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Epidemiology of Helminth Parasites of West African Dwarf Goat(Capra Hircus) in Umuariaga in Ikwuano L.G.A, Abia State.

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ABSTRACT: A study was conducted between June and December 2009 in Umuariaga Ikwuano Umuahia Abia State to determine the preverlence 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. Major factors identified to be responsible for this high prevalence are poor system management, illiteracy , lack of deworming programme, overcrowding of goats and aged farmers in business. 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 prevelence 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 rate of infection with regards to sex is however not satisfactory significant ($p<0.05$).The public health implication of some zoonotic important species for example fasciola and schistsoma with high tendency of transmission within the area were highlighted. Furthermore, poor management of goat rearing environment sanitation and personal hygiene were also emphasized to safeguard the health of the general public.© JASEM

West African Dwarf Goats are predominantly a bread of ruminants in Nigeria particularly Southern Nigeria. There is tremendous demand for these ruminants not only for food but also for social and religious ceremonies. The matured he-goats are used for sacrifices and milk from the nanny goats are of immense nutritional value (Ikpeze *et al.* 2009). Farmers depend on the sale of livestock and their products as a source of income.

The aim of this study was to investigate the current status of helminth parasitic infection in West African Dwarf goats in Umuariaga Umuahia Abia State.

Parasitic worms have been identified as a major constrain in the productivity of this animal especially intensive and semi-intensive system of husbandry. In many ways, the effects of these parasitic helminthes are more insidious and lead to debilitating digestive and respiratory disturbance with retardation in growth and loss of meat (Jayram 2002)

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A number of deaths of this animal have been attributed to the infection of these parasitic worms. Helminthes that affect West African dwarf goats are basically trematodes, cestodes and nematodes (Kumba *et al* 2005). The transmission success of the majority of this economically important helminthes parasites depends almost entirely on ingestion of the egg through contaminated food or water. The consumption of infective and larva by the host followed by excretion of pre-infective stage onto the pasture continues the infection of the other animals (Fakae and Nwalusi 2000). This group comprise of the genera moniezia Spp. Monieizia Spp ruminants e.g. goats and cattle causes infections by ingesting herbage contaminated with the invites carrying the infection cause poor growth, diarrhea, physical and mental retardation and even death (Ojating, 2002). The problem of some helminth parasites of West African Dwarf goats is that some of them are zoonotic and can infect human beings as intermediate host (Amadi 2001, Umoh 2001). Results from this Investigation will provide information about the prevalence of gastrointestinal helminthes in WAD goats in Umuariaga, highlight the implications of these pathogenic helminthes intensity awareness of these parasitic helminthes through agricultural extension officers and relevant agencies such that through corroborative efforts, there will be effective preventive and control measures of the parasite among the farmers and goat breeders.

MATERIALS AND METHODS

Fresh Feacal Samples of about 30-60g were collected by wearing disposable Nylon gloves to avoid contamination. These well labeled samples were stored in the refrigerator for laboratory screening. Examination of each faecal sample for ova of helminth parasite was performed using direct wet mount of normal saline (Urguhart and Amour 1997). A small portion of the faecal sample was emulsified with a few drop of normal saline on a clean grease free slide covered with covering ship, air bubble and over floating was avoided. Helminth eggs have district characteristics which were used for their identification and eggs with similar features and parasites

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within the same genus were grouped together as described by (Sonbly 2006).

RESULTS AND DISCUSSION

164 faucal Samples were screened during the studying period. 133 (81%) were found to be positive for the helminthes infections. The prevalence rate helminthes for the different classes of helminthes showed that 115 (86. 5%) were found to be positive for nematode positive, 98 (73/7%) trematode and cestode had 9 (6.7%) as showed in table 1 female were found to be more infected with Nematode (96.8%) while the males were more infected with trematode parasites (76.2%). There was no significant difference ($P < 0.05$) in the infestation of cestode parasite as both the females and males recorded 6.3% and 6.0% respectively, (Tables 2 3). Other parasite eggs recovered were those of schistosome 47 (21.1%) charbetia 31 (14.0%), oesophagostomum 37 (16.7%), fasciola 25 (11.2%), Bunostomum 28 (12.6%), Paramphistone 19 (8.6%), Moniezie 9 (4.1%) Dicrocoelium 7 (3.1%), Trichuria 4 (1.8%). Table 4

Analysis of structured questionnaires on the knowledge, attitude and perception on goat rearing among the farmers revealed that majority of the breeders are those with primary education and are mainly farmers followed by those with secondary education this group are civil servants. De-worming and consultation with the veterinary doctors and extension workers are very poor amongst the farmers and goat breeder. Table 5

Table 1: overall Helmintic prevalence rate

No of sample Examined	No infected +ive Samples	Percentage Infected	Helminth class	No infected	Percentage (%0
164	133	81%	Nematode	115	86.5%
			Trematode	98	73.7%
			Cestode	9	6.7%

