

## ENDOPARASITISM IN POULTRY AND ITS TREATMENT WITH TETRAMISOLE

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**Abstract:** Tetramisole (vesonil), administered orally, was used to treat chicken infected with *Ascaridia galli*, *Heterakis gallinarum* and *Railletina* spp. It was also used to treat syngamus trachea in broiler birds. There was marked drop in helminth egg counts in the faeces on the third day of treatment and the faeces became negative by the seventh day after the last treatment. Post mortem examination 15-20 days later, showed that the drug was 100 per cent effective against *A. galli* and *H. gallinarum* at 25mg/kg. However for complete removal of *Railletina* spp. 40mg/kg body weight was required. Similarly 50mg/kg tetramisole was effective against syngamus trachea. It was concluded that tetramisole is suitable for the treatment of the important intestinal and tracheal worms of poultry at a dose of 25 to 50mg/kg for 3 consecutive days, for use under field conditions.

**Keywords:** *A. galli*, *H. gallinarum*, *Railletina* spp., chicken infection

### INTRODUCTION

In Pakistan parasitic infestation causes tremendous economic losses to the poultry industry due to hot humid climate and poor hygienic and managemental conditions. Among these, *Ascaridia galli*, *Heterakis gallinae*, *Syngamus trachea* and *Railletina* spp. are more prevalent. Infection may be single or multiple. An anthelmintic with broad spectrum activity is, therefore needed to minimize treatment cost. Tetramisole (Vesonil) is a broad spectrum anthelmintic which possesses high activity against adult and immature stages of a wide range of helminth parasites of domestic, wild and zoo animals. However only a few reports are available on its use against poultry helminth parasites. Bruynoophe *et al.* (1968) and

Altaif (1972) reported its efficacy against *A. galli* in poultry while Koblova (1986) reported it to be highly effective against Heterakiasis in chicken. This study was conducted to evaluate the efficacy of tetramisole against the prevalent helminths in poultry.

## MATERIALS AND METHODS

The study was conducted in two treatment groups. Each experimental group was kept separate in new clean deep litter of rice-straw units. Food and water were available *ad lib.* at all time and care. In experimental group "A" 100 birds aged between 5-6months, and known to be infected with *A. galli*, *H. gallinae* and *Railletina* spp., were randomly divided into four groups. The droppings were examined by concentration/ floatation method of Sloss (1976). Ascarid eggs per gram (EPG) of faeces were determined by McMaster Egg Counting Technique (Cole, 1967).

The first group was treated with 25mg/kg tetramisole, the second with 40mg/kg and third with 50mg/kg orally mixed in feed for 3 days. The fourth group acted as untreated controls. The droppings were examined twice weekly for 2 weeks after administration of the drug using concentration/ floatation method (Sloss, 1976) and EPG counting by adopting McMaster Egg Counting Technique (Cole, 1967). Postmortem examination was carried out on 20 birds after the last treatment.

In the second experimental group "B" 30 broiler birds aged 5-6 weeks and naturally infected with *S. trachea* were selected from a flock of 100 birds. All the birds showed the characteristic "Gapes" and worms could be clearly seen in their trachea. These birds were divided randomly into two groups *i.e.*, I and II. Birds in group I were treated with tetramisole at the rate of 50mg/kg body weight for 3 days, while the birds in group II acted as un-treated control. All the birds were slaughtered 15-21 days after the last treatment and their tracheas were examined for the worms.

## RESULTS AND DISCUSSION

In the first treatment group "A" the birds tolerated the drugs well and no side effects were observed. The faecal eggs counts dropped from 400,000 EPG to less than 400 in birds receiving 25mg/kg and to less than

50 in those receiving 40mg/kg by the third day of treatment. At post mortem examination, none of the birds which had received 40mg or 50mg/kg, contained any worms. While only 2 of those which had received 25mg/kg still had a few *Railletina* tape worms. All the birds in the un-treated control group had many worms in their intestines with mixed infection in most cases.

The treated birds in the second experimental group "B" also show recovery by 7 days after the last treatment. At postmortem examination the treated birds had lost all the worms from their tracheas except for one bird in which a few worms remained. Birds in the un-treated control group still had many worms in their tracheas and 3 birds died after the beginning of the trials from asphyxiation due to the presence of large number of tracheal worms.

All helminth parasites included in the present study may lead to retarded growth, poor production and high mortality. *A. galli*, one of the most common intestinal nematodes of domestic chickens, competes with its host for digestible nutrients, causes inflammatory and petechial hemorrhages of the mucous membranes of the gut and large number of worms clump together in a form of a big mass in the oviduct of poorly laying birds (Senyonga, 1982). *Heterakis* spp. transmits *H. meleagridis* which causes a fatal disease histoplasmosis. *Syngamus trachea* blocks the air passages while the tapeworms *Railletina* causes inflammatory nodules of gut. In the present study tetramisole seems to be very effective anthelmintic with a broad spectrum of activity. The results of the present study are closely related to Enigh and Hazara (1971), Altaif (1972) and Koblova (1986).

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