

ABSTRACT

Ratna Fatmawati. 24020120140092. **Effect of Nanochitosan Preparation from Ethanol Extract of Neem Leaves (*Azadirachta indica* A. Juss) on the Development of Rat (*Rattus norvegicus*) Ovarian Follicles.** Supervised by Sri Isdadiyanto and Agung Janika Sitasiwi.

Neem (*Azadirachta indica* A. Juss) is a traditional plant that can be used for its roots, stems, and leaves. Ethanol extract of neem leaves has potential as an antifertility agent. Oral administration of ethanol extract of neem leaves has disadvantages, including low drug distribution to body organs and less than optimal drug bioavailability. The solution to this problem is to package ethanol extract of neem leaves using nanochitosan to increase drug distribution and bioavailability. This study aimed to test the effect of nanochitosan ethanol extract of neem leaves on the ovarian weight, Gonadosomatic Index (GSI), number and type of follicles, and follicle diameter. This study was carried out using a Completely Randomized Design (CRD) consisting of 4 treatments, namely P0 (aquades), P1 (ethanol extract of neem leaves), P2 (nanochitosan), P3 (nanochitosan ethanol extract of neem leaves) and each was carried out 3 times. Food and water in this study were provided ad libitum. Rats were treated orally at a dose of 14 mg/kgBW/day for 28 days. The variables of this study included ovarian weight, Gonadosomatic Index (GSI), number and type of follicles, and follicle diameter. The results were analyzed using the one-way ANOVA statistical test with a confidence level of 95%. The results of data analysis were significantly different ($P < 0.05$) followed by Duncan's Multiple Range Test (DMRT) with a significance level of 5%. The results showed that oral treatment with nanochitosan ethanol extract of neem leaves affected the number of primary follicles, the number of atretic follicles, and the diameter of the corpus luteum. This study concluded that the preparation of ethanol extract of neem leaves in the form of nanochitosan can affect folliculogenesis as indicated by the inhibition of development in several types of follicles.

Keywords: *nanochitosan, antifertility, ovary, neem*