Prevalence of Gastrointestinal Parasites Of Goats Slaughtered At Aduwawa Abattior, Benin City, Edo State, Nigeria

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ABSTRACT
The study of the prevalence of gastrointestinal helminths of goats slaughtered in Aduwawa abattoir, Benin City, Edo state was conducted from March 2013 to February 2014. Four hundred and ninety two (492) goats were examined for the parasites. The gastrointestinal tracts comprising of the small intestine, large intestine, liver, bile duct and rumen were examined. The following gastrointestinal helminth parasites were found in the following prevalence: Monieza benedeni (34.76%) and Paramphistomum cervi (21.54%). The overall prevalence of gastrointestinal parasites examined was 61.59% among the goats. Female goats had a higher prevalence (63.64%) when compared to male goats (61.07%). The infection rate was higher in rainy season (73.36)as compared to the dry season (50 %) and there was no significant difference (p<0.05) between the prevalence of parasitic infection among samples examined during the seasons and among the sexes examined. Poor system of animal husbandry was noted to be a significant factor to the prevalence of these parasites among the goats.

Keywords: Prevalence, Helminths, Goats, Benin City

INTRODUCTION
The Goat is an important livestock species all over the globe and especially in tropical and subtropical regions. It has a pivotal place in small scale farming and the rural economy of developing societies by generating employment and supplementing house hold income. Goats are primarily raised for leather, milk and hair production (Hassan et al., 2011). In many parts of the world, goats and cattle production is a profitable enterprise because of the high demand for dietary animal protein (Anaeto et al., 2009). Goats as small ruminants have some advantages over larger animals such as cattle, because of their lower purchase price, higher fecundity and prolificacy, ability to survive on low quality diet in difficult conditions, availability and ease domestication. Goats harbour a variety of gastrointestinal parasites that affect the growth as well as production of the animal. Goats are known to contribute substantially to the supply of animal protein in most parts of the world particularly in developing nations. Goat keeping is known to increase the economic status of the rural poor. According to Jagram (2012) gastrointestinal parasites have been a major constrain in productivity of goats, especially those that are allowed to roam freely and not properly reared. In many ways, the effects of these parasitic helminthes are more deadly while appearing to be harmless and lead to debilitating digestive and respiratory disturbances with attendant retardation in growth and less of meat production. However, high mortality rates as a result of infections by gastrointestinal parasites remain major constraints to small ruminant production (Perry et al, 2002). Parasitism thrives in livestock in the tropics because of improper care, unhygienic environment. Some of the gastrointestinal parasites that affect ruminant are nematodes (such as Ostergia sp., Capillaria sp., Trichuris sp.,) Trematodes (such as Paramphistome cervi) and cestodes (such Monieza sp.,) Gastrointestinal parasites in goats cause economic hardship in poor farming communities. Intestinal
Parasites cause inefficient feed utilization leading to reduced growth rate in young animals, reduced weaning weights, low milk production, enhanced susceptibility to other diseases and poor meat production (Barger, 1997).

Historically, gastrointestinal helminthes infections have been associated with great economic losses to farmers throughout the world, these loses manifest through morbidity in acute cases and in chronic infection reduced weight gains, reduced food conversion, abortion, infertility, reduced meat and milk production (Ogunrinade, 1984; Karki, 1987; Bariabajaya, et al., 1995). Attindehou and Salifou (2012) also carried out a study in other to access the prevalence and seasonal variation of cestodes infections in small ruminants of Benin from December 2010 to November 2011. During the process 756 small ruminants was randomly selected (366 sheep and 390 goats) was slaughtered and autopsied. Surface muscles, viscera and cavities (abdominal, thoracic and pelvic) was inspected for recovering cysts (metacestodes) and adult cestode. It was observed that in both sheep and goats, two larval cestodes have been found. They were cysticercus and cysticercus ovis with respectively, 55.57 and 3.44% of prevalence. Regarding adult cestodes, only Monenzia expensa was diagnosed with an overall prevalence of 29.5%. The whole infections were prevalent all seasons with nevertheless high rate in rainy seasons.

