



EVALUATING THE PREVALENCE OF GASTRO-INTESTINAL HELMINTHS IN CATTLES RAISED IN NEW-BUSSA AND ITS ENVIRONS

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ABSTRACT

*Studies were carried out to evaluate the type of Gastro-intestinal parasites that are prevalent in Cattles raised in New-Bussa, Borgu Local Government area of Niger State in Nigeria and its environs. After the collection of the faecal samples directly from the rectum separately to prevent contamination, it was discovered that ten species of Gastro-intestinal helminth were prevalent in the study area but *Shistosoma bovis* showed the highest prevalent rate which ranges between 19.00 and 27.00. This is closely followed by *Strongyloides* spp with prevalence rate ranging between 11.80 and 17.40. This has gone a long way in affecting the production and reproductive rate of Cattles in the study area. Thus, effective ways of constant deworming should be employed to improve the productivity of the Cattles in the study area.*

INTRODUCTION

Livestock account for as much as one third of Nigeria's agricultural Gross Domestic Product (GDP), which provide income, employment, food, farm energy and manure for man. Livestock fulfill many roles for a substantial number of people in the country. The livestock industry is a major source of government revenue, for example through taxation and export earnings from hides and skins. Cattle are ruminants, which gives them a unique digestive system that allows the digestion of otherwise unusable foods by regurgitating and rechewing them as cud. Cattle were tamed to provide milk, meat and hides and for draft purposes. The need to control internal parasites will exist as long as cattle are grazing pastures. Some of these major endoparasites include the Helminthes known as worms; they have great effect on the cattle and thereby limiting the growth performance and its vitality in livestock industry. Pastures that are heavily stocked generally have a higher parasite burden than lightly stocked ones and Cattles in a drylot are less likely to have heavy worm infections than those on pastures. Young cattle will typically have more internal parasites than older cattle. Strategic deworming starts with understanding the life cycle of problem parasites, identifying seasonal changes in parasite burdens and implementing cost effective control. Therefore, the methods of controlling internal parasites should be developed to fit individual production situations. This work is therefore directed towards identifying the species of Gastro intestinal Helminths that are prevalent in cattles reared in New Bussa and its environs.

MATERIALS AND METHODS

Study Area

The study was carried out in New Bussa located in Borgu local government area of Niger State, Nigeria. The local government has a land area of about 16,200 sqkm and shares boundaries with Benin Republic to the West and Agwara local government to the south; Borgu local government lies between latitude 9 degree 53 N and longitude 4 degree 31 N (Ross 2010). The local government area comprises of ten wards namely: Bussa, Konkoso, Rafi, Dogongari, Pissa, Wawa, Babanna, Shagunnu, Dugga and Karabonde



Sampling Techniques

New Bussa and its environs which is the study area was divided into ten zones based on their geographical locations and their wards, and were designated (T₁) Bussa, (T₂) Konkoso, (T₃) Rafi, (T₄) Dogongari, (T₅) Pissa, (T₆) Wawa, (T₇) Babanna, (T₈) Shagunnu, (T₉) Dugga and (T₁₀) Karabonde.

Five cattle were randomly selected from different cattle farmers in each zone for the collection of faecal sample directly from the rectum for analysis and evaluation of the species and number of gastro-intestinal helminths present in the faecal samples. To prevent premature hatching of the larvae, the faecal samples collected are stabilized by mixing them thoroughly in a 10% formaldehyde solution immediately after collection.

Identification and Counting of Helminth

About five grams (5g) of collected faecal materials was taken separately from each sample into different beaker and sufficient volume of water was added to obtain liquid suspension that is triturated and homogenized in a mortar. The suspension was then sieved over a beaker with a little water before discarding the remaining materials. The suspension was then centrifuged at 1500 rpm (revolution per minute) for 3 minutes using a large capacity centrifuge. The supernatant material was then discarded and the eggs were examined, identified and counted under the microscope. The procedure used above is known as Brumpt's Techniques. This procedure was repeated in all the samples collected separately.

Statistical Analysis

All data obtained was subjected to analysis of variance (ANOVA) using AOAC (2000) method and the means were separated using Duncan Multiple Range Test.

