NOTE: EFFICACY OF RINTAL (FEBANTEL) AT DIFFERENT DOSAGE LEVELS AGAINST *Ascaridia galli* AMONG ARTIFICIALLY INFECTED BROILER CHICKENS

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ABSTRACT

Febantel given at dosage levels of 0.25, 0.50 and 1.00 g per bird reduced *Ascaridia galli* eggs in fecal samples of broiler chickens by 61.4, 94.07 and 100%, respectively, and adult *A. galli* by 33.98, 81.11 and 100%, respectively. Statistical analysis indicated that 1.00 g Febantel per bird was the most effective in reducing coprological egg output and adult parasites.

Ann. Trop. Res. 12:46-49

KEY WORDS: *Ascaridia galli* (Ascaris). Coprological egg output. Rintal (Febantel).

A common problem of poultry production is internal parasitism, one of the most destructive contagious diseases which cause economic losses by retarding growth, decreasing weight gain, and even causing death in broiler and layer chickens.

The particular intestinal parasite in this study is *Ascaridia galli* which is synonymous to *Heterakis lineata* (Schneider, 1960 as cited by Biester and Devries, 1956). This parasite invades the small intestine of fowls in most tropical countries (Hall, 1977).

Among the intestinal parasites invading the intestine of chickens, the large roundworm probably inflicts the most damage (North, 1978) since heavily parasitized chickens suffer from loss of blood, reduced blood sugar content, emaciation and diarrhea. The worm presumably wanders up the oviduct from the intestine via the cloaca with subsequent inclusion in the developing egg and results in the breakage of egg which is highly fatal in birds (Biester and Devries, 1956). The parasite undergoes significant

changes in habitats, functions and physiological requirements, changes accompanied by a gradual and progressive reduction of the structures which function most actively in a free-living existence. One after another, organs suffer regressive changes, with enfeeblement and atrophy of the muscular and sensory elements. There is a corresponding degradation of the central nervous system (Lucker, 1982). Hall (1977) cited that young birds below three months old are more susceptible and dietary deficiencies predispose the birds to infection. When the young parasite penetrates the duodenal mucosa, it causes hemorrhages and enteritis. The bird then becomes anemic and shows diarrhea.

Hall (1977) further cited that post-mortem examination of infected birds reveals characteristic hemorrhages in the intestines among which the larval worm, about 7 mm long, can be seen.

Due to this deleterious effect of *A. galli*, there is a need for an immediate and efficient control of this parasite. Since poultry production is engaged in by many people, it must be provided with the most effective anthelmintic drug (Foster, 1970).

Until now, there is a ceaseless search for an ideal anthelmintic with high degree of activity against mature and immature parasites but with wide margin of safety. One of the latest additions to the anthelmintics in the Philippine market is Febantel with a proprietary name of Rintal. This drug is acclaimed to be highly effective against roundworms of goats and sheep (Bayer, Germany). It is prepared in granulated form and is administered orally. The efficacy of this drug against large roundworms in broiler chickens has yet to be tested, hence this study.

The drug Rintal (Febantel) was secured from Bayer using the granulated 10% form. The drug was administered by adding it to the feeds. Dosage was apportioned based on the dosage/body weight in birds.

Eighteen experimental chickens (Cobb) of the same age but of varying sex and weight were used in the study. The experimental broiler chickens were confirmed free from the infection by deworming them with Ridol (Piperazine) so that during the artificial induction of the parasite, at least the same level of infection was obtained by each bird. Fecal materials from chickens heavily infested with the parasite were used to contaminate the feeds. Contaminations were done for six consecutive feedings. One of the limitations of the study was the non-quantification of the infective materials used on experimental birds.

Coprological examination

During the coprological examination, the fecal samples were taken directly from the cloaca and placed in clean, properly labelled vials. Fecal examination was conducted on the same day after the collection of samples using the Stoll's Dilution Technique for Quantitative fecal egg examination as described by Soulsby (1968).

A pre-treatment coprological examination, replicated twice, was done on each experimental chicken 50 days after contamination of the feed. During the treatment period, experimental chickens were divided into three groups and orally given dosage levels of Rintal at 0.25, 0.5 and 1.0 g/bird.

Each treatment bird was examined coprologically 3 days after treatment. Adult parasites excreted after treatment were counted and recorded. Each test chicken was slaughtered and adult parasites in the intestines were counted.

Statistical analysis

Completely Randomized Design (CRD) was used to analyze results obtained. The treatments were the three dosage levels (0.25, 0.5, and 1.0 g/bird).

In Table 1, results show a close range of egg count per gram of feces in every experimental animal among the different groups, indicating almost the same level of infection. Post-treatment coprological egg examinations resulted in 61.4 and 94.07% reductions in birds treated with 0.25 and 0.5 g Febantel, respectively. Fecal samples from birds treated with 1.0 g Febantel were completely devoid of *A. galli* eggs indicating reduction of 100%.

Table 1. Results of the average egg per gram (EPC) trials at different dosage levels of Febantel[1].

Group	Dosage (g/bird)	Average EPG		Reduction (%)
		Before Treatment	After Treatment	
I	0.25	1766.67	683.33	61.32a
II	0.5	1825.00	108.33	94.04b
III	1.0	1858.33	0.00	100.00c

[1]Any two means having no common letter is significant at 1% level (LSD).

Table 2. Effect of different Febantel dosage levels against adult parasites.

Group	Dosage (g/bird)	Total Number of Parasites		Reduction (%)
		Expelled	Recovered at Necropsy	
Control	0	0	9	0
I	0.25	2.80	5.50	33.74a
II	0.5	7.00	1.67	80.74b
III	1.0	8.83	-	100.00c

[1]Any two means having no common letter is significant at 1% level (LSD).

In Table 2, post-treatment adult parasite examinations resulted in 33.74 and 80.74% reductions in birds treated with 0.25 and 0.5 g Febantel, respectively. Birds given 1.0 g Febantel each were completely devoid of adult parasite indicating a 100% reduction.

LITERATURE CITED

BIESTER, H.E and DEVRIES, L. 1956. Diseases of poultry. Washington Press, Washington D.C.

FOSTER, A.O. 1970. The United States Department of Agriculture. The yearbook of agriculture. Washington Press, Washington D.C. pp. 301-302.

HALL, H.T.B. 1977. Diseases and parasites of livestock in the tropics. Longman Group Ltd., London. pp. 24-25.

LUCKER, J.T. 1982. McGraw-Hill Encyclopedia of Science and Technology. 5th ed. McGraw-Hill, New York. p. 209.

NORTH, M. 1987. Commercial chicken production manual. 2nd ed. Westport Press, Westport, Connecticut. p. 23.

SOULSBY, F.G.L. 1968. Helminths, arthropods and protozoa of domesticated animals. Balliere, Tindall and Cornell Ltd., London. pp. 142-145.