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Evaluation of Cinnamaldehyde Effect on *Trichomonas gallinae* under *In vitro* Conditions

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Abstract

Trichomoniasis is a common disease in local chickens and pigeons whose causative agent is *Trichomonas gallinae* protozoan. Metronidazole is the drug of choice in trichomoniasis treatment, but several cases of resistance to this drug have been reported. Considering antibacterial and antifungal effects of cinnamaldehyde as the main component of cinnamon, the present study investigated its effect on *Trichomonas gallinae* protozoan *in vitro* conditions. After isolation of parasite from buccal cavity of infected pigeons and culturing in Diamond medium, samples were kept at 37ºC to reach logarithmic growth phase. For evaluation of toxic effect of cinnamaldehyde on this protozoa, 96 well microplates were used. To each well 100 µL of culture medium containing at least 1×10^4 parasites was added. Then amounts of cinnamaldehyde and metronidazole to reach final concentrations of 25, 50, and 100 µg/mL were added. Treatments were done with 10 replicates, and after 24 h mortality rate of parasites were evaluated by direct observation under light microscope and counting by haemocytometer slide. Results showed that mortality rate of cinnamaldehyde at 100 µg/mL was 100% which did not differ significantly in comparison to metronidazole. In addition, in growth inhibition rate at 50 and 100 µg/mL of cinnamaldehyde and metronidazole, significant difference was not observed. This study demonstrated promising effects of cinnamaldehyde on *T. gallinae* protozoa. By further research and study on effective components of cinnamon, they can be used for making novel antitrichomonal drugs.

Key words: Cinnamaldehyde, *Trichomonas galline*, Cinnamon, Pigeon, Green drugs

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