ISBN 979 - 98350 - 0

PROCEEDINGS OF INTERNATIONAL SYMPOSIUM on BIOMEDICINES

18th and 19th September 2003

Theme :

Biodiversity on Traditional Biomedicines for Human Health and Welfare

Biopharmaca Research Center
Bogor Agricultural University
Bogor - Indonesia

The Effect of *Acalypha indica* to *Eimeria tenella* Oocysts, Schozomts, Macrogametes and Microgametes Count in The Caecum Tissue of Chicken

Umi Cahyaningsih and Belladona
Laboratory of Protozoology
Departement of Parasitology and Pathology
Faculty of Veterinary Medicine, Bogor Agricultural University
Jl. Agatis, Kampus Darmaga, FKH – IPB Bogor, INDONESIA
e-mail : umi-eddy @ bogor.net

Introduction

Eimeria tenella is pathogen to chicken and causes caecum coccidiosis with clinical sign of blood diarrhea and death in chickens. (Levine, 1985). The prevention and therapy of this disease using anticoccidiostat, such as sulfaquinoxaline (Booth, 1982), but the continuous using of this drug can cause resistant to the *Eimeria tenella* and resulted residu of this drug in the meat and egg of chickens. Because of that it is important to choose another drug with plant. The *Acalypha indica* is a plant used as anti inflamatory and anti diarrhea, blood diarrhea and anti malaria(Wijayakusuma, 1993). *Acalypha indica* contains saponin, tannin, flavonoid, alkaloid, glycoside and phenol. (Wijesekera, 1991; Hutapea, 1993)

The aim of this research was to find out the effect of the administration of *Acalypha indica* to chickens and to count the number of oocysts, schizonts, macrogametes microgametes in tissue of chicken caecum.

Material and Method

This research used 48 two-week old layer chickens divided into 6 groups for : 1.) negative control, 2.) positive control, 3.) infection with *Eimeria tenella* and treatment with sulfaquinoxaline with the dose of 13 mg/kg body weight, infection with *Eimeria tenella* and treatment with *Acalypha indica* with : 4.) low, 5.) medium and 6.) high dose. The drug were given 2 hours for 6 days after infection with *Eimeria tenella* with the dose of $1x10^4$ oocysts/chick. At days 6 and 18 after infection oocysts, schizonts, macrogametes and microgametes in the caecum tissue were counted.

Results

Six days after infection, the administration of the *Acalypha indica* resulted in the lower oocysts counts compared with those of positive control and the significant difference were found in the lower and medium doses. The schizonts, macrogametes and microgametes counts were not significantly different compared with those of positive control and

sulfaquinoxaline in all treatment with *Acalypha indica*. (Tabel 1)

Eighteen days after infection, the administration of the *Acalypha indica* with low, medium and high doses resulted in a significantly lower oocysts, schizont, macrogametes and microgametes counts compared with those of positive control. The oocysts counts were significantly lower compared with positive control and sulfaquinoxaline in all treatment with *Acalypha indica* . (Tabel 2).

The decrease of oocysts, schizont, macrogametes and microgametes counts may be the action of phenol in the *Acalypha indica* that denaturated microorganism cell (Wijesekera, 1991) and resulted in the death of cell parasite.

Conclusion

The administration of the *Acalypha indica* to chickens at 6 days after infection showed that the oocysts counts were significantly lower compared with those of the positive control. The schizonts, macrogametes and microgametes counts were not significanly different compared with those of positive control and sulfaquinoxaline in all treatments with *Acalypha indica*. The administration of the *Acalypha indica* at 18 days after infection showed that the oocysts counts were significantly lower compared with positive control and sulfaquinoxaline in all treatments. The oocysts, schizonts, macrogametes and microgametes counts were significantly lower compared with those of positive control in all treatments

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Table 1. The average of oocyst, schizont, macrogamete, microgamete counts 6 days after infection and administration of *Acalypha indica*.

Stadium of parasite	Control		Treatments			
			Sulfaquinoxaline 13 mg / kg BW	*Acalypha indica* (gr/ml) per chick		
	Positive	Negative		A_1	A_2	A_3
Oocysts	$42,00^{a}$	$0,00^{g}$	$38,75^{ab}$	$31,25^{bcde}$	$32,00^{bcde}$	$32,50^{abcde}$
Schizonts	$37,00^{abc}$	$0,00^{g}$	$35,00^{abcd}$	$34,24^{abcde}$	$32,50^{abcde}$	$31,75^{bcde}$
Macrogametes	$28,75^{bcd\ f}$	$0,00^{g}$	$28,25^{cdef}$	$26,00^{def}$	$27,50^{cdef}$	$26,50^{def}$
Microgametes	$28,00^{cdef}$	$0,00^{g}$	$25,50^{def}$	$20,00^{f}$	$24,50^{ef}$	$26,00^{def}$

Different letters within columns indicate significant difference at 5 % level.
A_1: low dose ; A_2 : medium dose ; A_3 : high dose

Table 2. The average of oocyst, schizont, macrogamete, microgamete counts 18 days after infection and administration of *Acalypha indica*.

Stadium of parasite	Control		Treatments			
			Sulfaquinoxaline 13 mg / kg BW	*Acalypha indica* (gr/ml) per chick		
	Positive	Negative		A_1	A_2	A_3
Oocysts	$25,50^{ab}$	$0,00^{h}$	$22,00^{b}$	$6,25^{cdefg}$	$9,75^{cd}$	$10,50^{c}$
Schizonts	$21,25^{b}$	$0,00^{h}$	$10,75^{c}$	$3,75^{efgh}$	$6,25^{cdefg}$	$8,25^{cde}$
Macrogametes	$28,25^{a}$	$0,00^{h}$	$7,00^{cdefg}$	$2,50^{gh}$	$4,75^{efgh}$	$6,25^{cdefg}$
Microgametes	$27,00^{a}$	$0,00^{h}$	$7,50^{cdef}$	$3,00^{fgh}$	$5,25^{defgh}$	$7,00^{cdefg}$

Different letters within columns indicate significant difference at 5 % level.
A_1: low dose ; A_2 : medium dose ; A_3 : high dose