Prevalence of gastro-intestinal parasite in Donkeys in and around Maiduguri metropolis, Borno state, Nigeria

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Research Paper

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One hundred and one fecal samples from donkeys in different locations within and around Maiduguri metropolis (Cattle market, Zoo and Dalori farm) were examined in order to ascertain the prevalence of gastrointestinal helminthes. Forty one (48.8%) of these infections were mixed, with the contribution of strongyles and strongyloides being highest (35.79%) and least was dictyocaulus and strongyles (1.2%). A total of 8 (11.4%) of the 70 infections in donkeys from cattle market were heavy (3+ and 4+), 2 (8%) and 7(21.2%) from the Zoo and Dalori respectively were also heavy. Donkeys examined from the cattle market had the highest frequency of gastrointestinal parasite infections 50(86.2%). And least frequency of infection was observed from the Zoo 16 (72.1%).

Key words: Gastrointestinal Parasites, Donkey, Maiduguri, Nigeria.

INTRODUCTION

Donkeys (Ass-Equus-assinus) in Nigeria estimated at 7 million are mainly owned by low income earners and peasant farmers (Kyewalabye et al., 1988). The animal however, seem to receive little or relatively no Veterinary care. This is supported by records from the large animal unit of Veterinary Teaching Hospital, Ahmadu Bello University Zaria, Nigeria where in two years, 1995 and 1996 only one donkey was received in an area where there are many donkeys (Kyewalabye and Lawal, 1988). From the large animal unit, Veterinary Teaching Hospital of Maiduguri, no donkey was received from 1988 to 1995, following investigation from the records.

The donkey has been an example of unrestrained liberty, but in bondage after object slavery over laden, underfed and ill used. It was estimated that 55 million donkeys and mules serving key roles in the agricultural economy of the word (FAO, 1994).The heyday of the donkey and its near relative, the mule in the western world was the 19th century, where in the united kingdom the poor man was used for all manner draught purposes (Soulsby, 1986). The sore footed servant have been constantly plagued by parasite throughout this long period of servitude, however, only recently has there been an attempted to study this parasites and to establish what effect this parasitism have on the well being of donkeys. Nematode infection was the main problem reported in donkeys admitted to Veterinary clinics. A heavy internal parasite burden can adversely affect the health of a donkey particularly when it is called upon to work and as it is often the case, is undernourished and stressed (Sonja et al., 2000). The control of gastrointestinal and haemoparasites in horses and ponies, on the other hand, has been extensively studied throughout the world. Vast amount of money are spent each year for purchase of antihelmintics, Veterinary care and pharmaceutical research of horses which were
Table 1. Distribution of different species of parasites among young and adult donkeys.

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Strongyle</th>
<th>Strongly-loides</th>
<th>Ascaris</th>
<th>Anaploce-phala</th>
<th>Trichon-ema</th>
<th>Gastro-Discus</th>
<th>Paranoplo-cephala</th>
<th>Dictyo-caulus</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young 24</td>
<td>24 (72.2%)</td>
<td>8 (26.6%)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>2 (6.7%)</td>
<td>18</td>
</tr>
<tr>
<td>Adult 77</td>
<td>52 (67.5%)</td>
<td>35 (45.5%)</td>
<td>9 (11.6)</td>
<td>4 (5.2)</td>
<td>5 (6.5)</td>
<td>2 (2.6)</td>
<td>1 (1.3)</td>
<td>2 (2.6)</td>
<td>110</td>
</tr>
<tr>
<td>Total 101</td>
<td>79 (78.4%)</td>
<td>43 (42.5%)</td>
<td>10 (9.9)</td>
<td>4 (3.9)</td>
<td>6 (5.9)</td>
<td>2 (1.9)</td>
<td>2 (1.9)</td>
<td>2 (1.9)</td>
<td>128</td>
</tr>
</tbody>
</table>

Values in brackets are percentages of the various parasites in both young and adult donkey.

