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

by

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

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Contents</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chapter 1</strong></td>
<td>General introduction</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Aims</td>
<td>2</td>
</tr>
<tr>
<td><strong>Chapter 2</strong></td>
<td>Literature review</td>
<td>4</td>
</tr>
<tr>
<td>2.1</td>
<td>Common helminth parasites of dogs in South Africa</td>
<td>4</td>
</tr>
<tr>
<td>2.2</td>
<td>Study areas</td>
<td>8</td>
</tr>
<tr>
<td>2.3</td>
<td>Biological samples from live animals and at necropsy</td>
<td>11</td>
</tr>
<tr>
<td>2.3.1</td>
<td>Blood samples</td>
<td>11</td>
</tr>
<tr>
<td>2.3.2</td>
<td>Faecal samples</td>
<td>14</td>
</tr>
<tr>
<td>2.3.3</td>
<td>Adhesive tape swabs</td>
<td>16</td>
</tr>
<tr>
<td>2.3.4</td>
<td>Organ samples</td>
<td>17</td>
</tr>
<tr>
<td>2.4</td>
<td>Estimation of body condition</td>
<td>20</td>
</tr>
<tr>
<td>2.5</td>
<td>Criteria for estimation of dog age</td>
<td>25</td>
</tr>
<tr>
<td>2.6</td>
<td>Statistical analyses</td>
<td>27</td>
</tr>
<tr>
<td><strong>Chapter 3</strong></td>
<td>Helminth occurrence in dogs from resource-limited communities in Boksburg, Gauteng Province</td>
<td>28</td>
</tr>
<tr>
<td>3.1</td>
<td>Background</td>
<td>28</td>
</tr>
<tr>
<td>3.2</td>
<td>Materials and methods</td>
<td>30</td>
</tr>
<tr>
<td>3.3</td>
<td>Results</td>
<td>31</td>
</tr>
</tbody>
</table>
Chapter 4  Helminth occurrence in dogs from resource-limited communities in Bloemfontein, Free State Province

4.1 Background  45
4.2 Materials and methods  47
4.3 Results  48
4.4 Discussion  54

Chapter 5  Helminth occurrence in dogs from resource-limited communities in Jericho, North-West Province, and Zuurbekom and Mamelodi, Gauteng Province

5.1 Background  58
5.2 Materials and methods  65
5.3 Results  67
5.4 Discussion  68

Chapter 6  Socio-economic questionnaires completed with the assistance of dog-owners in Boksburg, Jericho, Zuurbekom and Mamelodi

6.1 Introduction  75
6.2 Materials and methods  75
6.3 Results  78
6.4 Discussion  82
Chapter 7  Conclusions  85

References  93

Appendix A  Socio-economic questionnaire used during semi-structured interviews with dog-owners of Boksburg, Jericho, Zuurbekom and Mamelodi  96
List of figures

Fig. 2.1  *Ancylostoma caninum* showing two pairs of three-pronged teeth  

Fig. 2.2  *Ancylostoma braziliense* showing ventral cutting plates  

Fig. 2.3  The geographic locality of the five study areas in South Africa. These included Jericho, Mamelodi, Zuurbekom, Boksburg and Bloemfontein  

Fig. 2.4  Collection of a blood sample from a dog after euthanasia  

Fig. 2.5  Equipment used for the collection and processing of blood samples  

Fig. 2.6  Equipment used for the collection and processing of faecal samples  

Fig. 2.7  Equipment used for collecting adhesive tape swabs  

Fig. 2.8  Collecting an adhesive tape swab from a dog in Mamelodi  

Fig. 2.9  *Toxocara canis* head and tail, terminal appendage on the male tail and oesophageal bulb  

Fig. 2.10  *Toxascaris leonina* head and tail. Note there is no oesophageal bulb, nor is there a terminal appendage on the tail of male  

