

## THE PREVALENCE OF SOME GASTRO-INTESTINAL PARASITES OF PIGS IN THE JOS PLATEAU, NIGERIA

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### SUMMARY

During the period of February to July, 2002 inclusive, 400 specimens of from pigs of various ages faeces were examined microscopically for the presence of ova and larvae gastrointestinal parasites. The pigs were mainly of the local breed. 7 species of gastrointestinal parasites were present. The most prevalence parasite was oocysts of *Coccidia* 71(54.62) in sows followed by *Strongyloides ransomi* 37 (21.39) in boars. *Trichuris suis* has the least with 8 (7.92) in piglets. The health significance of these infections is discussed and control and prevention measures are suggested.

### INTRODUCTION

Pigs are monogastric animals and among the oldest domesticated animals. They are known to be found throughout the tropical and temperate regions where no religious edict prevents their being reared. Pigs form an integral part of certain peasant economy particularly in Africa where pork also contributes to the increasing demand for meat.

In Nigeria, the piggery industry is becoming a fast growing and important livestock production sector and pork is utilized to a considerable extent in the diet of many Nigerians. Pig production has therefore played a major role in uplifting

the standard of living of many Nigerian. It is therefore reasonable that factors may imitate its against its production should be looked into and tackled with all seriousness. The continuous presence of these destructive internal parasites in humid climate and other factors aggravate the difficulty of production.

Although, parasitic disease is a serious problem in pig production, many pigs are rarely aware of the losses incurred. This is because losses from death due to parasitic infections are not as dramatic as in other infectious diseases but its insidious effects are manifested as reduced rates of growth (stunted growth), anaemia, pneumonia, gastro-intestinal complications in-appetence, poor-feed conversion, unthriftiness, and loss of weight all of which are often underestimated.

Pigs are known to be susceptible to infections with many species of internal parasites, distribution of these parasites, multiplication, survival and effect depends on the geographical spread of the parasite. Some of those intestinal parasites are prevalent in one region and less prevalent in another.

The management systems also encourage the presence of these parasites, extensive system of management which allowed the pigs to roam about, predisposes them to parasitic infectious.

although in the intensive system the parasitic build up can be high particularly where proper hygienic measure are not taken, vegetation too has effect on the distribution of these parasites.

The resulting disease and unthriftiness are a major cause of economic loss. The knowledge on the incidence or even the existence of some diseases and the control can only be effective if the organism are known and if the incidence is sufficiently understood to provide the basis for proper control measures. A comprehensive information in the disease producing internal parasites will thus be of great help to the practising veterinarians, pig producers, pharmaceutical manufacturers, teaching profession and research workers alike (1.5).

#### MATERIAL AND METHODS.

400 faecal samples were collected from 400 pigs that were kept in a piggery in 7 villages in Jos South Local Government Areas. The faecal samples were collected directly from the rectum of the animals (pigs) into sample bottles, faeces were obtained from the rectum of the pigs by introduction of fingers, after which was then transferred into the sample bottles avoiding contamination. The samples were taken to the Parasitology laboratory of the National Veterinary Research Institute, Vom for examination.

The specimen were examined first by the iodine - stained wet mounts then by centrifugal sedimentation techniques, which is described below. For specimens not examined, they were fixed in ten percent formalin, and examined later sediment techniques. The identification of parasite was base on the criteria of Georgi and Melvin (4 and 5).

#### RESULT

Coccidia oocyst were the most prevalent in all the age group sampled 71(54.67%) followed by *Strongyloides ransomi* 47 (36.15%) in sows, *Metastrongylus salmi* recorded the least in sows but there was no occurrence of this parasite, in boars and piglets. The parasites whose ova, larvae or Oocysts were detected are presented in Table I.

With regard to the systems of management, the semi intensive and extensive systems had the highest occurrence of parasites while the intensive system recorded the least. (Table III).

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**Table 1** Parasite ova/larvae/Oocyst detected

Parasite	No Examined	No Positive	Percent (%)
Coccidia Oocyst	400	191	47.75
<i>Strongyloides ransomi</i> (ova/larvae)	400	168	42.00
<i>Ascaris suum</i>	400	83	20.75
<i>Hyostromylus ribidus</i>	400	59	14.75
<i>Oesophogastomum dentatum</i>	400	44	11.00
<i>Trichuris suis</i>	400	33	8.25
<i>Metastrongylus salm</i>	400	2	0.5

The prevalence of gastro-intestinal parasites of pigs in the Mou Plateau, Nigeria, is reported in this study. The prevalence of Coccidia Oocyst was 47.75%, Strongyloides ransomi (ova/larvae) 42.00%, Ascaris suum 20.75%, Hyostromylus ribidus 14.75%, Oesophogastomum dentatum 11.00%, Trichuris suis 8.25% and Metastrongylus salm 0.5%.

