MIXED MYCOTIC RHINITIS IN A 3-YEAR OLD PETRAIN BOAR: CASE REPORT

B. E. OKE-EGBODO,[1] J. O JEGEDE,[1] P. O. OKE,[2] J. E ANZARKU, [3] R. HASSAN, T. K [4]BELLO,.[4]AND D.T. TSAVKAR,[1]

[1]*Swine and Rabbit Research Programme,*
[2]*Departments of Veterinary Parasitology and Entomology,*
[3]*Veterinary Microbiology and Pathology,*
[4]*Biotechnology Research Programme,*
[1,4]*National Animal Production Research Institute, Ahmadu Bello University, Zaria-Nigeria*
[2,3]*College of Veterinary Medicine, Federal University of Agriculture Makurdi-Nigeria*
engodvm@yahoo.com, +234 703 322 7982

ABSTRACT

The attention of the Animal Health team of Swine Research Unit of Swine and Rabbit Research Programme of NAPRI was drawn to a farrowing pen on 12thAugust, 2016 with a chief complaint of bleeding from the nose of a 3-year old Petrain boar. Microbiological survey identified α heamolytic *Staphylococcus spp. Corynebacterium spp. Aspergillus flavus* and *Aspergillus niger* from the high sterile nasal swab taken from the boar. Clinical pathology result revealed anaemia and hypoproteinemia.The boar was treated with deep intramuscular administration of Tylosin at 8.8 mg/kg twice daily for 5 days, Dexamethasone at 0.1mg/kg, iron dextran at 200mg thrice a week and 8ml of multivitamin given every other day. The boar recovered following the treatment regimen.

Keywords: NAPRI, Petrain, Boar, Aspergillosis, Atrophic Rhinitis.

INTRODUCTION

Acute or chronic toxicoses can result from exposure to feed or bedding contaminated with toxins produced during growth of various saprophytic or phytopathogenic fungi or molds on cereals, hay, straw, pastures, or any other fodder. These toxins are not consistently produced by specific molds and are known as secondary (not essential) metabolites that are formed under conditions of stress to the fungus or its plant host (Lindemann *et al*., 1993).

Mycotoxins are found in virtually in all livestock feeds and are produced by several species of fungi (Lindemann *et al*., 1993). The fungi that produce mycotoxins of particular concern for the swine include *Aspergillus*, *Fusarium* and *Pennicilium* (Huwig *et al*., 2001). Understanding how mycotoxins affect swine is important for producers to properly control and prevent economic losses. Among these common mycotoxins, aflatoxin is one of the most toxic to swine and is primarily produced by *Aspegillus flavus*. Aflatoxins occurin four forms in grains: B_1, B_2, C_1 and C_2. Aflatoxin B_1 is the most common and considered the most biologically active form (Chi and Broomhead, 2008) young pigs are sensitive to aflatoxins (Schell *et al*., 1993).

Mycotoxins are secondary metabolites produced by various molds belonging mainly to *Aspergillus*, *Penicillium* or *Fusarium* genera (Poitrowska *et al*., 2014). The worldwide problem of feedstuffs contamination with mycotoxins is important from the economic perspective and from the point of view of animal health (Bryden, 2012). Feedstuffs that are excessively contaminated with mycotoxins adversely affect the health of livestock, lower the absorption of nutrients, reduce weight gain, compromise immunity, and disturb reproduction, leading to body dysfunctions, greater susceptibility to diseases, and finally to suboptimal production performance (Zain, 2011).

CASE REPORT

Case History

The attention of the Animal Health team of Swine Research Unit of Swine and Rabbit Research Programme of NAPRI was drawn to a farrowing pen on 12th August, 2016 with a chief complaint of bleeding from the nose of a 3-year old Petrain boar.

Physical and Clinical Examination

On clinical examination of the boar, epistasis, bloody nasal discharge was found on the floor of the pen (plates 1 & 2). The boar showed

depression, inappettance, increase body temperature (39.9°C), Other parameters were within the normal range.

Tentative Diagnosis

Mycotoxicosis, Rhinitis and Anaemia.

Diagnostic Plan

Collection and submission of high sterile nasal swabs for bacterial culture, feed samples and nasal swabs for mycological examination.

RESULTS

Microbiological survey identified α heamolytic *Staphylococcus spp.* and *Corynebacterium spp. Aspergillus flavus* and *Aspergillus niger* was isolated from mycological survey. Clinical pathology result revealed anaemia and hypoproteinemia.

Treatment and Management

The boar was treated with deep intramuscular administration of Tylosin at 8.8 mg/kg twice daily for 5 days, Dexamethasone at 0.1mg/kg, iron dextran at 200mg thrice a week and 8ml of multivitamin given every other day. The boar recovered following the treatment regimen (Plate 3).

