Prevalence of Gastrointestinal Parasite in Goats in Shillong, Meghalaya, India

Author(s): Dr. Subhasish Bandyopadhyay, Mrs. Pallabi Devi, Dr. Asit Bera, Dr. Samiran Bandyopadhyay, Dr. Debasis Bhattacharya

Corresponding Author: Dr. Subhasish Bandyopadhyay, Senior Scientist, Eastern Regional Station of Indian Veterinary Research Institute, 700037 - India

Submitting Author: Dr. Subhasish Bandyopadhyay, Senior Scientist, Eastern Regional Station of Indian Veterinary Research Institute, 700037 - India

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Prevalence of Gastrointestinal Parasite in Goats in Shillong, Meghalaya, India

Abstract

A study was conducted regarding the level of burden of gastrointestinal parasites in goat slaughtered for human consumption in Shillong, Meghalaya during June, 2001 to June, 2006. A total of 250 gastrointestinal tract were examined for adult parasites. The intensity of parasitic infection was recorded maximum in rainy season and least during winter. The parasite recorded was O. venulosum, O. columbianum, Haemonchus contortus, Bunostomum trigonocephalum, Trichuris species, Trichostrongylus colubriformis, Moniezia expansa, Moniezia benedeni, Gaeigeria pachysalis, Amphistom species. One of the interesting finding was the prevalence of Haemonchus contortus in reticulum in 76.8% cases.

Introduction

Gastrointestinal Parasite is one of the major and wide spread problem in rearing of goats in this region due to high rainfall and humidity prevailing in this region which reduces the productivity (Akerejola et al, 1979) and also reduces weight gain and other production loss. This problem could be addressed by adopting better manage mental practices and proper control measures during monsoon and post monsoon period. Studies on the incidence of gastrointestinal parasites in goats have been reported from different states of India (Bali, 1973, Mishra et al., 1974, Hirani et al. 1999). But information on the prevalence of gastrointestinal parasite from Meghalaya is scanty, although limited data were reported by Yadav and Tandon (1989). The present investigation has therefore been undertaken to know the prevalence of gastrointestinal parasites in goat slaughtered for human consumption. Another interesting finding tempted us to undertake the present study was to confirm the abnormal site of predilection of Haemonchus contortus parasite. As we know that Haemonchus contortus is known as large stomach worm or abomasal worm of goat, sheep, cattle and many other wild animal throughout the world and its unique site of predilection is in the abomasum (Soulsby, 1982). But in our study most of the parasites were isolated from the reticulum of goat.

Methods

The study was conducted in and around of Shillong, the capital city of Meghalaya. A total of 250 gastrointestinal tract were collected from local unorganized abattoirs of different parts of Shillong during June, 2001 to June, 2006. Since almost all the population of these areas are meat eater, therefore goat meat is one of the most popular meat among the people. Each and every part of the gastrointestinal tract was examined according to the method given by Hansen and Perry (1993). After isolation of the parasites from GI tract, were identified under microscope according to their morphological features (Soulsby, 1982).

Results & Discussion

Out of 250 GI Tract examined 231 (92.4%) were found to be positive for single or mixed infection. The maximum incidence was of Haemonchus contortus from reticulum with a percentage of 76.80% and the least being Amphistomum species (16.8%)(Table 1). The prevalence of gastrointestinal parasite observed in the study area was in general agreement with the findings of Yadav and Tandon (1989) who also reported prevalence of Haemonchus contortus, Bunostomum trigonocephalum, Oesophagostomum columbianum, and Trichuris ovis. Though the site of predilaction of Haemonchus contortus was the abomasum, but in our study most of the Haemonchus was isolated from reticulum (76.8%) rather than abomasum (60.28%) of goats (Fig 5). Morphological studies of these two parasites isolated from different organ revealed no significant changes in any of the morphological characteristics. This changes of site of predilection of these parasites may be either due to new strain of the parasites or this may also due to the effect of some locally available herbs having some partial anthelmintic effect. These parasites needs to be studied further for confirmation...
of the changes of site of predilaction.

From the study it has been found that an inverse relationship between the percent of prevalence of Trichuris spp and all other Gastrointestinal parasites isolated from intestine of goat (viz. Oesophagostomum spp., Trichostrongylus spp, Gaigaria spp and Bunostomum spp) (Fig. 2). This inverse relationship is having direct correlation with the rainfall pattern of the region. During the year 2003-2004 the average rainfall of the region (110.66 mm) was low as compared to 2002-2003 (149.88 mm) and 2004-2005 (165.89 mm). But as the Prevalence of Trichuris spp was inversely related with rainfall, it showed the inverse trend with rainfall pattern of this region (Fig. 3).

The prevalence of Trematodes and cestode infection showed direct relationship along with rainfall but vary in intensity of infection between Moniezia spp and Amphistome infection in goat (Fig. 4).

References

Illustrations

Illustration 1

Table 1: Gastro Intestinal parasites in Goat in Meghalaya. From 2001 to 2006

<table>
<thead>
<tr>
<th>Total no of GI tract examined</th>
<th>Total No.found +ve</th>
<th>Total % +ve</th>
<th>Parasite revealed</th>
<th>N o +ve</th>
<th>% +ve</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>231</td>
<td>92.4%</td>
<td>Haemonchus contortus (R)*</td>
<td>192</td>
<td>76.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Haemonchus contortus (A)**</td>
<td>157</td>
<td>60.28</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Oesophagostomum venulosum</td>
<td>177</td>
<td>70.80</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Oesophagostomum columbiaun</td>
<td>163</td>
<td>65.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Trichuris species</td>
<td>167</td>
<td>66.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Trichostrongylus colubriformis</td>
<td>126</td>
<td>50.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Monezia expansa</td>
<td>100</td>
<td>40.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Moniezia benedenai</td>
<td>95</td>
<td>38.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gaigaria pachysalis</td>
<td>74</td>
<td>29.60</td>
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<td>Bunostomum trigonocephalum</td>
<td>56</td>
<td>22.40</td>
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<td></td>
<td></td>
<td></td>
<td>Amphistomum species</td>
<td>42</td>
<td>16.80</td>
</tr>
</tbody>
</table>

*-- *H. contortus* isolated from Reticulum. **-- *H. contortus* isolated from Abomesum.
Illustration 2

Fig: 1. Trend of Haemonchus infection in Goat during 2001-2006 in Meghalaya
Illustration 3

Fig:2. Prevalence of Gastrointestinal Parasites isolated from GI tract of goat during 2001-2006 in Meghalaya
Illustration 4

Fig: 3. Trend of Trichuris sp. infection in relation to rainfall isolated from GI tract of goat during 2001-2006 in Meghalaya
Illustration 5

Fig:4. Prevalence of Trematode and Cestode infection isolated from GI tract of goat during 2001-2006 in Meghalaya
Illustration 6

Fig 5. Haemonchus sp. recorded from the reticulum of goat.
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