Fig. 2.11  Dog condition score 1  

Fig. 2.12  Dog condition score 2  

Fig. 2.13  Dog condition score 3  

Fig. 2.14  Dog condition score 4  

Fig. 2.15  Dog condition score 5  

Fig. 3.1  The geographic locality of Boksburg in Gauteng Province  

Fig. 3.2  Area map of Boksburg
Fig. 3.3 Interviewing dog-owners in Holomisa, outside Boksburg 30
Fig. 3.4 Helminth parasite species identified in faecal flotations of dogs (n=164) from Boksburg 35
Fig. 3.5 Mean number of nematodes recovered from dogs (n=69) necropsied in Boksburg 35
Fig. 3.6 Nematode species identified and number of dogs infected (n=69) in Boksburg 36
Fig. 3.7 Mean number of cestodes recovered from dogs (n=69) necropsied in Boksburg 36
Fig. 3.8 Number of dogs from which cestodes were recovered (n=69) in Boksburg 37
Fig. 3.9 Trichuris vulpis, male prepuce 41
Fig. 4.1 The geographic locality of Bloemfontein in Free State Province 45
Fig. 4.2 Area map of Bloemfontein 46
Fig. 4.3 A dog being necropsied in Bloemfontein by Mr. Eddie Williams 47
Fig. 4.4 Helminth parasite species identified in faecal flotations of dogs (n=63) from Bloemfontein 52
Fig. 4.5 Mean number of nematodes recovered from dogs (n=63) necropsied in Bloemfontein 52
Fig. 4.6 Nematode species identified and number of dogs infected (n=63) in Bloemfontein 53
Fig. 4.7 Mean number of cestodes recovered from dogs (n=63) necropsied in Bloemfontein 53
Fig. 4.8 Number of dogs from which cestodes were recovered (n=63) in Bloemfontein 54
Fig. 4.9  *Spirocerca lupi* in the oesophagus of a dog from Bloemfontein  
55

Fig. 5.1  The geographic locality of Jericho in North-West Province  
58

Fig. 5.2  Area map of Jericho  
59

Fig. 5.3  The geographic locality of Zuurbekom and Mamelodi in Gauteng Province  
61

Fig. 5.4  Area map of Zuurbekom  
62

Fig. 5.5  Area map of Mamelodi  
64

Fig. 5.6  Collecting a blood sample from a dog in Jericho  
66

Fig. 5.7  Helminth parasites identified in faecal flotations of dogs from Jericho, Zuurbekom and Mamelodi  
68

Fig. 6.1  The author completing a questionnaire with a dog-owner in Jericho, North-West Province  
76

Fig. 6.2  Reasons for owning dogs in the resource-limited communities of Boksburg, Jericho, Zuurbekom and Mamelodi  
78

Fig. 6.3  Basic diet of dogs in the resource-limited communities of Boksburg, Jericho, Zuurbekom and Mamelodi  
79

Fig. 6.4  Deworming remedies reported used for dogs by owners in the resource-limited communities of Boksburg, Jericho, Zuurbekom and Mamelodi  
79

Fig. 6.5  Veterinary procedures in addition to deworming remedies carried out on dogs in the resource-limited communities of Boksburg, Jericho, Zuurbekom and Mamelodi  
80

Fig. 6.6  Veterinary actions in case of illness of dogs in the resource-limited communities of Boksburg, Jericho, Zuurbekom and Mamelodi  
81

Fig. 6.7  Economic Situation Scores (ESS) of dog-owners in Mamelodi  
82
List of tables

Table 2.1 Village, province and categories of samples collected from dogs as well as questionnaires in five resource-limited study areas in South Africa 9

Table 2.2 Body condition scoring (BCS) system for dogs 22

Table 3.1 Number and results of blood samples and adhesive tape swabs examined in dogs from Boksburg 32

Table 3.2 Helminth species recovered from 69 necropsy examinations of dogs in Boksburg 33

Table 4.1 Helminth species recovered from 63 necropsy examinations of dogs in Bloemfontein 50

Table 5.1 Number of blood smears, blood filters, adhesive tape swabs and faecal specimens examined from dogs in Jericho, Zuurbekom and Mamelodi 67

Table 6.1 Economic Situation Score (ESS) Method 77

Table 7.1 Faecal samples of dogs that contained eggs of *Ancylostoma caninum* in the five study areas 86

Table 7.2 Comparative summary of the percentage of helminths recovered from dogs from Boksburg (n=69) and Bloemfontein (n=63) during necropsies 89
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 (VBP)s in Jericho, Zuurbekom en Mamelodi. Die VBP is aangevul met vraaeliste wat voltooi is met die hulp van die honde-eienaars, wat inligting verskaf het i.v.m. veterinerêe sorg en siektevoorkomingsmaatreëls, sowel as die omgewing, dieet en higiênestatus 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 soõose. 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 ontwurming, is alternatiewe bestuursmaatreëls, bv. gereëlde 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.