Prevalence of Swine Diseases in Ijebu Division of Ogun State

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Abstract

This study was carried out by visiting 20 towns/ villages in Ijebu-division of Ogun State, where a total of 5,043 pigs were observed for various disease conditions. Blood and faecal samples and skin scrapings were collected from 137 sick animals, of which 3.65% were positive for the presence of Trypanosoma brucei. The following gastrointestinal nematode eggs were found in the faecal samples evaluated: Ascaris sp. (45.26%), Strongyles (10.22%), Strongyloides sp. (5.11%) and Trichuris sp. (2.92%). Sarcoptes scabiei which was the only ectoparasite of pigs encountered in this study accounted for 12.41% of the 137 skin scrapings collected. A total of 606 out of 5,043 animals were found to be clinically sick. Identified disease conditions include wound infection (33.50%), diarrhoea (22.11%), piglet anaemia (15.84%), mange (10.89%), tail sore (6.44%), foot rot (4.95%), mastitis (2.97%), metritis (1.82%) and pneumonia (1.49%).

Keywords: Prevalence, Swine Diseases, Parasites, Ogun State.

Introduction

In Nigeria, apart from poor management, which includes inadequate and unbalanced feeding, high disease prevalence and associated high neonatal mortality constitute a major obstacle to the promotion of large scale holding of livestock (Majiyagbe and Lamorde, 1997). Diseases depress every aspect of production, fertility is reduced, young stock grow poorly, milk yields are low, carcass quality is poor, affected animals lack stamina and mortality rates are high (Connor, 1992).

Nigerian livestock population is estimated to be 13.9 million cattle, 22.1 million sheep, 34.5 million goat, 3.5 million pigs and 114.3 million poultry (Bourn *et al.*, 1994). Of the pig

population, 0.822 million are found in the southwest zone (Majiyagbe and Lamorde, 1997). Gastro-intestinal parasitism constitutes an important constraint to pig production in most parts of the world and in Nigeria (Bakut *et al.*, 1997). Important intestinal parasites of pigs include *Ascaris suum*, *Oesophagostomum dentatum*, *O. quadrispinulatum*, *Hyostrogylus rubidus*, *Ascarops strongylina*, *A. dentata*, *Physocephalus sexalatus*, *Strongyloides ransomi* and *Trichuris suis* (Radostits *et al.*, 2007). Ectoparasitism is also important in pigs (Kambarage, 1992). Ectoparasites, which have been shown to have economic significance in pigs, are *Sarcoptes scabiei*, *Demodex*

phylloides and *Haematopinus suis* (Radostits *et al.*, 2007). These parasites abound in Nigerian pigs throughout the year and are major constraints to the swine industry. Southwestern Nigeria, of which Ogun State is part, has the highest concentration of pigs in the country (Majiyagbe and Lamorde, 1997). The objective of the present study is to monitor the prevalence of the various diseases of swine in Ijebu division of Ogun State.

Materials and Methods

Location of study

This study was carried out in 20 towns/villages in Ijebu division of Ogun State, where there are appreciable number of pigs. A total of 5,043 pigs were observed for various disease conditions. These pigs were examined clinically for the presence of swine diseases; out of which 137 sets of blood and faecal samples and skin scrapping were collected from clinically sick pigs and evaluated. In order to prevent disease transmission during disease surveillance, protective clothing and boots were properly cleaned and disinfected before and after leaving each of the farms visited. Collection of blood samples

About 5ml of blood was collected from the jugular vein of each of the animals into sterile bijou bottles containing 250 μ l of 200 mM disodium ethylene diamine tetra acetic acid (Na₂EDTA) as anticoagulant. The blood samples were screened for the presence of trypanosomes and the PCV value was determined in the laboratory within few hours of collection as previously described (Talabi *et al.*, 2004).

Collection of faecal samples

About 10 grammes of faeces were collected directly from the rectum of each of the animals with the aid of transparent polythene bags. The faecal samples were examined for gastrointestinal nematode

eggs in the laboratory within few hours of collection as previously described (Talabi *et al.*, 2004).

Collection of skin scrapings

The moist part on the edge of skin lesions was selected. The skin surface was then moistened with liquid paraffin and deep scrapping taken into a sample bottle with the aid of a sharp razor blade. The skin scrapings were submitted to the laboratory within 4 hours of collection.

Detection of mites

Mites were detected in the skin scrapings as previously described (Talabi *et al.*, 2004). Briefly, a little amount of skin scraping was mixed with a drop of 10% potassium hydroxide on a microscope slide. This was warmed and light pressure applied with a needle, after which the preparation was allowed to clear for 5 to 10 minutes. A microscope cover slip was placed on the preparation and observed under the x400 magnification of the microscope.

