Coccidiosis of PoultrywithinVom, Plateau State, Nigeria. *International Journal of Poultry Science. 7(9): 917-918.*

Patra,G.,Ali,M.A.,Chanu,K.V.,Jonathan,L.,Joy,L.M.,Prava,M.,Ravindran,R.,Das,G. and Devi, L.I. (2010): PCR Based Diagnosis of *Eimeria tenella* Infection in broiler Chickens. *International Journal of Poultry Science.9 (8): 813-818.*

Sun, X.M., Pang, W., Jia, T., Yan, W.C., He, G., Hao, L.L., Bentue, M. and Suo, X. (2009): Prevalence of *Eimeria* species in Broilers with Subclinical signs from fifty farms. *Avian Diseases. 53(2): 301-305.*

Sunhwa, H., Hyun-A, L., Dong-Woo, K., Gi-Wook, O. and Okjin, K. (2014): Anticoccidial effects of root bark of *Dictamnus dasycarpus Turcz* extract on experimental *Eimeria tenella* infection. *Laboratory Animal Research. 30 (4): 169-173.*

Usman, J.G., Gadzama, U.N., Kwaghe, A.V. and Madziga, H.A. (2011): Anticoccidial Resistance in Poultry: *A Review New York Science Journal. 4(8): 102-109.*

PREVALENCE STUDY OF HELMINTH INFECTION IN CATTLE SLAUGHTERED IN JOS SOUTH ABATTOIR, PLATEAU STATE, NIGERIA

Agu C. G[1]., Nwamo, A. C [2]., Oshibanjo D. O[3]., Garba, I[2]., Ardo, U. M[4].

[1]Bacterial Vaccine Division National Veterinary Research Institute, Vom, Plateau state.

[2]Livestock Services Division, National Veterinary Research Institute, Vom, Plateau state.

[3]Department of Animal Production, Faculty of Agriculture, University of Jos, Plateau State.

[4]Department of Animal Health Federal College of Animal Health and Production Technology, NVRI Vom, Plateau state.

ABSTRACT

Helminth infection is recognised as a major constraint in livestock especially, cattle health and production notably causing significant economic losses and this is a major concern amongst livestock farmers. This study was designed to determine the prevalence of helminth infection in slaughtered cattle from Jos South abattoir, Plateau State. 200 faecal samples were collected from slaughtered cattle. The faecal samples were processed and examined under x10 magnification for detection of helminth eggs using standard procedures of floatation and sedimentation methods and were identified based on their morphological features. Data were subjected to descriptive statistical analysis using percentages in determining the prevalence rates in the different sex. Prevalence of helminth in relation to sex was analysed using Chi-square statistical test. The P-values ≤ 0.05 were considered statistically significant. A total number of 32 positive samples was detected with 4 different species of helminth of the same type (Nematodes); *Strongyloides spp.(21.9%), Haemonchus contortus(68.8%), Ostertagia spp.(3.1%)* and *Trichostrongylus spp.(12.5%) with Haemonchus contortus(68.8%)* been the most prevalent. There was no significant difference in prevalence in relation to sex ($p \leq 0.05$).

Key words: Prevalence, helminth, infection, cattle, abattoir

INTRODUCTION

Cattle population in Nigeria has been estimated as 15.3 million (Umar *et al*., 2008; Tibi and Aphunu, 2010) with many indigenous breeds. It is known as the most domesticated livestock in Nigeria. Cattle provide meat, milk, skin and draft power. The meat contribute about 50% of the total meat from livestock (Adedipe *et al*., 1996). Cattle, like all herds/flocks in a grass based production system especially herds raised on large rangelands are parasitized by various parasites including helminth.