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Table II: Prevalence of Intestinal Parasites in Pigs.

Parasites	Sows		Boars		Piglets	
	No. Exam	No.(%) +ve	No. Exam	No.(%) +ve	No. Exam	No.(%) +ve
<b>HELMINTHS</b>						
<i>Strongyloides ransomi</i>	137	47(34.36)	169	85(50.30)	101	36(35.64)
<i>Ascaris suum</i>	130	33(25.38)	169	37(21.89)	101	13(14.85)
<i>Trichuris suis</i>	130	11(8.46)	169	21(12.43)	101	1(0.99)
<i>Hyostromyces rubidus</i>	130	33(25.38)	169	18(10.65)	101	8(7.92)
<i>Oesophogastomum dentatum</i>	130	28(21.54)	169	14(8.28)	101	2(1.98)
<i>Metastrongylus salmi</i>	130	2(1.59)	169	-	101	-
<b>PROTOZOANS</b>						
Oocyst of Coccidia	130	71(54.62)	169	70(41.42)	101	50(49.50)

**Table III Prevalence of Intestinal Parasites in under different system of management**

Parasites	Intensive System		Semi Intensive System		Extensive System	
	No. Exam	No. (%) +ve	No. Exam	No. (%) +ve	No. Exam	No. (%) +ve
<b>HELMINTHS</b>						
<i>Strongyloides ransomi</i>	123	35(28.45)	221	91(41.18)	56	47(83.93)
<i>Acaris suum</i>	123	16(13.06)	221	80(36.20)	56	25(44.64)
<i>Trichuris suis</i>	123	5(4.06)	221	14(6.33)	56	21(37.50)
<i>Hyostromylius rubidus</i>	123	15(12.20)	221	20(9.05)	56	17(30.36)
<i>Oesophagostomum Dentatum</i>	123	6(4.88)	221	2(0.90)	56	30(53.57)
<i>Metastrongylus salmi</i>	123	-	221	2(0.90)	56	11(19.64)
<b>PROTOZOANS</b>						
Oocyst of Coccidia	123	49(39.83)	221	77(34.84)	56	46(82.14)

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### DISCUSSION AND RECOMMENDATION

The study was carried out shortly after an outbreak of African Swine Fever in the area which led to the loss of most pigs in that area, adequate attention was given to the few that were remaining through deworming and good hygiene measures.

In the light of the above, seven species were recorded, as against eight species recorded by some workers (6) and 15 species by (1) in the same area.

Oocyst of coccidia are seen to be common in pigs of all age groups and sex, pigs that are severely infected with these internal parasites particularly the young pigs (piglets) may eventually die due to lack of immunity to resist the infection because of lack of exposure to the infection. (1) and (6) reported *Strongyloid ransomi* as one of the most pathogenic helminths in the areas, of these, (5) associated high egg counts of *S. ransomi* with poor health in a number of sucklings (in his paper referred to as piglets) in which the present area form a part. These highly susceptible groups are exposed to the parasite during early life as a result of transmission via the colostrums (3), this survey also recorded *S. ransomi* as one of the most pathogenic helminthes in the area, *S. ransomi* is known to be a delicate thread like whitish worm known to infect pigs of all ages.

This explains the high prevalence of this worm shown in Table I.

*Ascaris* infections are very common in pigs of all ages, sex and severely infected young pigs may die. (1), this survey also indicate *A. suum* as one of the prevalent heminth in all age group in the area (Table I).

It may be inferred from the worm recovery following anthelmintic therapy

reported by (2) that *Hystrongylus rubidus* can be present in significant numbers, up to 27101 being found in 4 to 10 month old pigs.

This age group will normally carry lower infections than the sows. (1 and 6), thus heavy burden of *H. rubidus* was recorded in this study, particularly in sows 30 (34.0%). This support the report of (6) who found these threadlike worms in large numbers in pigs at necropsy. They noted that these threadlike worms could be transmitted from the sow to the piglets before birth (prenatal infection), can also be transmitted through colostrums. As a result, mature thread worms have been detected in baby pigs as early as 4 days old.

*Trichuris suis* (closely related to the human species, *Trichuris trichiuria* which has been shown to be capable of establishing itself in human with relative ease (3), was also recorded in all age group. (Table II).

Considering the prevalence of intestinal parasites, under different systems of management. Table III reveals that infection rate is high in the semi intensive and extensive systems, these observation could be attributed to higher exposure to sources of infection, since strict intensive system of management is not practiced.

(4), reported in his publication that pigs with high infection were weak, unthrifty and emaciated, this was not noticed during the collection of the samples, possibly because the animals were well kept and the required feed given.

### ACKNOWLEDGEMENT

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Age	No (%) +ve
47(83.93)	
25(44.64)	
21(37.50)	
17(30.36)	
10(53.57)	
11(9.64)	
46(82.14)	

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