



The Effects of Water Clover (*Marsilea Crenata*) Extract against Estrogen, Progesterone And Uterine Histology on Rat (*Rattus Norvegicus*)

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Abstract : Isoflavones in Water clover (*Marsilea crenata*) shown to mimic the role of the female hormone estrogen. It is expected to replace the function of the synthetic estrogen hormone. However, it still needs further research to determine the most effective dose. The purpose of this study was to determine the effects of water clover extract to estrogen and progesterone levels and how it can affect the histology of uterine. This study used 30 female Wistar Rats (*Rattus norvegicus*) divided into six groups. Group I (P1) as a negative control group, group II (P2) as a positive control group. Group III, Group IV, Group V and Group VI (P3, P4, P5, P6) were given extract water clover concentrations are given as follow (6.25%, 12.5%, 25%, 50%). The results were analyzed with one-way ANOVA showed not significant ($p > 0.05$) between groups, even though group P3, P4, P5 and P6 produce estrogen that is higher than the negative control (P1) and a positive control (P2). The P1 group produces the highest progesterone level but after the ANOVA test showed no significant different ($p > 0.05$) between-group. Histological features of the uterus in the P2 group showed endometrial lining thicker than the P1 group. Histology of the uterus in the treatment group P3, P4, P5, and P6 have also seen endometrium thickening. This research has proved that water clover extract consumption showed a promising replacement estrogen hormone therapy in the future. However, there was needed a much further research in order to found a proper dose for human consumption.

Keywords : Water Clover (*Marsilea crenata*), Estrogen, Progesterone, Uterine Histology.