Review of parasitic research in Nigeria has revealed that most of the surveys have been carried out for prevalence of parasites around different areas in Nigeria. However, there are certain geographical regions in which livestock population needs to be examined for the presence of gastrointestinal helminthes. Several studies carried out on gastrointestinal helminthesis of goats showed that the prevalence of the infections varies from place to place and according to the age groups of goats. Studies in various parts of the world have shown that the high incidence of these infections are seasonally related (Sykes, 1994). Although they occur in all age groups, they are found to be more prevalent in kids when exposed to contaminated feed and water (Waruiru et al., 1994).

Studies have shown that helminth parasites are by far the most serious causes of production losses in farmed ruminants and the nematodes are indisputably the cause of serious production losses to ruminants in sub-Saharan Africa, and indeed worldwide (Ng’ang’a et al., 2004; Odoi, 2007; Kanyari et al., 2009). Amadi et al.2012 Also carried out a study between June and December 2009 in Umuariaga Ikwuano Umuahia Abia State to determine the prevalence intensity of infection and public health implication of helminth parasite infection of West African dwarf goat in the area.164 faecal sample were examined for helminth parasites using normal saline method.133(81.1%) were infected. The prevalence rate of nematode 86.5%, trematode 73.7% while cestode 6.7% was observed. The infection rate for females reveals high burden of Nematode 96.8%, followed by Trematode 65.6% and a least was 6.3%. The male showed lower Nematode burden of 83.1% when compared with female and higher Trematode of 76.2% while cestode recorded 6.9%. Generally schinstosoma species have highest prevalence rate 21.1% followed by oesophagostomum 16.7%, Charbetis ovis 14.0%. A lower prevalence was recorded in dictoroelium species 3.1%, Trichuris 1.8%, Dictyocaulus species of 0.9%, Nematodirus 0.7% respectively.

The objectives of this study was to investigate the gastrointestinal helminth parasites present in goats slaughtered at Aduwawa abattoir in Benin City, Edo state, Nigeria.

MATERIALS AND METHODS

Study area
The study was carried out in Uhunwode Local Government Area, which lies north of Benin City, Edo state, Nigeria. It is situated within longitudes 5°45’E, and 6°0’E, and latitudes 6°15N and 6°45’N. It has an area of 2,033km² and a population of about 120,813. This study was conducted between the months of March 2013 to February 2014.

Sample collection: Samples were collected between 6am and 9am during which goats were slaughtered at Aduwawa abattoir. During the period of slaughtering, the intestines, livers, bile ducts, were carefully examined for presence of internal parasites. The various parasites were taken from the various organs and washed several times with normal saline and preserved in 70% alcohol as described by Urguahart and...
Amour, 1997. While the cestodes and the trematodes were flattened with 10% formalin and also preserved with the same 10% formalin.

RESULTS
A total of 492 goats were examined between the months of March 2013 – February 2014. 171 were infected with cestodes (Monieza sp), 106 were infected with trematodes (Paraphistomum sp.). The overall prevalence of gastrointestinal parasites in goats was 61.59% among the goats. From among the 492 examined 171 (34.76%) were infected with Monieza benedeni and 132 (21.55%) infected with Paramphistum cervi. Monieza benedeni having the highest prevalence with overall mean intensity of 96.04 while Paramphistum cervi have the highest mean intensity of 219.18 as shown in Table 1 below. Table 2 shows the prevalence and mean intensity of gastrointestinal parasites examined according to sex. Among the female examined, 63 were infected and 8078(63.64%) of parasites were found. Among 393 male that were examined, 240 were infected and 26846(61.07%) were recovered. The highest prevalence rate was found in female (63.64%) and mean intensity of 115.26. while table 3 illustrates the seasonal variation of parasites among goats, 124(50%) were infected during dry season as against 179(73.36%) of goats infected during rainy season. The prevalence of parasites was higher during the rainy season (73.36%) as compared to 43.60% during the dry season.

