

## COCCIDIOSIS IN TWO 6-MONTH-OLD BUNAJI BULL-CALVES IN MAJERU VILLAGE, ZARIA L.G.A. OF KADUNA STATE

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### ABSTRACT

Coccidiosis has been considered the third most important parasitic disease in cattle, although some investigators have overlooked it as one of the causes of scours in calves. Coccidiosis causes significant economic losses due to reduced performance, death from direct infections, and by predisposing cattle to secondary bacterial and viral infections. Tetracycline, a broad-spectrum antibiotic active against bacteria, its use in the treatment of protozoan diseases, especially coccidiosis in cattle has not been readily exploited. Two Bunaji bull calves with complaints of stringy and bloody diarrhoea were presented to the Resident Doctors in Large Animal section of the Medicine Specialty of the College of Veterinary Surgeons of Nigeria, who were on an ambulatory visit to a sedentary Fulani herd in Majeru village in Zaria Local Government Area of Kaduna State. Physical examination was carried out. Confirmatory diagnosis by laboratory evaluation of their faecal samples revealed *Coccidia* oocyst and strongyle egg. Successful treatment was achieved using preparations of oxytetracycline and albendazole. It was concluded that oxytetracycline is effective in the treatment of coccidiosis in calves.

**Keywords:** Bunaji calves, oxytetracycline, Coccidiosis, Majeru Village, Zaria.

### INTRODUCTION

Coccidiosis is a parasitic protozoan disease caused by small, one-celled host-specific protozoan organisms of the genus *Eimeria*. The most important of this genus for causing disease in cattle are *Eimeria bovis* and *Eimeria zuernii* (Ernst and Benz, 1986). Coccidiosis has been considered the third most important parasitic disease in cattle, even though some investigators have overlooked it as one of the causes of scours in calves. The disease is more of a problem in calves, though adults may be affected. Older animals are usually carriers and continue to shed the oocyst in faeces thereby contaminating the environment (Holliman, 2000). The development of clinical coccidiosis in cattle depends mainly on factors like species and number of *Eimeria* oocysts ingested, age of infected animal, presence of concurrent infections and type of management practices (Ernst *et al.*, 1984).

Clinical disease produces profuse and sometimes bloody scours, which may contain gelatinous mucus, inappetence, raised tail, arched back, weight loss and death (Oluwadare, 2004). Coccidiosis is transmitted through faeco-oral route (Oluwadare, 2004). Coccidiosis is diagnosed by clinical signs, faecal examination by flotation or smear, and by post-mortem examination. Coccidiosis causes significant economic losses due to reduced performance, death from direct infections, and by predisposing cattle to secondary bacterial and viral infections. Additional economic losses occur because of the labour demand for care and treatment of infected cattle and medication costs (Foreyt *et al.*, 1981). Tetracycline is a broad-spectrum antibiotic that acts by inhibiting the 30s subunits of the bacteria RNA. It has, however, been reported to have 99% efficacy in the treatment of protozoans like coccidia without any side-effect (Dacasto and

Cocuzza, 1994; Jacob, 2015; Schoenian, 2016). This case report describes a successful treatment of coccidiosis in Bunaji bull-calves.

## MATERIALS AND METHODS

### History and Physical Examination

On the 6<sup>th</sup> September, 2016, the Resident Doctors in Large Animal section of Medicine Specialty of the College of Veterinary Surgeons of Nigeria, Ahmadu Bello University (ABU), Zaria study centre went on a routine ambulatory visit to a herd of 25 Bunaji cattle in Majeru Village in Zaria Local Government Area (LGA). The herdsman had laid a complaint of diarrhoea of 24 h duration in two 6-month-old Bunaji bull calves (Plate 1). The herd had no medical record. The action plan was to conduct thorough physical examination on both calves and other members of the herd, to collect and send faecal sample to helminthology laboratory of the Veterinary Teaching Hospital, ABU, Zaria and to manage the case accordingly. Based on the conducted physical examination, the several signs were revealed (Table 1):