Helminths are intestinal, large macro-parasites. They cause infection called helminthiasis and are of 3groups; Nematodes, Cestodes, and Trematodes. They are parasitic agent of livestock known to be a major constraints to ruminant well-being and productive performance (Rajput *et al.,* 2006; Hesterberg *et al.,* 2007). Zoonotic helminths of livestock origin cause health problems in humans (Karshima *et al*., 2018). Infections with Nematodes and flukes are more chronic and the major economic impact is due to sub-clinical infections causing reduced growth, milk yield and fertility (Morgan *et al.,* 2013). Environmental and climatic conditions greatly influence the development of helminthic parasites on pastures and their capacity to infect livestock (Gasbarre *et al*., 2001), while reduced dietary status, compromised immunity and grazing habits among livestock increases the susceptibility of livestock to infective stages of gastrointestinal helminth (Bamaiyi, 2012). These pathogens are amongst the most important production limiting diseases of grazing ruminants (Charlier *et al.,* 2016). Considering the predisposing factors of helminth infections such as climate, grazing habits, pasture management, presence of intermediate host, and the number of infective larvae and eggs in the environment (Radostits *et al*., 1994), this study was designed to determine the prevalence of helminth infection in slaughtered cattle from Jos South abattoir, Plateau State.

MATERIALS AND METHOD

Sample site

The study was carried out at Jos abattoir located along Rayfield in Jos South Local Government Area, Plateau State. Jos South is the second most populated Local Government area in the State The Jos abattoir is large and also known for slaughtering large number of cattle serving as a major source of meat consumed in the area.

Sample Collection and Identification

Visit was made to the abattoir at about 6:00am twice a week for a month for sample collection, during the study period precisely from February to March, 2020. A total of 200 fresh faecal samples were randomly collected directly from the rectum of freshly slaughtered cattle using a hand glove) into well labelled sterile polythene bags and transported in ice packs to parasitology Laboratory, National Veterinary Research Institute, Vom. The collected faecal samples were processed and examined under x10 magnification for detection of helminth eggs using standard procedures of floatation and sedimentation methods (Hansen and Perry, 1994) and were identified based on their morphological features as described by Soulsby, (1982). In -vivo identification of infections relies on the microscopic detection of parasite eggs in host faeces (Gareth, 2009).

Data Analysis

Data were subjected to descriptive statistical analysis using percentages in determining the prevalence rates in the different sex. Prevalence of helminth in relation to sex was analysed using Chi-square statistical test. The P-values ≤ 0.05 were considered statistically significant.

RESULTS AND DISCUSSION

Prevalence of gastrointestinal helminth in relation to sex

Out of the 200 faecal samples collected, 109 male cattle were examined and 17 (15.6%) were found positive while 91 female were examined and 15(16.5%) were found positive (Table 1) making a total number of 32 The prevalence of gastrointestinal parasites in relation to sex was not statistically significant at $p \leq 0.05$. (X^2 =0.029, df =1, P= 0.865).

Table 1: Prevalence of Gastrointestinal Helminths in terms of Gender

Gender	Number examined	Number of positive sample (*n*)	Prevalence (%)
Male	109	17	15.6
Female	91	15	16.5
Total	**200**	**32**	**16.0**

Table 2 shows the Prevalence of Gastrointestinal Helminth obtained from both male and female cattle. It was observed that from a total number of 32 positive samples, 4 different species of helminth of the same type (Nematodes) was detected; *Strongyloides spp.(21.9%), Haemonchus contortus(68.8%), Ostertagia spp.(3.1%)* and *Trichostrongylus spp.(12.5%).*

Table 2: Prevalence of Gastrointestinal Helminth obtained from male and female cattle

Specie of Parasite	No of parasites (*n*)	Prevalence (%)	X^2	*P* Value
Strongyloides spp	7	21.9	0.035	0.851
Haemonchus contortus	22	68.8	0.057	0.811
Trichostrongylus spp	4	12.5	6.716	0.010
Ostertagia spp	1	3.1	1.293	0.255
Total	**34**			

Helminth infection is recognised as a major constraint in cattle production notably causing significant economic losses. In most cases, the infection are subclinical due to reduced productivity, mortality and reproductivity of

animals (Moussouni *et al*., 2018). The prevalence of helminth infection has been reported severally both here in Nigeria (Amuzie *et al.,* 2015; Okike-Osisiogu *et al*., 2016) and in other parts of the world (Bushra *et al*., 2013, kagenda *et al.,* 2018).