Table 1: Disease conditions identified clinically

Disease condition	No of pigs	%
Wound infection	203	33.50
Piglet anaemia	96	15.84
Diarhoea	134	22.11
Tail sore	39	6.44
Mitritis	11	1.82
Phaenoria	9	1.49
Mastitis	18	2.97
Mange	66	10.89
Foot rot	30	4.95
Total	606	100.00

Results and Discussion

Of the 5,043 animals observed, 606 were found to be clinically sick. Table 1 shows the various disease conditions identified and their frequency of occurrence. These include wound infection (33.50%), diarrhoea (22.11%), piglet anaemia (15.84%), mange (10.89%), tail sore (6.44%), foot rot (4.95%), mastitis (2.97%), metritis (1.82%) and pneumonia (1.49%).

Table 2 shows the distribution of parasites in the 137 sets of collected samples. Five animals were positive for the presence of *Trypanosoma brucei*. This accounted for 3.65% of the samples collected. The faecal samples collected showed that 62 (45.26%), 14 (10.22%), 7 (5.11%), 4 (2.92%) and 7 (5.11%) were positive for the presence of *Ascaris*, *Strongyle*, *Trichuris* eggs and *Coccidia* oocysts respectively. *Sarcoptes scabiei* was the only ectoparasite of pig encountered in this study. It accounted for 17 (12.41%) of all the collected skin scrapings

Surveys of neonatal mortality in piglets have repeatedly indicated that the most important causes of death in piglets from birth to weaning are non-infectious in origin (Radostits *et al.*, 2007). In this study, three non-infectious disease conditions; wound infection, piglet anaemia and tail sore, accounted for 55.78% of all clinically identified disease conditions (Table 1).

Wounds are breaches of the continuity of the body tissues. The impact on the economics of pig production in terms of the cost of control and decreased productivity can be enormous. Tail sores in pigs follow tail biting by one or two pigs out of a large batch. In this study, it accounted for 6.44% of all disease conditions. However, in a report from an Oslo abattoir in USA, out of 135 pig

carcasses condemned, 31.85% had tail sores (West, 1988).

Piglet anaemia, associated with a deficiency of iron, causes pre-weaning losses among housed pigs. It accounted for 15.84% of the conditions in this study. Affected piglets were dull, with pale whitish skin.

Table 2: Distribution of parasites in collected samples

Parasite	No of samples	%
<i>Trypanosoma brucei</i>	5	3.65
<i>Ascaris</i> sp eggs	62	45.26
<i>Strongyloides</i> sp eggs	7	5.11
<i>Strongyle</i> eggs	14	10.22
<i>Trichuris</i> sp eggs	4	2.92
<i>Coccidia</i> oocyst	7	5.11
<i>Sarcoptes scabiei</i>	17	12.41
Nre	21	15.33
Total	137	100.00

Sarcoptes scabiei was the only ectoparasite of pig encountered (Table 2), accounting for 12.41% of all the collected skin scrapings collected. In Tanzania, 88% of 31 herds examined were infected with *Sarcoptes scabiei* mites (Kambarage, 1992). Even though *Demodex phylloides* and *Haematopinus suis* have been shown to have economic significance in pigs (Radostits *et al.*, 2007), these parasites were not encountered in this study.

Helminth eggs encountered in this include those of *Ascaris*, *Strongyloides*, *Strongyle* and *Trichuris*. These nematodes are able to complete their life cycles in-doors under the intensive system of management. Many surveys

have shown that prevalence levels of infection to these helminths are closely related to hygiene and housing systems (Roepstorff and Nansen 1994). *Ascaris* is the most prevalent helminth parasite encountered in this study, with its eggs accounting for 45.26% of all parasites in the faecal samples collected. In a study carried out in Plateau State, Nigeria however, *Ascaris* eggs were encountered in 90.40% of the faecal samples examined (Ajayi and Arabs 1988). Also, 3.65% of these animals were positive for the presence of *Trypanosoma brucei*. Ijagbone and Ayanwale (1991) reported a prevalence of 2.09% in domestic pigs slaughtered at Ibadan abattoir, Nigeria. In conclusion, the very high disease prevalence observed in the study area may be associated with the inadequate number of animal health workers and availability of chemotherapeutic drugs for farmers in the locality. This high disease prevalence among the studied animals indicates additional cost of production to farmers especially for the purchase of drugs and medicants. Also a short supply of disease-free pork in the country will be experienced since the area is known to have the highest concentration of pigs in the country. The potential for increasing livestock production in Nigeria can only be fully realized if the animals are adequately protected against the adverse effects of periodic stresses and diseases and their agents.

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