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THE EFFICACY OF DRUGS IN THE TREATMENT OF COCCIDIOSIS IN CHICKEN IN SELECTED POULTRIES

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ABSTRACT

Studies on the efficacy of drugs in the treatment of coccidiosis in chicken in selected poultries in both Ekiti and Ogun States was carried out. Sixteen(16) poultry farms were visited and data on the level of coccidiosis and drugs used in the treatment were collected. A total of 61,200 birds were examined in all the sixteen (16) poultries visited, out of which 4,287 birds were infected with coccidiosis, Aspergenosis and Newcastle diseases representing 7.0%. The breakdown of the infections showed that, Folnex poultry farm has the highest percentage of infection with 30% and Nugacom poultry farm has the least percentage of coccidiosis infection with 3%. Totravet drug was found to be most effective in the control of coccidiosis with 75% cure while pluricocin was found to be least effective against the treatment of coccidiosis with 25.6% cure. Every drugs used has its own active ingredients, approved species using the drugs, specificity, dosage and the withdrawal times.

Keywords: Drug(s), coccidiosis, chicken, poultry/farm and treatment.

INTRODUCTION

Poultry industry in Nigeria has recorded considerable expansion in recent times. The creation of States in the country, and increase human activities within the States to earn money to maintain the living and increase in population led to the increase in the demand for animals' protein in form of poultry products (FAO, 2006). This has led to the establishment of poultry farms around major cities in the States. The overall natural increase in poultry production has probably triggered off vigorous research into alternative and cheaper feed resources urgently needed to sustain such growth and the need to continually focus attention on the health of the animals in other to realize the full potentials of the industry (Barksh, 2009).

Poultry diseases remain one of the major threats to boosting poultry production in Nigeria. Parasitic diseases are of particular importance because of their high incidence in poultry occasioned by the tropical environmental conditions under which the farmer operates (Seifert, 2006) Epidemiological studies have established the economic importance of coccidiosis as a major parasitic disease of poultry in Nigeria (Chapman, 2008). Coccidiosis is recognized as the greatest economic impact on poultry production, coccidiosis caused the poultry industry to suffer a considerable economic loss especially in the production of broiler chickens, chickens are susceptible to about nine (9) species of coccidian out of which *Eimeria tenella* and *Eimeria maxima* are the most common. Coccidia are specific to chickens and cannot infect other types of birds or mammals. The parasite multiply in the intestine and causes tissue damage, lowered feed intake, poor absorption of nutrients from the feed, dehydration and blood loss (Seifert, 2006). The research is focused on the determination of efficacy or efficiency of various anticoccidial drugs in the treatment of coccidiosis in chicken within Ekiti and Ogun States.

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MATERIALS AND METHODS

The Study Areas

The study was carried out in both Ekiti and Ogun States respectively. Ekiti State is made up of sixteen (16) Local Government Areas. It is located between latitude $7^0 15^1$ and $8^0 5^1$N and longitude $4^0 5^1$ and 5^0 45^1E. Ogun State is made up of twenty (20) Local Government Areas and it is located on latitude 7^0 00^1N and longitude 3^0 35^1 E of Nigeria. Both are located in South West of Nigeria and classified under the humid tropical rainforest zone. There are two distinct seasons characterized by seven months (April-October) of wet season and five months (November-March) of dry season. Temperature ranges between 21^0 and 28^0c with high relative humidity of about 81%. The mean monthly rainfall is about sixty-five percent (65%). Rural households in the States keep few sheep, goats, local chickens and pigs. Extensive rearing of cockrels, layers and broilers exotic birds have become popular in the cities and towns. Major crops found in these areas are yam, cassava, maize, rice, vegetables and cash crops like cocoa, rubber, kolanut and citrus.

Data collection

The study involved scrutiny of farm and clinical records as well as distribution of structured questionnaires to farmers and their managers, private and Government veterinarians and Agricultural Extension Officers to elicit relevant data or farm activities across the States. Data were obtained in sixteen poultry farms randomly selected across the two States with eight poultries visited in each State. Required questions were asked, pretested to eliminate ambiguity and then used during scheduled interviews to elicit relevant information needed from the farmers, managers and other key players in the selected farms. Enough time and necessary explanations were offered to the respondents enabling them to give clear answers to the questions. Where farmers were not sufficiently literate questions were translated into their local language and their response recorded.

