

ANTIDIARRHEAL EFFECTS TEST OF NUTMEG SEED (*Myristica fragrans* Houtt.) ETHANOL EXTRACT IN MALE SWISS WEBSTER MICE (*Mus musculus*) INDUCED WITH *ESCHERICHIA COLI*

ABSTRACT

Diarrhea is an endemic disease that has the potential to cause overbreak and is a significant health problem in Indonesia. One of the causes of diarrhea is Escherichia coli bacterial infection. As a tropical country, Indonesia has a variety of plants that function as medicines, which is estimated more than 1000 species. One of the medicinal plants used as an alternative treatment for diarrhea is nutmeg seed (Myristica fragrans Houtt.). This is because the content of nutmeg seeds has phytochemical compounds that have the potential as antibacterial agents. In a previous study, it was reported that nutmeg seed extract (Myristica fragrans Houtt.) showed an inhibitory effect on the growth of Escherichia coli bacteria in vitro. Therefore, this study aimed to determine the differences antidiarrheal effect of nutmeg seed ethanol extract (Myristica fragrans Houtt.) on male Swiss Webster mice induced by Escherichia coli and determine the optimal dose. This type of research is an experimental study, the test animals used were 25 individuals divided into 5 groups. Group I was a group of Healthy Mice, group II was a group of mice with Diarrhea + 1% NaCMC, group III was a group of mice with Diarrhea + 5 mg/kgBW Extract, group IV was a group of mice with Diarrhea + 7.5 mg/kgBW Extract, and group V was a group of mice with Diarrhea + 10 mg/kgBW Extract. The parameters observed were onset of diarrhea, duration of diarrhea, frequency of diarrhea, stool consistency, stool weight, and percentage of protection which were analyzed using a one-way ANOVA statistical test, the results showed onset of diarrhea ($p=0.005$), duration of diarrhea ($p=0.001$), frequency of diarrhea ($p=0.015$), and stool consistency ($p=0.006$), meaning that there was a significant difference ($p<0.05$) between group II and groups III, IV, and V. Meanwhile, the statistical test results of stool weight ($p=0.084$), meaning that statistically there is no difference but on average it shows that there is a difference between group II and groups III, IV, and V. Then the percentage of protection is done by comparing the stool weight of the treatment group to the stool weight of the control group, the results show that there is an effect antidiarrheal in groups III, IV, and V. So it can be concluded that there are differences in the antidiarrheal effect of the ethanol extract of nutmeg (Myristica fragrans Houtt.) on male Swiss Webster mice induced with Escherichia coli bacteria at a dose of 5 mg/kgBW, 7.5 mg/kgBW, and 10 mg/kgBW with the optimal dose of 7.5 mg/kgBW.

Keywords: Antidiarrheal, *Escherichia coli*, Male Swiss Webster Mice, Nutmeg seed (*Myristica fragrans* Houtt.)

(xv + 78 + 18 attachments)

References (1987-2023)