

Coproparasitological evaluation of specimens of *Amazona rhodocorytha* in private breeding captivity in Espírito Santo

Avaliação coproparasitológica de espécimes de *Amazona rhodocorytha* mantidos em criatório particular no Espírito Santo

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Abstract Incorrect management techniques can contribute negatively to the health of captive birds. Among these various diseases that may develop, the endoparasites is one of the most commonly reported. Was studied the occurrence of endoparasites in 11 parrots *Amazona rhodocorytha* in captivity of Commercial Breeding and Conservationist. Collected a pool of fecal samples for subsequent laboratory examination by the methods Willis Mollay, Faust and Hoffman modify. The diagnosis was positive for *Eimeria* sp. The animals were treated for five days with trimethoprim sulfamethoxazole associated with, 50mg/ml suspension at a dose of 30mg/kg every 24 hours, along with changes in the management sanitary. In late of treatment, there was another coproparasitologic to certify the absence of parasites. The result was negative for endoparasites.

Keywords: wild birds, captive, coccidiosis.

Resumo Técnicas incorretas de manejo podem contribuir negativamente para a saúde de aves cativas. Dentre várias enfermidades que estas podem desenvolver, o endoparasitismo é uma das mais comumente relatadas. Analisou-se no presente trabalho exame coproparasitológico de 11 *Amazona rhodocorytha* procedentes de cativo mantidas em Criadouro Comercial e Conservacionista. Foi coletado um “pool” de amostras fecais para posterior exame laboratorial através dos métodos Willis Mollay, Faust e Hoffman modificado. O diagnóstico foi positivo para *Eimeria* sp. Os animais foram tratados durante cinco dias com Sulfametoxazol associado à Trimetoprim, suspensão 50mg/ml na dose de 30mg/kg a cada 24h, juntamente com mudanças no manejo sanitário. Ao final do tratamento, realizou-se outro

exame coproparasitológico para certificação de ausência parasitária, resultado foi negativo para endoparasitose.

Palavras-chaves: aves silvestres, cativo, coccidiose.

Introduction

One of the most frequent health problems detected in wild birds is parasitism (Reed *et al.* 2003; Marietto *et al.* 2009). Parasitism is a condition in which a parasite depends upon a host in order to maintain its life cycle, thus developing a close relationship between two organisms (Lederberg 1998).

This way, parasitism, especially endoparasites, is directly related to the behavior, nutrition and reproduction of wild birds, resulting in serious consequences for the conservation of species. In particular, for those in danger of extinction due to their possible involvement with serious infections, that lead the animal to death, which may cause a population deficit (Freitas *et al.* 2002, Marietto *et al.* 2009). Intestinal parasitic infections may be asymptomatic, and usually affects more young animals than adults (Freitas *et al.* 2002; Muller *et al.* 2005).

Coccidiosis is a parasitic disease very common in birds, caused by a protozoan, especially the genera *Eimeria* and *Isospora*. Both are parasites of domestic animals as well as wild animals and develop persistent disease, especially when animals are bred in captivity (Upcroft *et al.* 1997). The objective of this study was to do the coproparasitological profile of 11 *Amazona rhodocorytha* (Figure 1) maintained in



Figure 1: Specimen of *Amazona rhodocorytha*

a Commercial Breeding and Conservation captivity, located in the state of Espírito Santo, Brazil.

Methods

The specimen of *A. rhodocorytha* used in this study belonged to a Commercial Breeding and Conservation facility (IBAMA License No. 591233) located near Km 21 of the Rodovia do Sol, in the Retiro do Congo town of Vila Velha - ES. The place was a farm of approximately 2.5 ha, surrounded by a forest reserve and farms. The breeding facility had several fruit trees like orange, mango, avocado and papaya among others. There were a total of 31 parrots (*Amazona aestiva*, *Amazona amazonica* e *Amazona rhodocorytha*) distributed in nine rectangular cages sizes ranging from 1.5 m wide by 1.5 m long by 2.0 m high to 3.0 m wide by 2, 0m in length and 2.5 m in height.

On the front side, each cage had an access door. Within each nursery, there were branches, small trees, perches and nest box lined with coconut straw. The enclosures were surrounded by railings and approximately 50% of it was covered with corrugated fiber cement tiles, which made it possible to have protection against rain, sun and shadow, and prevent from small birds entering through the hole. On the floor, there was cement and dirt.

