Prevalence of gastrointestinal helminth parasites of trade cattle in Aguata and Orumba South Local Government Areas, Southeastern Nigeria

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Background

Gastrointestinal helminth parasites (GHPs) constitute a major impediment to livestock production in the tropics with serious economic consequences[1]. Some of the GHPs are zoonotic and could pose a deleterious threat to public health. GHPs are ubiquitously distributed and their prevalence variously described in different geographical regions of Nigeria[2]. However, paucity of information exists on the prevalence of bovine GHPs in Southeastern Nigeria.

Objectives

To determine the prevalence of gastrointestinal helminth parasites of trade cattle in Aguata and Orumba South Local Government Areas (LGA) of Southeastern Nigeria.

Methodology

Faecal samples were collected per rectum from 210 randomly selected cattle [Aguata LGA (n=140) and Orumba South LGA (n=70)] over three months. The sex, breed and body condition scores of the cattle were noted. The faecal samples were individually subjected to floatation and sedimentation techniques. Parasite eggs were identified based on their morphological characteristics[4].

Results

The overall prevalence of GHPs was 57.6% (95% CI = 0.509–0.643). Of the 140 cattle screened at Aguata LGA, 74 (52.9%; 95% CI = 0.446–0.609) were positive for gastrointestinal helminth ova while 47 (67.1%; 95% CI = 0.555–0.77) were positive out of the 70 cattle screened at Orumba South LGA (Table 1). A variety of gastrointestinal helminth ova were detected including those strongyles, strongyloids, *Toxocara*, *Fasciola*, *Schistosoma*, *Moniezia* and *Paramphistomum.* Strongyle eggs were the most prevalent eggs detected in single infections followed by *Fasciola* eggs (Table 2). Four zoonotic helminth ova were detected in the study area. Mixed infections were more common than single infections (Table 2 & 3). Body condition score was significantly associated ($p<0.0001$) with the prevalence of GHPs of cattle in the study area while sex and breed were not.

Conclusion

Trade cattle in Aguata and Orumba South LGAs, Southeastern Nigeria are affected by variety of GHPs including zoonotic helminths.

Table 1: Prevalence rates of gastrointestinal helminth parasites of cattle in Aguata and Orumba South Local Government Areas

LGAs	No. Examined	No. Positive	Prevalence (%)	95% CI
Aguata	140	74	52.9	0.446 - 0.609
Orumba	70	47	67.1	0.555 - 0.770
Overall	210	121	57.6	0.509 - 0.643

CI = Confidence interval; LGAs = Local Government Areas

Table 2: Overall prevalence rates of different GHPs of cattle in Aguata and Orumba South Local Government Area

Helminth eggs	No. Positive	Prevalence (%)	95% Confidence Interval
Stongyle eggs	30	14.3	0.101 - 0.197
Strongyloid eggs	3	1.4	0.003 - 0.043
Toxocara eggs	6	2.9	0.012 - 0.062
Fasciola eggs	10	4.8	0.025 – 0.087
Mixed Infections	72	34.3	0.282 – 0.409

Table 3: Composition of the mixed GHP infections of cattle in Aguata and Orumba South Local Government Area

Helminth eggs	No. Positive	Prevalence (%)	95% Confidence Interval
Mon + Fas	4	5.6	0.018 – 0.138
Stron + Fas	16	22.2	0.141 – 0.332
Fas + Strongd	6	8.3	0.036 – 0.173
Mon + Stron	8	11.1	0.055 – 0.207
Stron + Toxo	6	8.3	0.036 – 0.173
Stron + Strongd	11	15.3	0.086 – 0.255
Toxo + Stron + Mon	12	16.7	0.096 – 0.271
Stron + Fas + Strongd	2	2.8	0.002 – 0.102
Fas + Schisto + Mon	2	2.8	0.002 – 0.102
Stron + Schisto + Fas + Mon	1	1.4	0.0001 – 0.082
Fas + Mon + Stron + Para	2	2.8	0.002 – 0.102
Para + Stron + Strongd	2	2.8	0.002 – 0.102

KEY: Mon = Moniezia; Fas = Fasciola; Stron = Strongyle; Strongd = Strongyloid; Toxo = *Toxocara*; Schisto = *Schistosoma*; Para = *Paramphistomum*

Recommendations

Routine anthelmintic treatment, good management practices and public enlightenment on the zoonotic importance of GHPs is highly essential.

References

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3. Hansen and Perry 1994
4. Taylor et al. 2016