

# **Aspects of *Toxocara* epidemiology in the Netherlands**

## **Epidemiologische aspecten van *Toxocara* in Nederland**

(met een samenvatting in het Nederlands)

### **Proefschrift**

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**Paulus Arnoldus Maria Overgaauw**

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**Promotores:** Prof. Dr. A.W.C.A. Cornelissen

Vakgroep Infectieziekten en Immunologie  
Afdeling Parasitologie en Tropische Diergeneeskunde  
Faculteit Diergeneeskunde  
Universiteit Utrecht

Prof. Dr. F. van Knapen

Vakgroep Voedingsmiddelen van Dierlijke Oorsprong  
Faculteit Diergeneeskunde  
Universiteit Utrecht

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# **Introduction**

## **aim and scope of this thesis**

*Toxocara canis* and *Toxocara cati* are intestinal helminths of, respectively, dogs and cats. Both *Toxocara* species have, because of their zoonotic significance, important public health consequences. Prevention of infection with *Toxocara* eggs is based on education (general public, veterinary practitioners and physicians), hygiene and deworming of pets.

The first two chapters are an overview of the literature of *Toxocara* infections in dogs and cats (**Chapter 1**) and human toxocarosis (**Chapter 2**).

Little is known about the prevalence of the infection in the different categories of dogs and cats in the Netherlands which is a prerequisite to give adequate information. This thesis describes surveys among privately owned dogs and cats and stray cats (**Chapter 3**), dog breeding kennels (**Chapter 4**) and catteries (**Chapter 5**) to determine patent infections in dogs and cats and environmental contamination with *Toxocara* eggs in breeding colonies as well as eventual risk factors for infection.

Activation of somatic *Toxocara* larvae followed by a tracheal migration and the development of a patent infection is suggested for cyclic bitches during metoestrus. To get a clear answer, a group of intact beagles was monitored over a two year period by regular faecal examination and determination of serum *Toxocara* titers during the period following each oestrus which was compared with similar observations in pregnant bitches (**Chapter 6**).

Deworming is considered as an important tool in the treatment of patent nematode infections and the prevention of environmental contamination with *Toxocara* eggs. The anthelmintic efficacy of oxibendazole against intestinal nematodes of dogs and cats is not reported conforming to the dosage and schemes used in Europe so far. A field study among dogs, cats and puppy litters was therefore performed with emphasis on the suppression of egg shedding by young animals (**Chapter 7**).

The knowledge of *Toxocara* epidemiology by veterinary practitioners, physicians, pet owners and non-pet owners is investigated to get a better understanding of the current practices of

education and the need for specific information (**Chapter 8**). The effect of a government education campaign performed in 1993 on awareness of *Toxocara* and toxocarosis on these groups is involved.

Finally the results are discussed in the context of data from the literature (**Chapter 9**).