According to necessity, or approximately every two months, all cages were painted with lime. For feeders, it was used aluminum containers (washed and disinfected daily with sodium hypochlorite at 1000 ppm free of chlorine) and for troughs, plastic containers, that were not disinfected. They were arranged in small easels about 60 cm from the ground, or hung on the screens of the cage, at the same height. Every day the cage was washed, with pressured water. A caretaker was responsible for dealing with the farm animals, which in addition to parrots, also had chickens and dogs. Parrots were fed twice a day, in the morning and afternoon. The diet varied from fruits,

vegetables, seeds, grains, industrialized extruded food and home cooked diet not directed to the species. Water was provided *ad libitum*.

A pool of fecal samples was collected of 11 adult parrots *A. rhodocorytha* from the same premises, with no signs of disease, the same management conditions and known history of about five years. The samples were placed in universal collectors and kept in refrigeration (about 4°C) until latter laboratory analysis. For parasitological examination, we used the methods Mollay Willis, Hoffman and the Faust modified (Hoffmann 1987).

Results

The coproparasitological examination revealed positive results for *Eimeria sp* in the collected samples. After the result, the animals were treated with Trimethoprim Sulfamethoxazole associated, 50mg/ml suspension at a dose of 30mg/kg every 24 hours for five consecutive days. There were changes in the sanitary management during and after the treatment with washing and disinfecting troughs daily (sodium hypochlorite 1000 ppm of free chlorine) and the enclosure (sodium hypochlorite 1000 ppm of free chlorine and lime paint after cleaning). At the end of the treatment, another coproparasitologic exam was done to certify the absence of parasites. The result was negative for endoparasitose.

Discussion

Coccidiosis is one of the most common parasitosis found in birds, its transmission occurs via contaminated feces with sporulated oocysts (Lopez *et al.* 2007).

The genus *Eimeria sp* is a group of important pathogens of great relevance in Veterinary Medicine. The life cycle occurs in a single host and parasites generally colonize epithelial cells of the intestinal mucosa (Chapman e Shirley 20003). It occurs most commonly in galiformes, columbiformes, guiformes, anseriformes and psittaciformes, and all of these may have clinical signs such as diarrhea, cachexia, depression and apathy (Beynon *et al.* 1996).

They originate enteritis of various degrees, which may cause from imperceptible lesion to significant damage in deep mucosa. In general, morbidity is quite common in confined animals, but mortality is relatively uncommon, and is generally associated with secondary bacterial infections (Pakandl 2009).

The animals in this study were adults without any apparent clinical signs, data that corroborates with the results of López *et al.* (2007) citing that adult animals may be carriers of coccidia without presenting signs of disease. Inappropriate sanitary management, coupled with the introduction of new birds to breeding, without fecal examinations and quarantine, and the access of wild free-living birds to the enclosures, may

lead to contamination of birds (Marietto *et al.* 2005)

What may have facilitated the contamination and maintenance of parasites observed in this study was the inappropriate sanitary management. Failure to daily disinfect troughs led to the accumulation of organic matter, and the height of the trestles with the canister, enabled the animals to defecate over their own food. The openings in the enclosures allowed the entering of anthropogenic birds, which eventually ate and defecated within the enclosures.

The high incidence of coccidiosis in several bird species, leads to resistance of the protozoan, to drugs and chemical disinfectants, making it difficult to control the disease, besides decreasing the immunological and metabolic efficiency of birds (Vertommen 2004). There was not a regular parasite control in the breeding facility. The drugs were administered randomly and without Veterinary Medical prescription.

Captive animals are more prone to parasitic infections than free-living animals (Diniz *et al.* 1995) due to its constant maintenance in a contaminated environment (Greiner *et al.* 1994).

The gastrointestinal parasites pose a risk to wild birds, especially birds kept in captivity, since they are more susceptible and more affected due to their association with stress, inadequate nutrition and systemic diseases (Freitas *et al.* 2002).

It is of extreme importance that the sanitary management and nutrition are suitable for animals subjected to captivity, and that periodic clinical monitoring is done to detect possible infections, increasing the chances of curing the animal and improving their life quality.

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