Efficacy of a flubendazole suspension by oral route against *Ascaridia galli, Capillaria* spp. and *Heterakis gallinarum* in naturally infected chickens

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Objectives

Flubendazole is a benzimidazole compound active on digestive poultry nematodes including an ovicidal effect (1). Its efficacy against *Ascaridia galli, Capillaria* spp. and *Heterakis gallinarum* has already been shown in chickens by in feed administration (2). Nevertheless, medication in drinking water would be a valuable alternative (no constraint of medicated feed manufacture, flexibility of treatment implementation), provided that a reliable and easy to use formulation would be available. Thus, a new flubendazole oral formulation has been developed, allowing treatment in water over 4 h per 24 h without stirring of medicated water required, followed by an easy cleaning of water equipment (Flimabo®/Flimabend®, Virbac/Krka). The objective of the present study was to test efficacy of this product on digestive poultry nematodes.

Materials and methods

Three controlled, blinded studies were performed on naturally infected birds according to EU guidelines (CVMP/VICH/546/00-FINAL) and Good Clinical Practices. In each study, 30 layer chickens (mean body weight: 1.7-1.9 kg) were randomly assigned to a treated group or an untreated control group. Infection was confirmed by individual Faecal Egg Counts (FECs) before inclusion. Treatment consisted of flubendazole water medication (1.43 mg/kg/d for 7 days) administered during 4 h per 24 h according to body weight and water consumption. Birds were necropsied 5 days after stop of treatment for individual digestive worm counts. In each study Geometric Mean (GM) worm counts were compared between groups and treatment effectiveness was calculated as follows:

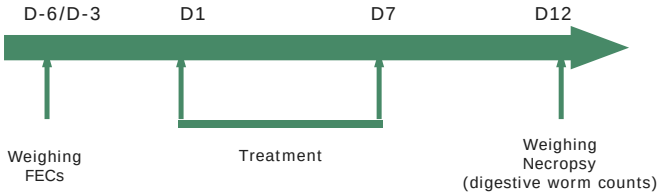
$$\frac{\text{Worm counts GM in control group} - \text{Worm counts GM in treated group}}{\text{Worm counts GM in control group}} \times 100$$

Results

Adequacy of infection was confirmed in all control groups for the parasites listed in the table.
Treatment efficacy was always above 90%. Worm counts were significantly lower in treated groups than in control groups ($p<0.005$) except in study 2 for *Heterakis gallinarum* ($p=0.07$). However, in study 2, *Heterakis gallinarum* infection of control birds was low and very variable.
No treatment-related adverse effect was observed.

Conclusion

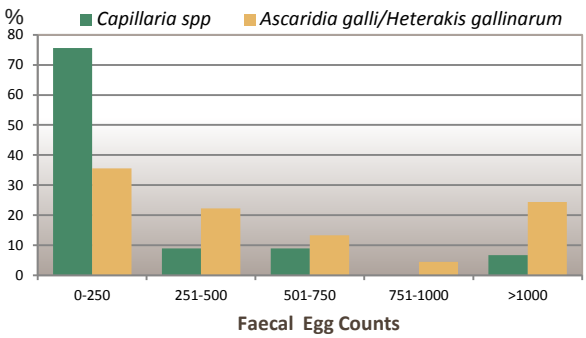
These data confirm efficacy of the tested drug on the three most prevalent helminth species in chicken (3).



Effectiveness of flubendazole treatment

Study	*Heterakis gallinarum*	*Capillaria spp.*	*Ascaridia galli*
1	95.1%	-	-
2	92.9%	99.4%	-
3	-	99.1%	100.0%

Distribution of FECs in studies 1/3 at the time of inclusion (composite data for *Ascaridia* and *Heterakis* as eggs distinction is difficult)



Capillaria spp.

(Source : Photograph courtesy of Jean-Michel Répérant)

References
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