The provided answers to the questions were correctly written down and used for the evaluation. Farm records where available were scrutinized and direct observation on the hygienic practices in each farm noticed. Clinical records in the study were generated through the diagnostic activities of States and private veterinarian, Agricultural Extension Officers or the farmers themselves.

Coccidiosis Diagnosis

Coccidiosis diagnosis was carried out by clinical examination of the flocks on the individual cases, postmortem and parasitological examination of feaces and intestinal scrapings. The farmers on the other hand usually based their diagnosis of coccidiosis on the combined factors of citing bloody diarrhea from the birds and witnessing a positive response of such diarrheic birds to coccidiosis treatment. The primary drawback of this practice is probably that only coccidiosis cases presenting bloody diarrhea are diagnosed while “occult” cases are omitted or ascribed to other diseased conditions. Descriptive statistics were used to analyse the results.

RESULTS

The results of this study are showed in terms of the percentages of infection, drugs used for the prevention and treatment of coccidiosis in the poultry farms. The results of the infections showed that of the 2,000 birds in Bimba Agro Integrated farm, 400 were infected with coccidiosis representing 20%. At Adelodun farm, where there were 600 birds, out of which 30 and 20 were infected with both coccidiosis and Newcastle diseases representing 5.0% and 3.3% respectively. Folnex farm have 1,000 birds, out of which 300 were infected with coccidiosis representing 30.0%. At Ifelodun farm, there were 3,000 birds, out of which 150 were infected with Aspergenosis representing 5.0% (Table 1).

A total of 61,200 birds were examined in all the sixteen (16) poultries visited, 4,287 birds were infected with coccidiosis. Aspergenosis and Newcastle diseases representing 7.0%. The breakdown of the infections showed that, Folnex farm has the highest percentage of infection with 30% while Nugacom poultry farm has the least percentage of coccidiosis infection with 3%. (Table 1).

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Totravet drug proved most effective in the treatment and control of coccidiosis with 75.4% cure while pluricoccin was found to be the least effective drug in the treatment of coccidiosis with 25.6% cure (Table 2). All the drugs used have its own active ingredients, approved species using the drugs, specificity, dosage and the withdrawal times (Table 2).

Table 1. Poultry Farms and Percentages of Infected Birds

Name of Farm	No of Birds	No of Infected Birds	% of Infected Birds	Type of Disease	Drug Treatment
Bimba Agro Integrated	2000	400.00	20.0	Coccidiosis	Prococ
Adelodun	600	30 20	50 3.3	Coccidiosis and Newcastle	Kepcox
Folnex	1000	300.00	30.0	Coccidiosis	Totravet
Adeola	3000	200.0	13.3	Coccidiosis	Amprocox
G-EM Limited	1000	600	6.0	Coccidiosis	Pluricoccin
Oloyede	2000	100.00	5.0	Newcastle	Intracox
Tayelolu	3000	200.0	6.7	Coccidiosis and Newcastle	Kepcox
Nugacom	1000	30.0	3.0	Coccidiosis	Amprolium
Adeolu	700	90	12.9	Coccidiosis	Amprocox
Ifelodun	3000	150.0	5.0	Aspergenosis and Coccidiosis	Coccifor
Oyenuga Integrated	5000	500.0	10.0	Coccidiosis	Dufacox
Tobex	900	100.0	11.1	Newcastle	Prococ
Oluwafemi Livestock	2000	135.0	6.8	Coccidiosis	Emberzineforte
K &T Management	1200 0	500.0	4.2	Coccidiosis and Newcastle	Intracox
3S Agro	6000	332.0	5.5	Coccidiosis	Amprolium
Abayomi	9000	400.0	4.4	Coccidiosis	Sulphaepron 100g