The result of this study shows that out of 200 cattle examined and screened, 16% of the cattle had helminth infection, precisely nematode infection with *Haemonchus contortus* (68.8%) been the most prevalent and this is in accordance with the findings of Ola-fadunsin *et al*., 2020. Nematode has been documented to be the most numerous class of helminths affecting cattle worldwide (Nnabuife *et al.,* 2013; Bisimwa *et al*., 2018) and are also known to withstand and survive on pasture throughout the year making infection possible (Silva *et al*., 2012), this could be the reason why nematode was the only class of helminth that was seen in the cause of study. For the 84% that were free from helminth infection indicates less helminth infection at that time of the year (dry season) and this was also observed by Ola-fadunsin *et al.,* 2020 having a least prevalence in the month of February and by other researchers (Yahaya and Tyav, 2014; Bisimwa *et al*., 2018) noting that helminth infection are more common during the wet season than in dry season and this can be attributed to high moisture content favouring growth and development of helminth eggs and larvae on pasture leading to infections in cattle.

The prevalence of gastrointestinal parasites in terms of gender was not statistically significant. The lack of variation (P= 0.865) possibly suggests that the infection was not gender specific. This coincides with the findings of Kelemework *et al.,* (2016); Ayana and Ifa (2015) who equally observed a lack of variation ($P \leq 0.05$) in the prevalence of helminth infection in terms of gender.

CONCLUSION

As observed from this study, helminth infection is still a major concern in cattle health and production. Hence, there's need for a continuous enlightenment and encouragement of livestock farmers on the periodic/routine use of anthelminthics to tackle helminthosis.

REFERENCES

Adedipe, N. O., Bakshi, J. S., Odegbaro, O. A., and Aliyu, A. (1996). Evolving the Nigeria Agricultural Research Strategy Plan: Agro-Ecological Inputs, National Agricultural Research project (NARP).

Amuzie, C.C., Moslen, M. and Clement, A. (2018). Low prevalence of helminths in faecal samples of cattle and goats from Trans-Amadi Abattoir (Slaughterhouse), Port Harcourt, Nigeria. *SF J. Environ. Earth Sc* 1(1): 1012-1015.

Ayana, T. and Ifa, W. (2015).Major gastrointestinal helminth parasites of grazing small ruminants in and around Ambo town of Central Oromia, Ethiopia. *Journal of Veterinary Medicine and Animal Health,* **6** (7): DOI: 10.5897/JVMAH2014.0327.

Bamaiyi, P. H. (2012). Factors militating against the Control of Helminthosis in Livestock in Developing Countries. *Vet. World,* **5**(1):42-47.

Bisimwa, N.P., Lugano, R.M., Bwihangane, B.A., Wasso, S.D., Kinimi, E., Banswe, G. and Bajope, B. (2018) Prevalence of gastrointestinal helminths in slaughtered cattle in Walungu territory, South Kivu province, Eastern Democratic Republic of Congo. *Austin J. Vet. Sci. Anim. Husb*., 5(1): 1039-1046.

Bushra, M., Shahardar, R.A. and Maria, A. (2013) Prevalence of gastrointestinal helminth parasites of cattle in central zone of Kashmir valley. *J. Vet. Parasitol*. 27(1): 33-36. 27. Nath, T.C., Islam.

Charlier Johannes., Valérie De Waele., Els Ducheyne., Mariska van der Voort., Fiona Vande Velde and Edwin Claerebout. (2016). Decision Making on Helminths in Cattle: Diagnostics, Economics and Human behaviour. *Irish Veterinary Journal*. Vol, 69.14.

Gareth, W. H. (2009). Nematode Parasites of Small Ruminants, Camelids and Cattle: Diagnosis with Emphasis on Anthelmintic Efficacy and Resistance Testing. Australia & New Zealand Standard Diagnostic Procedures