

## WAAVP guideline for the evaluation of drug efficacy against non-coccidial gastro-intestinal protozoa in livestock and companion animals

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**Background:** Over the last few decades, WAAVP guidelines have been published in order to standardize the efficacy evaluation of parasiticides in livestock, poultry and companion animals, along with guidelines for coccidiostats in poultry. There are however no guidelines for non-coccidial gastro-intestinal protozoa in livestock and companion animals, despite the high prevalence, and the clinical, subclinical and public health relevance of these parasites. Recent studies underscore the need for effective drugs and relevant guidelines, with main focus on *Giardia duodenalis*.

**Methods:** Review of the current literature, and outcome of the discussion held at the symposium 'Giardia in veterinary Medicine: to consider or not to consider?' (WAAVP, Ghent 2007).

**Results and discussion:** The current guideline deals with many aspects of how to conduct controlled studies to evaluate the efficacy against non-coccidial gastro-intestinal protozoa, using experimental infection models (dose determination and dose confirmation), and efficacy studies in commercial facilities (field effectiveness studies). Furthermore, the selection of animals, housing, the infection procedure, the choice of diagnostic technique and data analysis are discussed. The primary parameter for drug efficacy is the reduction in parasite excretion and/or parasite infection load. As infection with most of these protozoa results in a high excretion of infective stages, as most excretory stages have a long survival time in the environment, and as the dose required for infection is low, a minimum efficacy of 99% is proposed against non-coccidial gastro-intestinal parasites. The secondary efficacy parameter is a significant difference in the proportion of infected animals between treated and non-treated groups. There is still debate on (1) whether a gastro-intestinal parasite count is needed in dose determination/confirmation studies, implying necropsy of animals, (2) whether to use arithmetic or geometric mean counts to calculate reduction between treated and non-treated groups, and (3) whether the proposed efficacy is sufficient

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