Results and Discussion

One hundred and one faecal samples from donkeys were examined, out of which 84 (83%) were positive for different helminth eggs. Species most commonly found were Strongyles, 59 (58%) and least incriminated were Dictyocaulus 2 (2%), Paranoplocephala 2 (2%) and Gastrodiscus 2(2%). Forty one (48.8%) out of the 84 infections were mixed. Strongyle and Strongyloides accounted for 30 (35.5%) of the 84 infection. Others were Strongyles and Ascaris 5(5.9%), Anoplocephala, Ascaris and Strongyloides 11(1.2%), Trichonema and Strongyle 3(3.5%). Dictyo-caulus and Strongyles 1(1.2%). Donkeys from the cattle market had the highest frequency of gastrointestinal parasites infection. Out of the 58 faecal samples examined from the cattle market 50 (86.2%) were found positive for...
observed in the zoo donkeys, out of 22 faecal samples 16 (72.7%) were positive for helminthes eggs. Out of 21 faecal samples examined from Dalori village 18 (85.7%) were positive for helminthes eggs. Infection was more in older animals with 71 (92) out of 77 animals being infected (Tables 2 and 3). Out of 52 male donkeys 44 (85%) were positive for helminthes eggs. This result was comparable with the 40 (82%) positive result observed in 49 female donkeys (Table 3). Eight (11.4) of the 70 infection in donkeys from the cattle market were heavy (3+ and 4+), and 62 (88.6%) were of mild infection (1+ and 2+). Seven (21.2%) of the 33 infection in donkeys from Dalori village were heavy (3+) and 26 (78.8%) were of mild infection (1+ and 2+). Strongyles and Strongyloides species were mainly responsible for infections with 57 (81.6%) of these being responsible for the 70 infection from the cattle market, and 16 (64%) being responsible for the 25 infection from the zoo, and 29 (87.8%) being responsible for the 33 infections observed from Dalori village. Most commonly encountered helminthes in this study were Strongyles and Strongyloides (Table 4). This is in agreement with the finding of Nwosu et al. (1990), while working in rural communities in Borno state.

The soil and climatic conditions were the same for both studies. Grabber, 1970, while working in Chad republic between 1954 to 1969 reported incidence of 84% helminthes infections in an unusually dry year in donkeys in which over 74% were Strongyles. Chad is an adjoining country to Maiduguri and has the same type of climate and soil. The 83% prevalence of helminthic infection in this study indicates the lack of proper Veterinary care of the animals and constitutes a serious challenge in area. It was confirmed from the owners that the donkeys were never dewormed nor had been treated and were kept under free range conditions. The result showed that the overall prevalence of helminthics infections in donkeys (83%) was lower than that reported by Okon, (1976), Ajayi and Ajayi (1983) in which 93.5% and 98% prevalence were reported respectively. This may be due to climatic difference between Ibadan, Jo sans Maiduguri. The vegetation of Maidugururi is sahel savannah type with long dry season. Moreover samples were collected during dry season, during which larval migration was low. Helminth infection rates were significantly higher in adult than young animals ($X^2 = 19.6$), the difference could be due to length of period of challenge by the parasite maternal immunity and therefore resist the infection or the young animals may become debilitated from the infection and die as a result of other infections. Infection encountered in male (83%) and female (82%) were comparable, and there was no significant difference in infection rates ($X^2 = 0.16$). Controlling all gastrointestinal parasites in donkeys requires strategic dosing with ivermectin because of its efficacy against larvae. This regimen should be backed up by good stable hygiene, proper pasture management, rotational grazing, isolation and immediate treatment of newly acquired animals, and regular faecal testing. Where such strategy is impractical, dosing at six weekly intervals interchanging the various types of anthelmintics is advocated. Considering the socio-economic importance of donkeys in the society, the government should include the purchase of Veterinary drugs in the budget to cover both urban and rural communities. The government should also use the various media and provide extension workers to educate the public about the importance of regular deworming of donkeys and general Veterinary care of the animals.

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### REFERENCES


