Gastro intestinal parasites of pigs in Southern Nigeria.

O.A. ONAWUNMI & S.A. ADESOYE,
Department of Animal Science,
University of Ife, Ile Ife.

ABSTRACT

Three hundred and twenty nine fresh faecal samples collected from 15 swine herds in South Western Nigeria were examined microscopically for gastro-intestinal parasistes after centrifugal floatation in sugar solution.

Data analyses revealed that the large intestinal roundworm *(Ascaris suum)* was the most widespread species (100% of farms) followed by the strongyles (80%), coccidia (80%) and *Trichuris suis* (67%). Out of the 329 pigs sampled, 52.6% were infected with *Ascaris suum*, 37.4% with strongyles and 27.1% with coccidia. *Trichuris suis* was observed in 26.7% of the samples.

Adults appeared to be the most heavily parasitized group and could be a major source of infection for the young. The Coccidia which have hitherto been overlooked as important pathogens could have a significant impact on productivity in pigs.

Introduction

Over the past decade several surveys based on worm egg counts have been conducted on the prevalence of gastro-intestinal parasistisms in Nigerian pigs. In full acceptance of the many uses, limitations and interpretations of egg counts, these studies have led us to conclude that, when eggs are found, live worms are present within the pigs, that is, that active and important parastisms are present. Early studies established the widespread prevalence of active gastro-intestinal parasitisms in Nigeria swine herds (Otu, 1970). Later studies confirmed the same continuous prevalence (Ayeni 1973). It would appear therefore, that these parasitisms have not been controlled, have scarcely ever been treated until recent years, and have not declined.

In order to assess the validity of this statement and formulate appropriate control programmes it is important to monitor swine parasites periodically. The following report is offered as a preliminary study of swine parasites in a major pig raising area of Nigeria.

Materials And Methods

This survey was conducted over a 3 month period beginning in December, 1975. Swine herds were selected with the assistance of local veterinary officers and by personal contact.

Faecal samples were collected from 329 pigs in 15 swine herds. Eleven of the farms surveyed were located in Oyo State while the remainder came from Ondo State (3) and Ogun State (1). The breeds of pigs kept on each farm were large white, duroc and locals. No attempt was made however, to classify faecal samples on the basis of breed. Faecal samples were grouped according to whether they were obtained from: (1) Weaners; (2) Growers; and (3) Adults. Although management varied between farms, most producers kept their stock confined on concrete at night and during the day released them to graze on fenced paddocks.

Fresh faecal samples were collected at random on each farm, with a minimum of 6 samples from each group where feasible. The freshness of the samples was assured by moving the animals around until they defecated. Samples were then collected with a metal spatula washed clean in between samples and transferred to clean polythene bags. In a few cases, grab samples were collected directly from the rectum. The samples were immediately transferred into a freezer in the laboratory where they were stored for subsequent preparation and microscopic identification. As much as possible, efforts were made to examine samples within 24 hours of collection.

The essential data obtained in this trial were numbers of parasite eggs in faeces. Faecal samples were prepared by centrifugal floatation in sugar solution and examined microscopically at 100x.

Results and Discussion

The present study relied on egg counts as an index of the extent of parasitism. While we acknowledge that this system does not always permit differentiation between certain helminth species and does not account for the presence of immature worms, it does in our opinion give a reasonable estimate of broad groups of parasites and their geographical distribution.

Table 1 shows the prevalence of gastro-intestinal worms in the farms under study. These data indicate that the large intestinal roundworm *(Ascaris suum)* was the most widespread species, occurring on 100% of the farms examined. This was followed closely by the strongyles (80%) and coccidia (80%). The whipworm *(Trichuris suis)*, occurred on 67% of the farms examined. Perhaps a more revealing statistic is the prevalence of the parasites in the pigs examined (Table 2).

For convenience, these date have been analysed to reflect parasite distributions in different age groups. *Ascaris suum* was found in 52.6% of all pigs. Apparently, growers (66.7%) are more often infected by *Ascaris* than any other age group. Otu (1970) and Ayeni (1973) observed that *Ascris suum* was least prevalent in growers (66.7% and 57% respectively). Although these levels of prevalence are similar to those of the present study, both workers report a higher prevalence in weaners (71.4% and 64.4% respectively). The present study does not support these observations since only 12.2% of the weaners were found to carryAscaris infections. On the average, it takes about

TABLE 1: PREVALENCE OF GASTRO- INTESTINAL PARASITES ON 15 SWINE FARMS IN SOUTHERN NIGERIA.

