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EFFECT OF HUSBANDRY SYSTEM ON THE INCIDENCE OF LUNGWORM *{METASTRONGYLUS SPP}* IN PIGS IN IBADAN, NIGERIA

*ADEDOKUN, O.A. ADEJINMI, J.O. and UKOIKPOKO, G.B.
Department of Veterinary Microbiology & Parasitology, University of Ibadan, Nigeria

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Abstract

Detection of helminth infection in pigs by faecal examination was carried out between the months of August and December 1998. Out of 430 pigs 64 (14.9%) were positive for *Metastrongylus spp.* Of these, 10(15.6%) were adults/breeders, 40(62.5%) were weaners/growers, while 14(21.9%) were piglets. Infection rate 8.7% was found in exotic breeds, 15.3% in crossbreed and 100% in local breeds. All intensively managed farms were lungworm-free while 28.57% and 100% infection rate respectively, were found on semi-intensively and extensively managed piggeries. The implications of these findings to the pig industry in Nigeria are discussed.

Introduction

According to Adedipe *et al.* (1996) there are some 822,000 (24.1%) pigs in the southwest zone of the country with a national total of 3.41 million. The increasing growth of the pig industry despite certain religious bias in some quarters (Olufemi *et al.,* 1981) necessitates that the status of important diseases and infections of pigs such as metastrongylosis be ascertained for proper control measures to be instituted.

All ages of pigs are susceptible to metastrongylosis (lungworm infection) which is transmitted by the intermediate hosts of the parasite earthworms of various species. Hence the system of management plays a great role in the occurrence of infection.

Metastrongylosis is caused by infection with any of three species of genus *Metastrongylus namely M. apri (elongatus, M. salmi and M. pudendotectus.* The infection causes irritation, coughing, pneumonia as well as loss of condition and retarded growth (Radostitis *et al.,* 1995). This results in economic loss due to poor feed conversion, low weight gain, poor farrowing ability, unthriftiness, slow attainment of market weight, poor carcass quality as well as cost of medication and veterinary services (Ogunfowora *et al.,* 1980). Piglets and weaners are most affected as infection in adults is often sub-clinical but not without its effect on the pigs (Radostitis *et al.,* 1995).

In view of the increasing importance of the pig industry especially in southwestern Nigeria, and the extent of losses incurred through helminthiosis in pigs, especially the seemingly obscured and chronic effect of metastrongylosis, this survey was carried out to ascertain the status of infection, and re-examine the interrelationship between breeds, and husbandry systems in the infection rate of metastrongylosis.

Materials and Methods

Fresh faecal samples were collected from different locations within and around Ibadan metropolis. All samples were labelled accordingly within approximate age of each pig indicated.. Faecal analysis and identification of helminth ova were carried out, within 24 hours of collection, using the egg floatation technique of Thienpont *et al* (1979). A saturated solution of magnesium sulphate, specifically meant for *Metastrongylus spp.* was used. Notes were taken of the breed, management systems and general body condition of the pigs.

Results

The results of the effects of management systems, age and breed predisposition on the incidence of metastrongylosis in pigs are as shown on Tables 1, 2 and 3.

Table 1: Effect of Management system on the Incidence of *Metastrongylosis* in pigs

System of management	No. of farms	No. of farms positive	Percentage positive
Intensive	6	0	0%
Semi-intensive	7	2	28%
Extensive/free range	3	3	100%

Table 2: Effect of Age on the Predisposition of pigs to *Metastrongylus* Infection

Age of pigs	No. sampled	No. of positive cases	Percentage positive
Adult/breeders	68	10	14.70%
Weaners/growers	200	40	20.0%
Piglets	162	14	8.64%
Total	430	64	14.9%

Table 3: Effect of Breed on the Predisposition of pigs to *Metastrongylus* Infection

Breed	No. sampled	No. of positive cases	Percentage positive
Exotic	346	30	8.7%
Exotic-local cross	59	9	15.3%
Local	25	25	100%

Discussion

As revealed in the results of this study, metastrongylosis appears to be a major problem to be reckoned with in the pig industry in southwestern Nigeria considering its economic significance. Lungworms pose a significant threat basically to local pigs reared extensively and those others managed under semi-intensive system with access to pasture.

In the light of the epidemiology of metastrongylosis, total confinement of pigs in

pens thereby preventing their access to infected earthworms is the best and major step towards eradication of infection. This implies intensive system and is the only measure that hitherto is an advancement over the extensive system of management that favours the infection (Ayoade *et al*, 1996).

The incidence of helminth infection was found to be significantly higher in young and growing pigs below six months of age than in adults. This could possibly be attributed to presence of acquired immunity in adult pigs and is in conformity with the observation of Dusai and Okaiyeto (1997) in pigs in Zaria, northern Nigeria.

Fewer numbers of local pigs were encountered in the course of this study than the cross-bred and exotic pigs. A possible explanation for this fact could be the increasing commercial awareness in the pig industry which has resulted in a preference for faster growing and high fecundity breeds.

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