

## **Mycological isolation from animal enclosures and environments in National Wildlife Rescue Centre and National Zoo, Malaysia**

### **ABSTRACT**

It is important to provide a baseline of fungal composition in the captive wildlife environment to better understand their role in overall wildlife health. The objectives were to identify species of fungi existing within wildlife animal enclosures and their environment at the National Wildlife Rescue Centre (NWRC) and the National Zoo, Malaysia and to describe their medical and veterinary importance. Samples of air, wall or floor swab, enrichment swab and soil were taken from the animal enclosures, exercise yard and enrichments at NWRC and National Zoo respectively. All samples including those pre-treated samples were plated onto Sabouraud's Dextrose Agar (SDA). Numerous fungi were grown on all sampling SDA plates regardless by either single or multiple growth. Samples of air in both NWRC and National Zoo had the highest growth of *Penicillium* spp. with a prevalence of 31.2% and 83.7% respectively. Samples of swab from the wall, floor and enrichments were predominantly by *Candida* spp. (42.6%) in NWRC and *Penicillium* spp. (41.6%) in the National Zoo. Prevalence of multiple fungi isolated from the soil samples in NWRC were 57.9% and yeast species was the most common in National Zoo with a prevalence of 88.9%. Overall, 29 and 8 isolates were found in both samples from the NWRC and National Zoo with a predominant species of potential zoonotic fungi have been identified in both premises. The expected fungus *Aspergillus* spp. was not isolated in all samples in NWRC. Prevalent fungal species found in this study are known to cause disease in animals and humans as primary pathogen and also as opportunistic pathogens that may also cause infection. Thus, health safety precautions should be considered particularly in dealing with conservation of endangered wildlife species, along with personnel and public involvements.

**Keyword:** Captive; Enclosure; Fungal; Wildlife; Zoo