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Table 2. Drugs Used in the Treatment of Coccidiosis in Selected Poultries

Trade Name	Drug Ingredient	Approved Species	Specificity	Label dosage for poultry	Withdrawal time
Dufacox	Amprolium and Sulfaquinoxaline	Poultry	Used for the control and treatment of coccidiosis	1000g/100L of water for 3-4 days	Poultry: 5 days slaughter
Prococ	Amprolium and Sulfaquinoxaline	Poultry	Used in Prevention and treatment of Coccidiosis	100g/150L of water for 3-4 days	7 days slaughter
Emberzineforte	Sulfaquinoxaline and Piaveribine	Poultry	Used in treatment of Coccidiosis	30g/50L of water for three days	Nil
Sulphaepron 100g	Sulfaquinoxaline and Amprolium	Poutry and Cattle	Prevention and treatment of coccidiosis and bacterial infection in poultry	100g/150L of water for 5-7 days	7 days slaughter
Intracox	Sulfadiminidine and Furaltadone	Poultry, Piglets and Rabbit	Treatment and prevention against coccidiosis and fowl typhoid	100g/100L of water for 24 hours (1 day)	Nil
Pluricoccin 100g	Sulfaquinoxaline and pyrimephamin	Poultry, Swine, Cattle and Rabbit	Treatment against coccidiosis	1ml/L of water for 3 days	21 days slaughter

DISCUSSION

Coccidiosis has been a devastating disease and causing rapid mortality among the poultry farm animals. The production of drugs used in the treatment of this diseased condition helps a lot in the revival of the poultry birds as at the very first time of drug production due to their mode of action (Chapman, 2009). Infections with species of the genus *Eimeria*, the causative agent of coccidiosis in poultry has been shown to be due to *Eimeria tenella, Eimeria necatrix, Eimeria brunette* and *Eimeria acervulina* in Nigeria (Ruff, 2006). Also, the role of common housefly in the mechanical spreading of coccidiosis, thus predisposing even birds in new houses to outbreaks have been emphasized by recent study (Alawa, et al, 2000).

The highest percentage of infection recorded in Folnex farm may be due to unhygienic maintenance of poultry farm such as leaving the wet and dirty litters unpacked for long period and feeding of the poultry birds with malnourished feed meal by the managing personnels (Chapman, 2008). The least percentage of coccidiosis infection recorded in Nugacom poultry farm may be due to the fact that the poultry was handled by trained personnel who carefully took necessary precautions involved in poultry management and infection which might be as a result of transmission by some agents such as birds and animals transporting the oocysts from the infected neighboring poultries but unable to multiply rapidly due to hygienic maintenance (Chapman, 2008). The higher prevalence rate of coccidiosis during the rainy season agrees with earlier report that the disease incidence prevalence is positively influenced by warm and humid weather that characterizes the rainy season period which inturn provides favourable conditions for growth and development of the infective oocysts (Etuk, 2010).

Totravet drug proved to be most effective in the treatment of coccidiosis among all drugs used because it treated the largest percentage of infected birds. The efficiency of a drug is determined by a number of factors which include, the kind of environment the farm is located whether it support the rapid growth and development of the parasite, the hygienic maintenance of the farm and the ability of the coccidian to develop resistance to individual drugs used. The use of anticoccidial drugs by farmers agrees with earlier reports that coccidiosis though highly prevalent, can be successfully managed using a combination of chemoprophylaxis and good hygienic practices (Chapman, 2007).

Poultry farmers in selected poultry farms within Ekiti and Ogun States tend to have a clear knowledge of coccidiosis and its pattern of outbreak probably from their experiences with the indigenous chicken and contact with veterinarians. Prevention is the best form of disease infection management but in a situation whereby poultry chickens have already been infected, treatment is inevitable. Coccidiosis remains a very important health problem in intensive poultry husbandry in Nigeria (Etuk, 2010). Continued education and extension services are recommended for poultry farmers in both Ekiti and Ogun State in order to update them on the advantages of vaccination and adoption of integrated approach involving good hygienic practices and the use of both drugs and vaccines to prevent the disease.

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