EFFECT OF ETHANOL EXTRACT AND ETHYLACETATE FRACTION OF ARECA SEEDS (*Areca catechu L.*) ON CHANGES IN WORM INTENSITY IN MICE (*Mus musculus*) GIVEN PER-ORAL INFECTIOUS TRICHURIS MURIS EGGS

Endy Juli Anto^{1,2)}, Aznan Lelo³⁾, Syafruddin Ilyas⁴⁾, Marline Nainggolan⁵⁾

¹⁾Post Graduate Student of Doctoral Program, Faculty of Medicine, Universitas Sumatera Utara

²⁾Faculty of Medicine, Universitas Methodist Indonesia

³⁾Faculty of Medicine, Universitas Sumatera Utara

⁴⁾Faculty of Mathematics and Natural Science, Universitas Sumatera Utara

⁵⁾Faculty of Pharmacy, Universitas Sumatera Utara

ABSTRACT

Background: The intestinal parasitic nematode is among the most common causes of human infectious disease worldwide. The mouse whipworm *Trichuris muris* has been extensively used as a model to study human whipworm infection. Areca seeds (*A. catechu L.*) have long been known as antihelmintic. This study aimed to examine the effect of ethanol extract and ethylacetate fraction of areca seeds (*Areca Catechu L.*) on changes in worm intensity in mice (*Mus Musculus*) given per-oral infectious *Trichuris Muris* eggs.

Subjects and Method: This was experiment study with post-test only control group design conducted at the Faculty of Mathematics and Natural Science Laboratory, Universitas Sumatra Utara, Medan. A sample of 10 male mice was randomly assigned to 7 group: (1) negative control (normal); (2) induction of 200 *T. Muris* infective eggs (positive control); (3) induction of 200 *T. Muris* infective eggs and ethanol extract areca seeds p.o. (per oral) 100 mg/kgbw; (4) induction of 200 *T. Muris* infective eggs and ethanol extract areca seeds, p.o. 150 mg/kgbw; (5) induction of 200 *T. Muris* infective eggs and ethylacetate fraction of areca seeds p.o. 100 mg/kgbw; (6) induction of 200 *T. Muris* infective eggs and ethylacetate fraction of areca seeds, p.o. 150 mg/kgbw; (7) induction of 200 *T. Muris* infective eggs and Albendazol p.o. 1 mg/20 g. Intensity was described in Mean and SD.

Results: Intensity of worm *T. muris* after days-37 was as followed. In positive control or group 2, there were 13 worms (Mean=1.30; SD=1.41). In group 3, there were 2 worms (Mean=0.20; SD=0.42). In group 4, there were no worms. In group 5, there were 8 worms (Mean=0.80; SD=0.91). In group 6, there were 22 worms (Mean=2.20; SD=2.34). In group 7, there were 9 worms (Mean=0.90; SD=1.10). The pairwise statistical significance (p values) was as followed. Groups 1 - 2 (p= 0.005), groups 2-3 (p= 0.040), groups 2-4 (p= 0.005), groups 3-6 (p= 0.004), groups 4-5 (p=0.013), groups 4-6 (p=0.001), groups 4-7 (p=0.013). The remaining pairwise Mean differences were statistically non-significant.

Conclusion: Ethanol extract of areca seeds 150mg / kgbw is more effective as an anti-helmintic than the ethylacetate fraction of areca seeds and albendazole.

Keywords: areca seeds, *Areca Catechu L.*, worm, mice, *Mus Musculus*, *Trichuris Muris*.

Correspondence:

Endy Juli Anto. Post Graduate Student of Doctoral Program, Faculty of Medicine, Universitas Sumatera Utara, Medan, North Sumatera. Email: Mobile: +6282367667575