RESULTS AND DISCUSSION

Results

TABLE 1 Prevalence rate of Gastro-intestinal Helminth species present in cattle reared in the Study area.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆	T ₇	T ₈	T ₉	T ₁₀
A	2.20 ^{ab}	1.40 ^b	2.80 ^{ab}	2.20 ^{ab}	1.60 ^b	2.20 ^{ab}	1.80 ^a	4.00 ^a	1.60 ^b	1.60 ^b
B	5.80 ^c	10.40 ^{ab}	13.20 ^a	9.00 ^b	7.40 ^{bc}	7.80 ^{bc}	5.00 ^c	4.60 ^c	4.80 ^c	3.40 ^a
C	27.00 ^a	19.40 ^b	21.00 ^{ab}	25.00 ^a	22.80 ^{ab}	19.20 ^a	19.60 ^b	19.00 ^b	23.00 ^{ab}	22.00 ^{ab}
D	1.40 ^b	1.20 ^a	1.40 ^b	2.00 ^{ab}	1.80 ^{ab}	2.00 ^{ab}	3.60 ^a	2.00 ^{ab}	0.60 ^{bc}	2.60 ^{ab}
E	8.60 ^{ab}	4.60 ^{bc}	5.80 ^b	9.80 ^a	6.60 ^b	6.00 ^b	10.00 ^a	7.00 ^{ab}	8.40 ^{ab}	10.00 ^a
F	14.40 ^a	14.20 ^{ab}	14.40 ^{ab}	12.00 ^b	14.60 ^{ab}	15.40 ^{ab}	11.80 ^b	15.00 ^{ab}	14.00 ^{ab}	17.40 ^a



G	0.80 ^b	1.20 ^{ab}	1.00 ^a	1.20 ^{ab}	1.40 ^a	1.60 ^a	1.40 ^a	1.20 ^{ab}	1.40 ^a	1.40 ^a
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Means with different superscript on the horizontal rows are significantly different ($P < 0.05$)

A	–	<i>Toxocara vitulorum</i>	B	–	<i>Fasciola gigantica</i>
C	–	<i>Schistosoma bovis</i>	D	–	<i>Oesophagostomum spp</i>
E	–	<i>Moniezia expansa</i>	F	–	<i>Strongyloides spp</i>
G	–	<i>Avitellina centripunctata</i>			

Table 1 shows the means of the number and species of worms found in the faecal samples collected from cattle reared in the study area. From table 1, it can be observed that *Schistosoma bovis* is the most prevalent species of gastro-intestinal helminthes in cattle reared in the study area and the prevalence rate ranges from 19.00 – 27.00. This is closely followed by *Strongyloides spp* with prevalence rate ranging between 11.80 and 17.40. It can also be deduced from Table 1 that *Avitellina centripunctata* has the lowest prevalence rate ranging between 0.80 and 1.40.

Discussion

Helminthes is one of the major problems affecting the production of cattle. Losses caused by helminth parasite depend on the prevalence, nature and intensity of infection and management practice. The most important predisposing factor of helminth are grazing habits, climates, nutritional deficiency, pasture management, immunological status, presence of intermediate host and vector and the number of infective larvae and eggs in the environment. (Fakae, 1990) Prevalence of *Schistosoma bovis* in the cattle reared in the study area invariably affect productivity and attempts made to prevent or treat helminthosis will result in increased cost of production resulting in reduction in the profit margin of the farmer.

CONCLUSION AND RECOMMENDATION

Conclusion

The result of the study revealed that gastro-intestinal helminthes is common in the study area but the most prevalent gastro-intestinal helminth in the study area is *Schistosoma bovis* and the species of helminth parasite with lowest prevalence is *Oesophagostomum spp*. From the result, it can be concluded that helminth that is prevalent in the study area greatly affect the production of cattles and also reduces the profit margin of the farmers in the study area.

Recommendation

Because of the effect of helminth parasite on production, reproduction, survival and growth of cattle in the study area, it is therefore recommended that cattle should be dewormed on regular basis to prevent helminthosis. Medically, it has been discovered that no available medication can take care of aggs produced by worms and deworming medication will only take care of adult worms. After a period of time, the egg laid would have hatched and lay another set of egg. This is why constant deworming on regular basis is recommended.

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