

## ABSTRACT

### EFFECT OF HEATING AND COOLING TEMPERATURE MANIPULATION SPORULATION ACTIVITY OF *Eimeria tenella* OOCYSTS IN VITRO

Nurima Basma

Coccidiosis is life threatening disease in chickens and difficult to treat. *Eimeria tenella* is one of the causes caecal coccidiosis in chickens and lead to bloody diarrhea, weight loss, decreasing egg production and mortality. This disease is spread by sporulated oocysts The purpose of this study to find out the effect of temperature manipulation to sporulation activity of *Eimeria tenella* oocyst in vitro.

Eight 15 days old chickens were infected orally with sporulated oocysts. Necropsy was conducted at day-7 and the oocysts were taken from caecums. Unsporulated oocysts were divided into 4 groups with each treatment consisted of 5 replications. Each replication consisted of approximately 5000 oocyst. Group I was incubated in 0°C, group II (control) was stored at room air (27°C), group III was incubated in 30°C and group IV were incubated at 50° C , treatment were done for 5 days. Quantitative data about the number of sporulated oocyst in each treatment group were taken. Data analysis was using ANOVA and Duncan's Multiple range test.

This study showed that based on resource sporulation oocyst between 27°C with 30°C, 0°C with 50°C there was no significant ( $P < 0,05$ ). Between temperature 27°C and 30°C with 0°C and 50°C are apparently a significant difference ( $P < 0,05$ ).

*Eimeria tenella* oocyst stored in 50°C for 5 days have sporulation activity of 0.08% and oocysts wall were damaged because of heating process. Sporulation activity oocyst were decreased at temperature of 30°C (0.42%), 27°C (0.40%) and 0°C (0.16%) consecutively. No damage were happened to oocysts wall of those groups.

**Key words :** *Coccidiosis, Eimeria tenella oocyst, Sporulation, Temperature*