

OCCURRENCE OF HELMINTH INFECTIONS IN DOGS IN FIVE
RESOURCE-LIMITED COMMUNITIES IN SOUTH AFRICA

by

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Submitted in partial fulfilment of the requirements for the degree of

Magister Scientiae (Veterinary Science)

in the

Department of Veterinary Tropical Diseases

Faculty of Veterinary Science

University of Pretoria

Pretoria

South Africa

2000



My son, if thou wilt receive my words, and bide my commandments with thee;
So that thou incline thine ear unto wisdom, and apply thine heart to understanding;
Yea, if thou criest after knowledge, and liftest up thy voice for understanding;
If thou seekest her as silver, and searchest for her as for hid treasures;
Then shalt thou understand the fear of the Lord, and find the knowledge of God.
For the Lord giveth wisdom: out of his mouth cometh knowledge and understanding.

Proverbs 2: 1 - 10

Dedicated to my parents

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to Ms. M James from the National Council of the Society for the Prevention of Cruelty to Animals (NSPCA), Ms. Y Berridge and Mr. R Mathebela from Boksburg SPCA for their valuable assistance in the Boksburg area. I thank Prof. L Fourie and Mr. E Williams from the University of the Orange Free State for their contribution during the collection of samples and data from Bloemfontein.

Prof. C M E McCrindle from the Department of Paraveterinary Sciences, Faculty of Veterinary Science is thanked for organising the three Veterinary Needs Appraisals (VNAs) and inviting the author to participate.

The technical assistance of Mr. H M Boshoff, Ms. S Mangera, Mr. T Matjila, Ms. S A Milne and Ms. R Morobane from the University of Pretoria is greatly appreciated. Proff. I G Horak, B L Penzhorn and R C Tustin are thanked for their constructive comments during the writing up of this project.

Prof. H T Groeneveld and Dr. M van der Linde are thanked for the processing and assistance with the interpretation of the statistical information.

A special word of thanks to Prof. R C Krecek, my promotor, for her patience and guidance throughout this project.


Ms. E Mayhew is thanked for the maps, Ms. C Seegers for the illustrations of the Body Condition Score System and Ms. H Smit for assistance with the photography during the project.

The financial support from the Faculty of Veterinary Science of the University of Pretoria, the National Research Foundation and Bayer Animal Health is gratefully acknowledged.

DECLARATION

During the course of the project, Mr. H M Boshoff, Mr. T P Matjila, Ms. S.A. Milne, Dr. J.I. Rajput and Mr. E. Williams assisted with the collection of samples in some of the study areas. Ms. S. Mangera, Ms. S.A. Milne and Ms. R. Morobane supported the project by mounting some of the specimens for identification. Ms. E. Mayhew and Ms. C. Seegers made the drawings of body condition scoring and the maps used in this document.

With the exception of the assistance mentioned above, this dissertation is the candidate's own original work. It has not been previously submitted and is not currently being submitted in candidature for any other degree.

Candidate 
W.N. Minnaar

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ABSTRACT

Occurrence of helminth infections in dogs in five resource-limited
communities in South Africa

by

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SUMMARY

Our knowledge of helminth parasites of dogs in South Africa is limited. The current study describes the helminth status in dogs from five resource-limited areas, which included two cross-sectional surveys in Boksburg and Bloemfontein, and three Veterinary Needs Appraisals (VNAs) in Jericho, Zuurbekom and Mamelodi. The VNAs were supplemented with questionnaires that were completed with the assistance of the dog-owners, and provided information regarding veterinary care and preventive measures in terms of possible disease, the dog's home environment, diet, and the hygiene status. The prevalence of the various dog helminth species were recorded and compared with the current knowledge of these parasites in South Africa. Attempts were also made to find associations with environmental conditions and management strategies observed during the project. *Ancylostoma* spp. was the most important helminth in dogs due to a high overall occurrence (80%) as well as its importance as a zoonosis. Forty-two percent of dogs necropsied were infected with *Dipylidium caninum*, 21% with *Toxocara canis*, and 20% with *Toxascaris leonina*. Dog helminth parasites that were not well documented in the past such as *Spirocerca lupi* (14%), *Joyeuxiella* sp. (5%) and *Trichuris vulpis* (3%) were also found in this study. Recommendations for the control of helminth parasites in dogs in these areas were made. Although the main focus of helminth parasite control in practice is chemical deworming, additional measures such as regular removal of dog faeces from the environment and prevention of roaming of animals may be even more important. These offer effective worm control at affordable cost to the communities that need it most.

OPSOMMING

Ons kennis van wurmparasiete van honde in Suid-Afrika is beperk. Die huidige studie beskryf die wurmstatus in honde van vyf hulpbronbeperkte gebiede met inbegrip van twee opnames in Boksburg en Bloemfontein en drie Veterinêre Behoeftepeilings (VBPs) in Jericho, Zuurbekom en Mamelodi. Die VBPs is aangevul met vraelyste wat voltooi is met die hulp van die honde-eienaars, wat inligting verskaf het i.v.m. veterinêre sorg en siektevoorkomingsmaatreëls, sowel as die omgewing, dieet en higiënestatus van die honde. Die voorkoms van die onderskeie wurmspesies is genoteer en vergelyk met die huidige kennis van die parasiete in Suid-Afrika. Daar is ook gepoog om 'n verband te vind met die omgewingstoestande en betuurspraktyke soos waargeneem tydens die projek. *Ancylostoma* spp. was die belangrikste wurm in honde vanweë twee redes: 'n hoë algemene voorkoms (80%), sowel as sy belangrikheid as 'n soönose. Van al die honde wat nadoods ondersoek is, was 42% besmet met *Dipylidium caninum*, 21% met *Toxocara canis*, en 20% met *Toxascaris leonina*. Wurmparasiete van honde wat in die verlede in die literatuur verwaarloos is, byvoorbeeld *Spirocerca lupi* (14% voorkoms), *Joyeuxiella* sp. (6%) en *Trichuris vulpis* (3%) was ook teenwoordig gedurende hierdie studie. Aanbevelings vir die beheer van wurmparasiete in honde in die betrokke areas is gemaak. Alhoewel die klem by wurmparasietbeheer in die praktyk hoofsaaklik val op chemiese ontworming, is alternatiewe bestuursmaatreëls, bv. gereelde verwydering van hondemis uit die omgewing en die inperking van honde, waarskynlik meer belangrik. Hierdie maatreëls bied doeltreffende, bekostigbare wurmbeheer aan die gemeenskappe wat dit die meeste nodig het.