Table 1: Overall prevalence and mean intensity of gastrointestinal parasites recorded among 492 goats slaughtered atAduwawa abattoir.

<table>
<thead>
<tr>
<th>Parasites</th>
<th>No. infected</th>
<th>Prevalence (%)</th>
<th>Total no. recorded</th>
<th>Mean intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monieza benedeni</td>
<td>171</td>
<td>34.76</td>
<td>171</td>
<td>1</td>
</tr>
<tr>
<td>Paramphistum cervi</td>
<td>132</td>
<td>21.55</td>
<td>28932</td>
<td>219.18</td>
</tr>
<tr>
<td>Total</td>
<td>303</td>
<td>61.59</td>
<td>29103</td>
<td>219.18</td>
</tr>
</tbody>
</table>

Table 2: Prevalence mean intensity of gastrointestinal parasites according to sex of goats.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Host examined</th>
<th>No. infected</th>
<th>Prevalence (%)</th>
<th>Total no. recorded</th>
<th>Mean intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>99</td>
<td>63</td>
<td>63.64</td>
<td>8078</td>
<td>128.22</td>
</tr>
<tr>
<td>Male</td>
<td>393</td>
<td>240</td>
<td>61.07</td>
<td>26848</td>
<td>111.86</td>
</tr>
<tr>
<td>Total</td>
<td>492</td>
<td>303</td>
<td>61.59</td>
<td>34924</td>
<td>115.26</td>
</tr>
</tbody>
</table>
### Table 3: Seasonal variation and mean intensity of parasites among goats slaughtered at Aduwawa abattoir.

<table>
<thead>
<tr>
<th>Seasons</th>
<th>Host examined</th>
<th>No. infected</th>
<th>Prevalence (%)</th>
<th>Total no. recorded</th>
<th>Mean intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainy</td>
<td>244</td>
<td>179</td>
<td>73.36</td>
<td>23558</td>
<td>130.49</td>
</tr>
<tr>
<td>Dry</td>
<td>248</td>
<td>124</td>
<td>50</td>
<td>11566</td>
<td>93.27</td>
</tr>
<tr>
<td>Total</td>
<td>492</td>
<td>303</td>
<td>61.59</td>
<td>34924</td>
<td>115.26</td>
</tr>
</tbody>
</table>

### DISCUSSION

According to Kedar et al., (2012) prevalence of gastrointestinal parasites is considerably influenced by the climatic conditions and as far as possible, the evidence of the distribution and prevalence of the diseases is presented by geographical area, roughly corresponding to climatic conditions.

In this present study, trematode (21.54%) were found to be lower than cestodes (34.76%) which is in agreement with the earlier reports by Soulsby (1982) where he observed that trematodes recorded lower rates (73.7%). This is because they require intermediate hosts to complete their life cycle and so transmission is dependent on the availability of intermediate host Lymnaea spp (snail).

In this present study there is a significant difference among sex (p<0.05). The high prevalence of infections in relation to sex in this study was found to be higher in female (63.61%) to earlier reports by Lamiriouil et al., (2013), where they found that helminth parasites were higher in male (86.6%) and female (73.6%). The higher percentage of infestation in female may be due to the physiological condition of the animals during pregnancy and lactation (production activity) and also the absence of sufficient food required for production which may lead to the lowering of the body resistance of the females. The possible reasons for these differences observed in the prevalence of the gastrointestinal helminthes parasites recorded in this study and that recorded by previous researchers may be because of the variation in locations and management practices (Waruiru et al., 1993).

In conclusion, gastrointestinal parasites are prevalent in goats as observed in this study carried out in Aduwawa abattoir, Benin city, Nigeria and could be implicated in health and production of the animals. Thus, appropriate measure should be implemented in the abattoir in other to reduce the infestation risk.

### REFERENCES


