuan terdiri dari kelompok kontrol normal, kontrol negatif (pelarut Na-CMC 0,5%), kontrol positif (testosteron undekanoat (TU) 50 mg/kgBB), dan 3 kelompok perlakuan ekstrak etanolik herba pacing (EEHP) dengan dosis 275, 550, dan 1100 mg/kgBB secara per-oral setiap hari selama 14 hari. Pada hari ke-15 hewan uji dikorbankan untuk diambil cairan intratestikuler. Kadar testosteron intratestikuler dihitung menggunakan metode *Enzyme-linked immunosorbent assay* (ELISA). Parameter berat testis dianalisis secara statistik dengan taraf kepercayaan 95% menggunakan uji *One-way ANOVA* sedangkan kadar testosteron intratestikuler menggunakan uji Shapiro Wilk yang dilanjutkan dengan uji Mann-Whitney.

Hasil penelitian menunjukkan pemberian EEHP pada dosis 275, 550, dan 1100 mg/kgBB tidak berpengaruh secara signifikan terhadap berat testis. EEHP dosis 275 mg/kgBB menurunkan kadar testosteron intratestikuler secara signifikan dibandingkan terhadap kelompok hewan uji kontrol normal dan kontrol negatif. Sementara itu, kelompok EEHP dosis 550 mg/kgBB dan 1100 mg/kgBB tidak menunjukkan perbedaan signifikan dibandingkan kelompok kontrol normal, kontrol normal dan kontrol positif. Hal ini menunjukkan bahwa pemberian ekstrak etanolik herba pacing memiliki efek terhadap produksi testosteron intratestikuler, yaitu menurunkan kadar testosteron intratestikuler pada dosis 275 mg/kgBB. Penurunan kadar testosteron intratestikuler dapat diakibatkan karena terjadinya mekanisme umpan balik negatif.

**Kata kunci:** *Costus speciosus* (Koen.) J.E. Smith, kadar testosteron intratestikuler, kontrasepsi

## ABSTRACT

*Costus speciosus* (Koen.) J.E. Smith (pacing) is herbs traditionally used by community for contraception. Research done by Sari *et al.*, (2013) proved that infuse extracted from pacing's leaves reduced number and motility of spermatozoa reversibly. Several studies reveal that pacing contains some compounds such as diosgenin, tanin, tigogenin, dioscin, and gracilin. Diosgenin and tannin has been suggested having ability to decrease reproduction function. Those compounds can be extracted by ethanol 70%. Therefore, this research conducted to study the effect of ethanolic pacing herb extract on production of intratesticular testosterone in male *Sprague-Dawley* (SD) strain mice.

Research has been conducted *in vivo* using male SD strain mice as test animals which divided into 6 groups treatment with each group consist of 4 mice. Treatments group consist of normal control group, negative control group (Na-CMC 0,5% solvent), positive control group (Testosterone undecanoate (TU) 50 mg/kg BW), and 3 treatment groups of ethanolic pacing herb extract (EPHE) by dose 275, 550, and 1100 mg/kgBW. Treatments were given per-oral daily within 14 days long. On the 15<sup>th</sup> day test animals were ceased and taken each of its intratesticular solutions. Intratesticular testosterone concentration was measured using *Enzyme-Linked Immunosorbent Assay* (ELISA) method. Testical weight parameter was analyzed statistically with level of confidence of 95% by One-way ANOVA test, while intratesticular testosterone concentration parameter used Shapiro Wilk test followed by Mann-Whitney test.

The results of the researchs showed that EPHE with doses of 275, 550, and 1100 mg/kgBW were not giving a significant effect toward testical weight. EPHE with the dose of 275 mg/kgBW decreased intratesticular testosterone's level significantly compared to normal and negative control group. However, the 550 and 1100mg/kgBW of EPHE treatment groups were not giving significant compared to normal and positive control group. This indicates that administration of ethanolic pacing herb extract had an effect on intratesticular testosterone production, which lowers concentration of intratesticular testosterone at 275 mg/kgBW dose. Decrease of intratesticular testosterone concentration can be caused by negative feedback mechanism.

**Key words:** *Costus speciosus* (Koen.) J. E. Smith, intratesticular testosterone concentration, contraception