PREVALENCE OF SMALL RUMINANTS GASTROINTESTINAL PARASITES IN PANKSHIN TOWN IN PLATEAU STATE, NIGERIA

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ABSTRACT
Gastrointestinal parasites are considered as a major constraints affecting the productive performance of sheep and goats. The study was to determine the prevalence of gastrointestinal parasites in sheep and goat in Pankshin town Pankshin Local Government Area of plateau state, Nigeria. Total of 250 faecal samples were collected from each of sheep and goats between August and September 2023 where Species, Age and Sex were determine. The result revealed a prevalence rates of 359(71.8%) where infestation in sheep 159(63.6%) and 200(80.0%) in goat and the result showed no significant(P>0.05) difference. In regards to age for both sheep and goat shows significant (P<0.05) difference between the adult and their young counterparts with (157 (65.4%), 192 (87.2%) for adults and 02 (20.0%), 08(26.6%) for the young respectively. There were no significant difference (P>0.05) for sex for sheep and goat. Common gastrointestinal parasites found included Coccidia oocyst, oesophagostomum, Trichuris, Haemonchus, Moneiza, Dicrocoelium, Fasciola and Bunostonum. Proper preventive measures such as regular deworming should be put in place in order to improve on the productivity of small ruminant particularly in the study area.
Keywords: Age, Animal, Faecal, Parasite, Sex.

INTRODUCTION

Small ruminants play important roles in sustainable agriculture in developing countries also support a variety of socioeconomic functions worldwide Gofwan *et al,* (2021). Gastrointestinal tract. Parasitism in sheep and goats is of paramount importance because rearing of small ruminants is a major source of income especially to the marginal farmers of the country Singh *et al* (2016). These parasites cause both acute infections with a rapid onset and high mortality levels and chronic infections, which are commonly subclinical and may lead to insidious and important economic losses Gofwan *et al* (2021) via reduction of live weight gain, reduced wool and milk production, and poor reproductive performance (Okorafor *et al*., 2015). This problem is severe in tropical countries due to highly favorable environmental conditions for helminthes transmission Gaherwal *et al* (2016). Present study aimed to identify the prevalence of gastrointestinal parasites in sheep and goat in Pankshin town Plateau state, Nigeria

MATERIALS AND METHODS

This study was based on the faecal sample collection only. The faecal samples were directly collected from the animals without any harm

Study area

The study was conducted in Pankshin town of Pankshin Local Government Area which is relatively cool with the average temperature of 22^0C (Shiru, 2018). It is extends from the latitudes 9.3192 N, 9.4417E. The area is located in the central Plateau state, Nigeria which is bounded with Kanke LGA by the east, Bauchi state through north, Mangu LGA by the west and Quan pan, Shendam, Mikang and Langtang north LGA[S] by the south

Sample collection and faecal analysis

A total of 500 faecal samples with 250 each for both sheep and goats were randomly collected directly from the animal rectum during the period of August and September (2023) Samples were labeled accordingly and stored in ice chilled container to slow down the process of nematode eggs development during transportation. The samples were grossly examined for color, consistency, odour and for the presence of adult worms or developmental stages, if any. The faecal samples were processed and screened qualitatively using sedimentation and floatation methods for evaluating the incidence of infections

Statistical analysis
Data collected were subjected to Chi-square test to determine the prevalence rates of gastrointestinal parasites in sheep and goat in terms of species, age sex in Pankshin town.

RESULTS AND DISCUSSION
Table 1 which assessed the association between species (sheep and goat) and parasite prevalence. A total of five hundreds faecal samples from both sheep and goat were collected. Of the 500 samples collected, total of 359 (71.8%) samples were positives where goat had more positives samples of 200 (80.0%) than that of sheep with 159(63.6%) positives samples. This could be due to their management and grazing behavior. This study is in agreement with Gofwan *et al.*(2021) Temesgen *et al,* (2015) reported that the infection rate was higher in goats than sheep, The result was not significant at (P>0.05) level, indicating no compelling evidence to reject the null hypothesis. This suggests that, based on the collected data, there is no significant difference in the prevalence of gastrointestinal parasites between sheep and goats.