DISCUSSION AND CONCLUSION

Not only do young pigs respond to aflatoxin loads, older pigs also show detrimental effects (Chi and Broomhead, 2008)

Sometimes more than one mycotoxin may be present in feedstuffs, and their different toxicologic properties may cause clinical signs and lesions inconsistent with those seen when animals are dosed experimentally with pure, single mycotoxins (Chi and Broomhead, 2008; Bryden, 2012).

Some mycotoxins are immunosuppressive, which may allow viruses, bacteria, or parasites to create a secondary disease that is more obvious than the primary (Pfeifer, 1994).

Mycotoxicoses are generally not successfully treated with medical therapy after diagnosis. A preventive approach with recognition of risk factors and avoiding or reducing exposure is preferred (Huwig *et al.*, 2001). Livestock animals exhibit different symptoms following exposure to mycotoxins in feedstuffs, while the degree and consequences of those symptoms depend on genetic factors (species, breed, individual differences), physiological factors (age, diet), and environmental factors (climate, livestock production methods) (Bryden, 2012).

RECOMMENDATION

Best management practices are aimed at prevention of the occurrence of mycotoxins, inactivation of the preformed toxin in grain or feed, and adsorption or inactivation of the toxin in the GI tract. Testing of suspect grain at harvest, maintaining clean and dry storage facilities, using acid additives (eg, propionic acid) to control mold growth in storage, ensuring effective air exclusion in silage storage, and reducing storage time of prepared feeds are established procedures to prevent mycotoxin formation. Acidic additives control mold growth but do not destroy preformed toxins.

There are no specific antidotes for mycotoxins; removal of the source of the toxin (ie, the moldy feedstuff) eliminates further exposure. The absorption of some mycotoxins (eg, aflatoxin) has been effectively prevented by aluminosilicates.

REFERENCES

Bryden, W.L. (2012). Mycotoxin contamination of the feed supply chain: Implications for animal productivity and feed security. *Animal Feed Science Technology* , 173: 134–158.

Chi, F. and Broomhead, J. (2008). The effects of mycotoxins. A Review for Swine Producers. Pp 312-321.

Huwig, A., Freimund, S., Kappeli, O. and Dutler, H. (2001). Mycotoxin detoxification of animal feed by different adsorbents. *Toxicology Letters*. 122: 179-188.

Lindemann, M.D., Blodgett, D. J., Kornegay, E. T. and Schurig, G. G. (1993). Potential ameliorators in weanling/growing swine. *Journal of Animal Science*, 71: 171-178.

Pfeifer, C.W., 1994. Association between aflatoxicosis and salmonella : a case study. *Swine Health and Production*,2: 20-22.

Piotrowska, M., Śliżewska, K., Nowak, A., Zielonka, L., Żakowska, Z., Gajęcka, M. and Gajęcki, M. (2014). The Effect of Experimental *Fusarium* Mycotoxicosis on Microbiota Diversity in Porcine Ascending Colon Contents.*Toxins*, 6: 2064-2081.

Schell, T. C., Lindermann, M. D., Kornegay, E. T., Blodgett, D. J. and Doer, J. A. (1993).

Effectiveness of different types of clay for reducing the detrimental effects of aflatoxin-contaminated diets on performance and serum profiles of weanling pigs. *Journal of Animal Science*, 71: 1226-1231.

PLATE 1: Boar showing epistaxis

PLATE 2: S the floor of the p

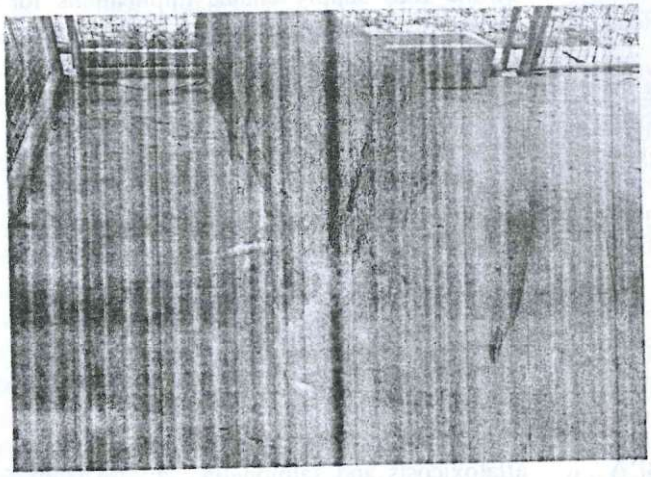

PLATE 3: Showing recovered boar post treatment