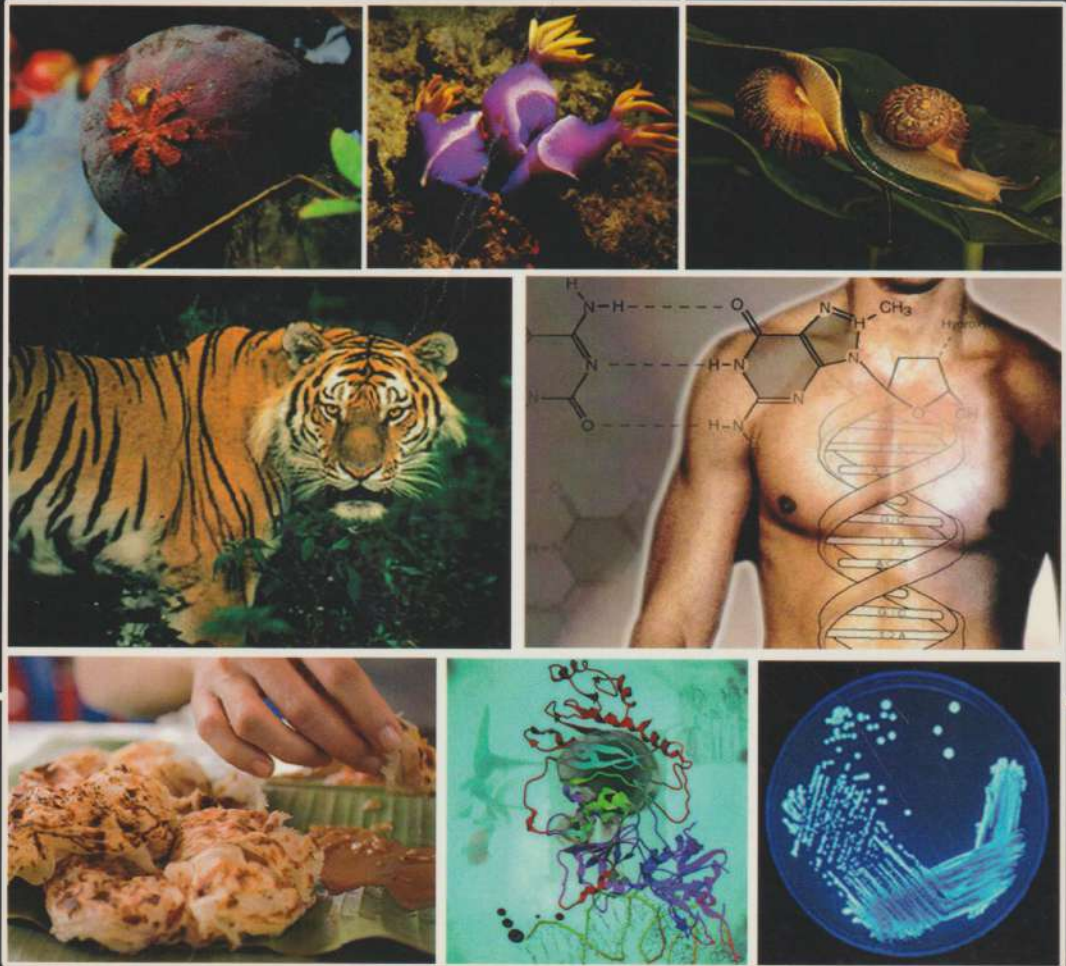


# Simposium Persatuan Biologi Gunaan Malaysia Ke-11

The 11<sup>th</sup> Symposium Of The Malaysian Society of Applied Biology



Program & Abstrak / Programme & Abstracts



## Keseimbangan Biologi Ke Arah Kelestarian Hayat

*"Biological Balance Towards Life Sustainability"*

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**The effects of nerolidol, allicin and berenil on the morphology of *Trypanosoma evansi* in mice: A comparative study using light and electron microscopic approaches**

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In this study, the effects of nerolidol and allicin, respectively extracted from cardamon (*Elettaria cardamomum*) and garlic (*Allium sativum*), were compared with the effect of berenil (standard anti-trypanosomal drug) on the morphological changes of a protozoan parasite *Trypanosoma evansi* in mice, determined by light and electron microscopes. Male ICR mice were subjected to infections: with the parasite or without infection, treated with nerolidol and allicin, or with berenil or distilled water as control. Blood samples were employed for the observation under light and electron microscopes. Parasites had adverse morphological changes due to berenil treatment. Following post-treatments, the parasites stiffened and tapered at both ends, were distorted with fractured flagella and undulating membranes were lost before totally disintegrated and cleared from the blood at 6<sup>th</sup> – 7<sup>th</sup> hours post-treatment. The morphological changes in the nerolidol-treated group only appeared after 23 days post-treatment and continued gradually until 26<sup>th</sup> days post-treatment where the parasites became stiff, lost their undulating membranes but the free flagella remained intact. Total destruction was only observed at 28<sup>th</sup> days post-treatment. Parasites in the allicin-treated group however, showed marked morphological changes, although not as profound as changes due to berenil. Changes occurred only after 18 days post treatment, and gradually intensified up until 90 days post treatment; however, treatments were terminated on the 30<sup>th</sup> day. The parasite also became crescent in shape, lost their undulating membranes and total destruction was only observed in the 95<sup>th</sup> days post-infection. All mice in the negative group (untreated-infected) succumbed to infection with drastic increase of parasitaemia while all the infected and berenil-treated mice survived the infections. Although nerolidol and allicin showed some quite convincing and promising anti-trypanosomatidal activity against the morphology of *T. evansi* in mice, further studies are required to elucidate the mechanism(s) of action of these compounds.

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