

ABSTRACT

Mufidah, Nurul. 2011. **Effect of *Lumbricus rubellus* to Preview Histological Liver and Antioxidant Activity in Blood Serum on the *Rattus norvegicus* Infected *Salmonella typhi***. Thesis. Department of Biology Faculty of Science and Technology State Islamic University (UIN) Malang Maulana Malik Ibrahim. Mentors I: Dr. drh. Bayyinatul Muchtaromah, M.Sc. Supervising II: Dr. Munirul Abidin, M. Ag.

Keywords: Flour *Lumbricus rubellus*, liver histology, antioxidant activity, *Rattus norvegicus*, *Salmonella typhi*.

Worms are a source of animal protein with a very high protein content (72% - 84.5% of body weight of worms). Earthworms are very potential to treat many diseases, one of which is a disease caused by infection with typhus bacterium *Salmonella typhi*. Flour earthworms can treat typhoid because they contain several active compounds, including enzyme lysozyme, agglutinin, and lumbricin lytic factor. The use of earthworms as a traditional medicine has long been used as a cure typhoid fever, so it made earthworms are processed into flour using a worm *Lumbricus rubellus* species that is processed at a temperature of 500C and in vitro proved to be antibacterial drugs. However, the concentration and duration of administration affect the effectiveness of the worm in the flour to overcome the bacteria *Salmonella typhi* infection in vivo. Therefore, this study aims to determine the concentration and duration of administration are effective as antibacterial drugs that can inhibit the growth of *Salmonella typhi* bacteria in vivo.

This study is an experimental study conducted in February-March 2011 held at the Laboratory of Biology Department Biosistem State Islamic University of Malang Maulana Malik Ibrahim. This study using Completely Randomized Design (CRD) with 2 (two) factors. The first factor is the concentration of flour worms (concentration 32%, 48% and 60%). The second factor is the duration of administration (7 days and 14 days). Data were analyzed by calculation of Analysis of Variance (Two Way ANOVA) if it shows a real difference then tested further by BNJ test 1%.

The results indicate that liver damage $F_{hitung} > F_{tabel} = 7.13 > 6.36$, whereas the antioxidant activity also showed $F_{hitung} > F_{tabel} = 104.96 > 6.36$ which means that there is a marked influence of concentration and duration of administration to the improvement of flour worms histological liver damage and antioxidant activity in blood serum. Concentration and duration of administration that effectively influence histological liver damage repair and antioxidant activity in blood plasma is the concentration of 60% for 14 days.