Thesis title Ovocidal effect of ammonia on destroying **Ascaris suum** eggs

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ABSTRACT

The ovocidal effect of ammonia on **Ascaris suum** eggs were trialed anaerobically with varying concentrations of ammonia at either room temperature or in the incubater at 37 °C.Five concentrations of ammonia were tested, i.e.0.2, 1.0 , 2.0, 4.0 and 6.0 gm%. The one-cell , late morula and infective stage eggs were used in the tests. Based on these three stages of the eggs the term experiment 1 , 2 and 3 were referred to the tests that result from it.After 30 days of ammonia exposure,the survived eggs were tested for their viability by culturing and their infectivity by experimentally infecting in white mice.

All experiments in higher temperature showed enhancing the ovocidal effect of ammonia significantly and thus at 37 °C the eggs were destroyed more than at room temperature ($p < 0.05$).Higher concentrations of ammonia also

had more ovocidal effect on all stages of the eggs tested ($p < 0.05$). The ammonia at room temperature or 37 °C and concentration at 0.2 gm% could not destroy the eggs after 30 days of exposure. However, the eggs were retarded the devolopment at 37 °C in the experiment 1 and 2 in the control and experiment groups after 30 days of exposure which did not show in experiment 3.

The exposure time of different ammonia at concentration of 1.0 , 2.0, 4.0 and 6.0 gm% and temperature level required to kill the eggs were significantly different in all experiments.($p<0.05$).The lethal time of being exposed to ammonia at concentration of 1.0 ,2.0,4.0 and 6.0 gm% were 6, 2, 2, 2 days at room temperature and 3, 2, 2, 1 day at 37 °C at one cell stage eggs ; in 6 , 3, 3 , 2 days at room temperature and in 3, 3, 2 ,2 days at 37 °C at late morula stage eggs ; in 6, 2 , 1, 1 days at room temperature and 3 1 ,1 , 1 days ,respectively ,at 37 °C at infective stage eggs.

The survived eggs in both control and experiment groups with 0.2 gm% in experiment 1 and 3 were viable and infective. The experimental white mice were infected after 10 days of being fed with the infective eggs from the cultures. However, the infection rates were not different in all groups ($p > 0.05$). The worms were recovered mostly from the small intestine of the infected mice and less in the lung and liver.

It is obvious from this study that ammonia alone effect the development of **Ascaris suum** eggs and the lethal time varied with concentration , being less at high concentration. In order to be more applicable to the control of human **Ascaris** eggs ,study of the ovocidal effect of ammonia on human **Ascaris** eggs in the field such as in feces in septic tank should be carried out.