PARASITE	NO. OF FARMS POSITIVE	PREVALENCE %
Ascaris suum	15	100
Coccidia (Eimeria spp.)	12	80
Strongyles	12	80
Trichuris suis	10	67

TABLE 2: PREVALENCE OF GASTRO-INTESTINAL PARASITES IN 329 PIGS. ARRANGED BY AGE.

PARASITE	WEANERS (41)		GROWERS (87)		ADULTS (201)		TOTAL (329)		Range of eggs or Cocysts/gm faeces
	NO.Inf.	% Inf.	No.Inf.	% Inf.	No.Inf	% Inf.	No.Inf.	% Inf	
Ascaris suum	5	12.2	58	66.7	110	54.7	173	52.6	4 - 311
coccidia (Eimeria spp.)	7	17.1	25	28.7	57	28.4	89	27.1	2 - 252
Trichuris suis	3	7.3	20	23	65	32.3	88	26.7	2 - 49
Strongyles	0	0	29	33.3	94	46.8	123	37.4	6 - 163

45–60 days for Ascaris to develop to maturity in pigs. Since weaners are very young pigs it seems unlikely that this parasite could have developed to egg laying maturity in weaners in any of these studies, the present study inclusive. Two explanations are however, worthy of consideration.Firstly, it is highly conceivable that weaners picked up the eggs of this parasite from older pigs or their sows, and that these eggs passed through the alimentary canal and were voided through the faeces without hatching. Another alternative is that trans–plancental migration of immature worms had taken place in gestating sows and had caused prenatal infection in newborn pigs, in much the same way as *Toxocara canis* infection is acquired by puppies from the pregnant bitch. Several workers, however, have failed to observe prenatal infection with *Ascaris suum* in pigs (Van der Wall, 1959; Alicata, 1961; Kelley and Olsen, 1961) but nonetheless, this phenomenon is worthy of further investigation. In the present study, 54.7% of adult faecal samples were found positive for *Ascaris*. This figure is significant epizootiologically, since these animals serve as a readily available source of infection for the Younger Stock. Undoubtedly, the widespread nature of this parasite must be ascribed to the fecundity of the female worms and the resistance of its eggs to adverse environmental conditions.

Strongyle infections were found in 37.4% of all samples. Otu (1970) and Ayeni (1973) reported a total strongyle prevalence of 62.7% and 73.4% respectively. In the present study, adults were more frequently infected than any other age group (46.8%). Weaners were not infected. This observation appears reasonable considering the fact that most strongyles have fairly lengthy prepatent periods.

Trichuris suis eggs were observed in 26.7% of all animals, with the highest prevalence recorded in adults (32.3%). Previous studies however, have reported more frequent infections with this parasite in growers and weaners than in adults (Otu, 1970; Ayeni, 1973).

The present study uncovered the widespread occurence of Coccidia with 27.1% of all faecal samples examined containing 2 or more oocysts per gram of faeces. Early studies acknowledged the presence of Coddidial oocysts in swine faecal samples but ascribed little or no pathogenic importance to this parasite (Otu, 1970). On the other hand, Onawunmi (1974) observed that pigs exposed to large numbers of infective oocysts, produced large oocyst populations, scoured profusely and experienced greater reductions in appetite and weight gains than controls given water placebos. Although coccidiosis is in general an insidious disease, young pigs appear to be more susceptible than older pigs (Gibbons, 1964). Table 2 shows that all age groups carried the infection although fewer weaners were infected (17.1%) than growers (28.7%) or adults (28.4%). Coccidiosis is a feedlot disease which tends to appear most frequently where there is overcrowding. Studies are in progress to determine the predominant species of Eimeria in Nigeria and assess the pathogenicity of these species in our pigs.

Most of the swine farms surveyed claimed to deworm their animals regularly with broad spectrum anthelmintics – some as often as thrice a year.

The data gathered from this study do not support these claims since many of the intensively managed herds harboured large parasite populations.

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