Table 2: Prevalence According of sSex

MALE				FEMALE
Mo examined 123 No infected 101 c/o infected 82.%				No examined 41 No infected 31 c/o infected 75.6%
Helminth of infected Class + ive sample	Percentage (%) Infected	Helminth Class	No infected (+ive sample)	Percentages% infected
Nematode 84 Tremetode 77 Cestade 7	83.1% 76.2% 7.9%	Nematode Trematode Cestode	31 21 2	96.0% 65.6% 6.3%

Table 3: Helminth Classes and their prevalence rate

Helminth Class	Identified Species	Number infeted	Percentage% infected
Nematode	Charabetia ovis	31	14.0%
	Oesophagostomum	37	16.7%
	Bunoostomum sp	28	12.6%
	Thelazsia sp	8	3.6%
	Cooperia sp	4	1,8%
	Dictyocaulus sp	2	0.9%
	Nematodirus sp	1	9.5%
	Trichuris sp	4	1,8%
Cestode	Moniezie sp	9	4.1%
Trematode	Schistosome sp	47	21.1%
	Fasciola hepatic	25	11.2%
	Dicrocoeluim sp	7	3.1%
	Paramphistome sp	19	8.6%

Table 4: Prevalence of helminth parasite accoding to sex

Male No. 133)			Female (No. 41)		
Helminth Identified	Number dentified	Percentage % infected	Helminth Identified	Number Identified	Percentage (%) Identified
Schistosome species	35	21%	Schistome sp	12	22.2%
Ocsophagostomum sp	27	16.1%	Oesophagotomum sp	10	18..5%
Bunostonum sp	25	14.9%	Bunostonum sp	3	5.6%
Charbetia Ovis	21	12.5%	Charbetia Ovis	10	18.5%
Fasciola Hepotica	21	12.5%	Fascioca gepatica	4	7.4%
Thelazia sp	6	3.8%	Thelazia sp	2	3.7%
Moniczia sp	7	4.2%	Moniezia sp	2	3.7%
Dicrococluim sp	6	3.8%	Dicrococluim sp	1	1.9%
Trichuris sp	3	1.8%	Trichuris sp	1	1.9%
Cooperia sp	2	1.2%	Cooperia sp	2	3.7%
Paramphistome sp	15	8.9%	Paramphistome sp	4	7.4%
			Nematodirus sp	1	1.9%
			Dictyocaulus	2	3.7%

Table 5: Demographic characteristic of goat breeders by Age, educational level and occupation

Age	Frequency	Percentage %	Educational level	Frequency	Percentage	Occupation	Frequency	percentage
30-41	14	31.1%	No formal Education	10	22.2	Farmer	22	48.9%
50-69	17	37.1%	Primary education	22	48.9	Civil servant	8	17.7%
70-80	14	31.1%						
			Secondary and Above	13	29%	Others	15	33.3%
Total	45	100%		45	100%		45	100%

Results In the present study showed high helminth parasite prevalence (81. 1%) This is in agreement with the earlier report of Adrein, *et al* (2001), he observed that nematode are always more prevalent than trematodes and cestodes in ruminant. The reasons are that nematodes do not require intermediate hosts and both larval and adult stages are all infective stages of the parasite (Gibbon 2001). Trematodes however 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) and snails are dependent on season for survival (Soubly 2006). Our findings showed prevalence of moniezie species was 6.8% this agrees with the findings of Urguhart and Amour (1997)and Blaise(1997) which indicated that globally low occurrence of species amongst the helminth infections of Ruminant. Preston and Allonby (1979) also reported that cestodes were really encountered in most environments because of their very complex life cycles

Worthy of note is the prevalence rate of schistsoma species which was 29.3% this high rate of infection is probably due to goats grazing on lands and feeding from herbage infected with cercariae stage of the parasite and also as a result of dry section. During this period the snail population becomes concentrated around natural source of water as these provide fresh vegetation and these praying animals become heavily infected. Oesophagostronum and Bunotomum species are serious helminth of ruminant. These were also reported to be in abundance in goats (Eze and Fakae 1999).

Helminth of zoonotic importance discovered during this study was fasciola and schistosoma species. These helminthes parasites cause fascioliasis and schistomiasis in man. High infestation of goats with these parasites suggests the possibility of future out break if appropriate control measures are not undertaken. Areas suspected to be infested with schistosome species should be avoided while grazing animals and environment where goats are kept should be devoid of snails which are the intermediate host.

During the study it was observed that farmers do not deworm their goats. Not only that they can not affair the cost of this preventive measures, they also lack the knowledge on de-worming and its importance. Furthermore, proper management techniques are lacking. Adequate control and preventative measures could be initiated through collaborative efforts by the government assisted by relevant agencies through mass enlightenment and education of goat breeders on the importance of environmental sanitation, personal hygiene and the risk involved in not washing of hands and clothing properly after handling animals. This was also observed by Agebede and Yesufu (1992) on the transmission of parasite to man through contaminated food and water. Provision of antihelminth drugs to farmers at subsidized rates will go a long way towards reducing morbidity and mortality due to helminth parasitic infections, increase in productivity and improvement in the economic status of the farmers.

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