## RESULTS AND DISCUSSION

The result from Helminthology laboratory analysis revealed *Coccidia* oocyst ++, Strongyle egg +. Treatment regimen was initiated based on tentative diagnosis of coccidiosis. Based on the severity of clinical signs, bull-calf A was treated with 5% oxytetracycline at 10 mg/kg body weight deep I.M once, and continued with oxytetracycline bolus at the same dosage for the next four days. Albendazole (2.5%) suspension was also administered *per os* at 7.5 mg/kg body weight once. Similarly, bull-calf B was treated using the same regimen, except for the 5% oxytetracycline injection that was administered intravenously once. However, treatment was continued after the laboratory confirmation of coccidiosis. Conventionally, treatment of coccidiosis in Nigeria is mainly done using amprolium, sulphur preparations and more recently toltrazuril and diclazuril. This report, however, highlights the use of tetracycline in the effective treatment of coccidiosis in calves. The

efficacy of tetracycline in the management of this case agrees with the findings of Dacasto and Cocuzza (1994), who reported 99.0% efficacy using tetracycline in the treatment of coccidiosis in goats in Burundi. Likewise, it has been used in the treatment of coccidiosis in dogs and cats (Colombatti, 1991). The intravenous administration of tetracycline in calf B was aimed at achieving faster onset of action of the drug because the calf was passing bloody faeces and was recumbent. The vital parameters in these calves were within the normal range because coccidiosis does not normally elicit systemic response, except in very acute cases where fever is eminent (Scott, 2016). Profuse foetid diarrhoea with string of mucus and fresh blood was noticed perhaps due to loss of absorptive capacity of the gut. One of the calves exhibited tenesmus; mostly due to constant irritation of the mucosal lining of the gastro intestinal tract, which in severe cases may lead to partial eversion of the rectum. Though diagnosis of coccidiosis in this case report was based on demonstration of the oocyst in faeces, diagnosis may be missed if based only on finding oocysts in the faeces (Oluwadare, 2004). It is worthy of note that there may be no oocyst at all in the acute stage of coccidiosis caused by *E. zurnii*. The season and age of the calves in question are strong predisposing factors for coccidiosis. Young animals are particularly susceptible to coccidiosis probably due to their undeveloped immune system, which is usually delayed in the farm environment due to immune-suppressing stress factors (Taylor and Catchpole, 1994). The calves showed tremendous improvement a day into the treatment and recovered fully on completion of treatment. However, in view of the fact that young animals get infected mainly through contamination of pasture/grazing land by older animals, separation of younger animals from older ones should be ensured to avoid putting susceptible younger animals at risk (Dauguschies and Najdrowski 2005). Immunity of calves should therefore be enhanced making sure that adequate colostrum is taken promptly after calving. Prevention of infection from

contaminated feed or fodder are the important steps for controlling coccidiosis. Furthermore, strategic prophylactic treatment with coccidiostats may also be put in place.

### CONCLUSION

It was concluded that oxytetracycline is beneficial and effective in the treatment of coccidiosis in calves.

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**Table 1. Signs observed from physical examination of Bulls.**

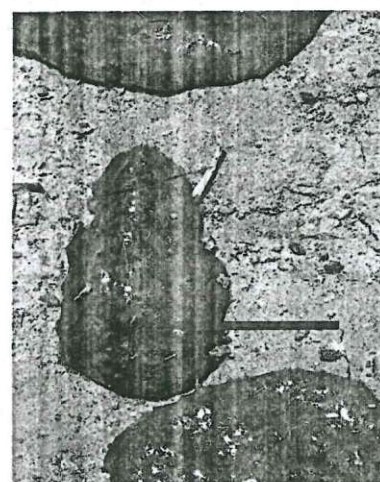
| Bull-calf A (82 kg)                                                                                                                                                                                                                                                                                                                                                                             | Bull-calf B (65 kg)                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Respiratory rate: 28 cycles per minute</li> <li>• Pulse rate: 72 beats per minute</li> <li>• Rectal temperature: 37.7°C</li> <li>• Sero-mucoid nasal discharge</li> <li>• Dry muzzle</li> <li>• Mild dehydration (5%)</li> <li>• Congested mucus membrane</li> <li>• Matted perineum with stringy foul smelling mucoid diarrhoea (Plate II)</li> </ul> | <ul style="list-style-type: none"> <li>• Respiratory rate: 28 cycles per minute</li> <li>• Pulse rate: 72 beats per minute</li> <li>• Rectal temperature: 38.5°C</li> <li>• Pinnae were warm to touch</li> <li>• Dark foul smelling green mucoid diarrhoea with frank blood voided (Plate III)</li> <li>• Tenesmus during and after defaecation (Plate II)</li> </ul> |



**Plate I. Bunaji bull-calves with evidence of diarrhoea**



**Plate II: Bull-calf showing tenesmus.**



**Plate III: Bloody diarrhoea from bull-calf with voiding faeces with mucus.**