Table 1: Prevalence of gastrointestinal parasite base on species

Species	No of Sample	No of Infected animals	Percentage (%) Infected	Chi square	P – Value
Sheep	250	159	63.6	2.7317	0.098372
Goat	250	200	80.0		
Total	**500**	**359**	**71.8**		

The chi-square statistic is 2.7317. The p-value is .098372. The result is not significant at p < 0.05.

Table 2 shows the prevalence of gastrointestinal parasites on Age -wise. 240 samples from adult sheep were examine and (157 (65.4%) were positives, 10 samples from the young (lambs) 02 (20.0) were positives. In regards to adult goat, 220 samples examine and 192 (87.2%) were positives while 30 samples from the young (kids) 08(26.6%) were positives. According to this result it showed adult for both the sheep and the goat (157 (65.4%), 192 (87.2%) respectively were more susceptible to parasites which were significantly (P< 0.05) higher than their young 02 (20.0%), 08(26.6%) counterparts respectively. This implies that different age groups exhibit varying susceptibility to these parasites, warranting further investigation and tailored interventions for specific age categories. It could be explained that higher nematode prevalence in adults might be due to grazing on larger area of pastures being contaminated with various flocks and different stress conditions such as climate, long daily traveling, and gestation Gofwan *et al* (2019). The young animals are less susceptible to parasitic infections due to less exposure for grazing as they mainly depend upon milk feeding. Our findings were in concordance with Yadav *et al* (2006), Emiru *et al* (2013) who recorded a higher prevalence of infection in adults than young ones.

Table 2: Prevalence of gastrointestinal parasites base on Age

Species	Age	No of Sample	No of infected animals	Percentage(%) infected	Chi square	P – Value
	Adult	240	157	65.4	14.5741	0.002219
Sheep	Young	10	2	20.0		
	Adult	220	192	87.2		
Goat	Young	30	8	26.6		
Total		**500**	**359**	**71.8**		

The chi-square statistic is 14.5741. The p-value is .002219. The result is significant at p < 0.05.

Table 3 shows the prevalence of gastrointestinal parasites in regards to Sex. 192 samples from female sheep (ewes) were examine and 111(57.8%) were positives, male with 58 samples and 48 (82.7%) were positives. Female goat had 198 samples and 162(81.8%) were positive while the males had 52

with 38(73.1%) positives. This result shows that females of both sheep and goat were more susceptible 111(57.8%), 162(81.8%) than their males 48 (82.7%), 38(73.1%) counterparts respectively. The result was not significant at (P>0.05) level, suggesting that, based on the available data, there is no significant difference in the prevalence of gastrointestinal parasites between sexes. The influence of sex on the susceptibility of animals to infections could be attributed to genetic predisposition and differential susceptibility owing to hormonal control. The physiological peculiarities of the female animals, which usually constitute stress factors thus reducing their immunity to infections, and for being lactating mothers, females happen to be weak and malnourished, as a result of which they are more susceptible to the infections besides some other reasons Blood *et al*. (2000) and Mir *et al.* (2013)

Table 3: Prevalence of gastrointestinal parasites base on Sex

Species	Sex	No of Sample	No of infected animals	Percentage(%) infected	Chi square	P – Value
	Female	192	111	57.8	5.3751	0.146302
Sheep	Male	58	48	82.7		
	Female	198	162	81.8		
Goat	Male	52	38	73.1		
Total		**500**	**359**	**71.8**		

The chi-square statistic is 5.3751. The p-value is .146302. The result is not significant at p <0.05.

CONCLUSION

Study showed that the prevalence rate of gastrointestinal parasitism needs to be monitored periodically among the small ruminant. Further, effective and well-planned control measures to check the parasitic population should be implicated by conducting extension programs to educate the farmers regarding the proper use of anthelmintics. These findings can inform targeted interventions and management practices for controlling gastrointestinal parasites, taking into account the specific vulnerabilities associated with age groups.

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