ZEBRA PROJECT ABSTRACTS

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FAECAL GLUCOCORTICOID METABOLITES ANALYSIS IN HOODED PITTA *Pitta sordida* ; HORMONAL CHANGES DUE TO MOVING AVIARY AND OPEN-TO-PUBLIC STIMULI

K L Lee

Abstract

With the brand new opening of a walk-through bird exhibit in the London Zoo, an investigation was performed to evaluate the stress which the birds might experience from serial events; the moving of the aviary, changing environment and then opening-to-the public. The faecal glucocorticoid metabolites (FGMs) from droppings of five Hooded Pittas *Pitta sordida* in the London Zoo were monitored for four months. EIA was chosen to measure the hormone metabolite levels. The FGMs level was significantly decreased in the group of after the public opening, compared to the "before move" group. It is considered that the new semi-natural, mixed species enclosure provides an improved environment for the observed birds and that the non-invasive hormone metabolite analysis is a useful method to monitor animal welfare status in long term studies.

Key words: Faecal glucocorticoids metabolites, non-invasive endocrine monitoring, Hooded pitta *Pitta sordida*, zoo animal welfare, zoo environment.

NORMAL HAEMATOLOGICAL VALUES IN NINE SPECIES OF WILDFOWL TO AID CLINICAL INVESTIGATION OF AVIAN TUBERCULOSIS

Beverley Wilson

Abstract

The Wildfowl and Wetlands Trust (WWT) screen all captive waterfowl at The London Wetlands Centre, Barnes, biannually for avian tuberculosis (aTB). An ELISA for aTB is performed on each blood sample and leucocyte counts are completed on blood smears on all those that test positive. Individuals that test positive are removed to minimise spread to other individuals and the environment.

The objective of this study is to determine reference intervals for leucocyte counts in captive-bred populations of 9 species of wildfowl from The London Wetlands Centre: Eurasian Wigeon *(Anas penelope)*, Mandarin *(Aix galericulata)*, South Georgian Pintail *(Anas georgica georgica)*, White-Faced Whistling duck *(Dendrocygna viduata)*, White-headed duck *(Oxyura leucocephala)*, Red breasted goose *(Branta ruficollis)*, Bewick swan *(Cygnus columbianus)*, Black swan *(Cygnus atratus)* and Black necked swan *(Cygnus melancoryphus)*.

The study used blood smears made during the spring (pre-nesting) season, screening from 2002 to 2007. Total leucocyte count and differential concentration reference intervals were calculated for each species. These reference intervals will now be used during the haematological diagnosis of aTB during testing by the WWT.

COMPARISON OF CORTISOL LEVELS IN SERUM AND SALIVA FROM WILD MEERKATS AND DEVELOPMENT OF A NON-INVASIVE TECHNIQUE TO OBTAIN SALIVA SAMPLES

Charlotte Alvis

Abstract

Cortisol has been used as an indicator of stress in many populations including humans, dogs and pigs. Meercats *(Suricata suricatta)* live in groups of varying sizes where the interactions revolve around co-operative behaviours. The complexity of these behaviours is not fully understood and it would be meaningful to determine the stress associated with different roles in the group. The aims of this experiment were firstly to determine whether saliva can be collected from conscious meerkats and secondly to establish if cortisol is measurable in meerkat saliva, and if so, how it compares to serum cortisol levels. Meerkats were blood-sampled under anaesthesia and saliva collected from their mouths at the same time, using Salivettes (Sarstedt Inc. D-151588, North Carolina, USA).

On separate days, the same meerkats were approached while conscious and tempted to chew on a Salivette to collect saliva. Assays of the conscious saliva collected showed that cortisol can be measured and the levels ranged from 0.87-1.66ug/dL. Extracting saliva from the Salivettes for analysis was the main limitation in the method of collection from unconscious meerkats. As a result, there are an inadequate number of samples to allow comparison with serum cortisol levels which ranged from 1.73-8.39ug/dL.

QUALITATIVE RISK ANALYSIS FOR THE IMPORTATION OF LIVE AMPHIBIANS INFECTED WITH *Batrachochytrium dendobatidis* (CHYTRIDIOMYCOSIS) INTO GREAT BRITAIN

Alison Peel

Abstract

Global trade in amphibians is implicated in the emergence and spread of the amphibian fungal disease, chytridiomycosis (*Batrachochytrium dendobatidis, Bd).* It has been proposed that the establishment of chytridiomycosis in Great Britain could pose a serious threat to survival of native amphibian populations. This qualitative risk analysis considers the likelihood of the introduction and establishment of *Bd* in amphibian population(s) in Great Britain occurring as a result of importation of infected live amphibians. OIE Risk Analysis Guidelines were followed in development of this risk assessment. *Bd* was identified as a hazard, with an overall high risk of release, establishment and spread in Great Britain. Risk management measures are suggested, however, further investigation is required in order to assemble a complementary set of measures to reduce risks while ensuring that negative effects on trade are minimised. To supplement the risk analysis, data was obtained on the volume and origin of amphibian trade entering Great Britain and a selection of amphibians across the pet, aquatic, laboratory and zoological trades were sampled to detect the presence of *Bd* infection. It was determined that current systems recording amphibian trade from Third Countries into Great Britain underestimate the volume of this trade tenfold. *Bd* infection was detected in amphibians imported for the pet trade and also in captive pet, laboratory and zoological collections. A nation-wide survey to determine the incidence of *Bd* infection in wild and captive amphibians is required. A new database of the known global distribution of *Bd* infection in amphibians was compiled and published online.

Keywords: amphibian trade, chytrid fungus, risk assessment.