

POINT PREVALENCE STUDY OF PARASITIC INFECTIONS IN EMU (*Dromaius novaehollandiae*) BIRDS IN ANAND, GUJARAT

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Abstract: The present study was designed with an aim to generate information on different parasites which infecting emu. A total of 100 faecal samples were collected from emu birds aged between six months to five years from different emu farms at Anand, Gujarat, India. Intestinal and caecal contents from 50 carcasses were also collected during post-mortem examination performed in Department of Veterinary Pathology, College of Veterinary and Animal Science, Anand, Gujarat, India from local emu farm. All 100 faecal samples were subjected to faecal sedimentation and floatation techniques and out of them only five samples revealed presence of ova of *Ascaris* spp. indicating parasites are not a common problem in emu farming.

Keywords: Emu, sedimentation technique, floatation technique.

Introduction

Emu (*Dromaius novaehollandiae*) is the second largest bird native to Australia and belongs to the ratite group of flightless birds [1, 2]. These birds can be well maintained on extensive (ranches) and semi-intensive rearing system with reasonably high fibrous diets and can adapt to most of the extremes climate, if they are given proper protection and management [3, 4]. Despite tremendous improvement in management and farming conditions new disease problems are seen in emu. Many of these diseases are the result of inbreeding and mix farming system as no scientific approach is being made for their breeding. With the increase in numbers of farm-raised ratites throughout the world there has been a global increase in the

spread of parasitic and transmissible diseases. The transport of emu birds across borders has created the potential for the spread of contagious diseases [5, 6].

Emu farming has the fast stride in the recent years throughout the globe [6], but not much work has been done regarding it. The literature on parasitological investigation in emu is scarce and to our knowledge, only few reports could be traced on parasitic prevalence on emu. The objective of the present investigation was to know the prevalence of parasitic infections in emu population in Anand, Gujarat, India.

Materials & Methods

A total of 100 faecal samples were collected from different emu farms in Anand. Approximately, 15-20 gm of freshly voided faecal sample per bird was collected in the airtight containers labelled with specific details (age of birds and place of collection). After collection, all the samples were immediately transported to the laboratory of Department of Veterinary Pathology, College of Veterinary and Animal Science, Anand, Gujarat by using ice bag and stored in refrigerator (4°C) and processed within 48 h through coprological methods.

Along with that total of 50 intact whole intestines of farm emu birds were collected which were brought to the laboratory for post-mortem examination from local farm located in Anand. The intestines were dissected longitudinally and screened for the presence of parasites. Intestinal and caecal contents from 50 carcasses were collected for the presence of parasite.

Faecal samples collected from the live emu birds were processed by routine sedimentation and floatation method according to procedure given by Bowman and Lynn [7]. Intestinal and caecal content were also examined by sedimentation and flotation methods as per the procedure of Bowman and Lynn [7] for the presence of parasitic egg/coccidian oocysts. Skin and feathers, trachea and lungs of all the carcasses were examined for the presence of any kind of ecto or endo parasites, respectively.

Results

Skin and feathers were examined for the presence of ectoparasite while trachea, lungs, intestine and caeca of all the carcasses were examined for the presence of endo parasites. Intestinal and caecal contents were screened under microscope for parasitic eggs and oocysts. None of the carcasses showed presence of any parasites or their eggs/oocysts.

The parasitological investigation was further extended by collecting faecal samples from 100 birds of eight different emu farms having age between six months to five years. Out of these

samples, five were found positive for the eggs of *Ascaris* spp. (Fig. 1 and Fig. 2). All positive samples were from birds of one year or below one year of age. Besides *Ascaris* spp. no other parasitic egg or oocysts were found in these faecal samples.

Discussion

It is believed that emu birds are very hardy and disease resistant. There are few reports of parasitic disease in emus [8, 9]. In present study, involvement of any parasitic diseases with mortality could not be found. All carcasses were free from any internal and external parasite. Interestingly in present study too we found that all the positive samples for parasites were from young birds of age one year or below which were found similar to other study by Narayanan *et al.* [9].

The present findings were in the total agreement with Biswal *et al.* [10] in which they found all the 54 gastrointestinal tracts and 230 faecal samples examined were negative for the presence of any parasitic species in emu birds. However, only two different types of helminthic ova were recovered from emu faeces which could not be identified based on available morphological reference of parasites.

Similarly Parsani *et al.* [11] examined seven emu faeces and found one bird affected with *Ascaris* spp., whereas in present investigation 5 Samples out of 100 faecal samples were positive for presence of *Ascaris* spp.

The work done and literature is limited about the parasitism of emu. However few workers Fox *et al.*; Rickard *et al.*; Vaughan *et al.*; O'callaghan *et al.*; Naik and Kumar and Papini *et al.* [12, 13, 14, 15, 16, 17] have recorded *Plasmodium* spp., nematodes (*Cyathostoma variegatum*), trematode (*Fasciola hepatica*), cestodes (*Raillietina* spp.) and coccidial oocysts, respectively, but still more such studies should be required to know the epidemiology and parasite control strategies, which assists in the improving the productivity of emu.

Conclusion

The present study was conducted on a small emu population from a small geographical area but more such studies are required to find out the parasitic burden on emu and approach should be made to discover the factors associated with the comparative high parasitic resistance of emu birds. As emu farming is quite new, more attention should be paid to veterinary problems and health management to raise interest of emu farmers and people in concern.

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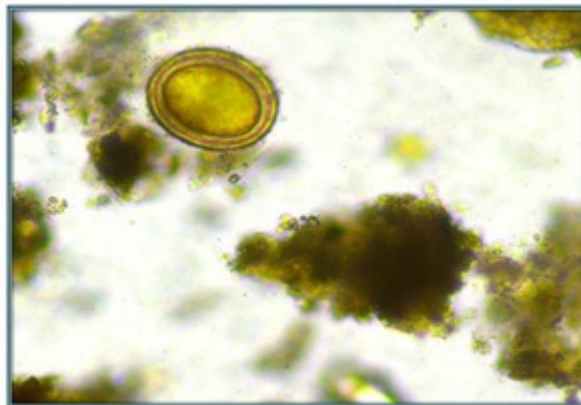


Figure 1. Photograph of egg of *Ascaris* spp. (10x)

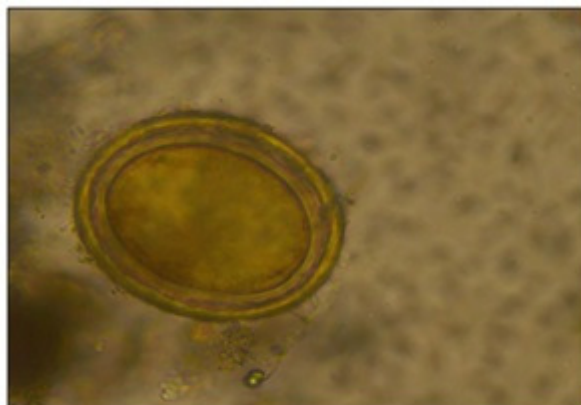


Figure 2. Photograph showing egg of *Ascaris* spp. (40x)