MANAGEMENT OF MALAYAN SUN BEAR (Helarctos malayanus) IN BORNEAN SUN BEAR CONSERVATION CENTRE, SEPILOK SANDAKAN SABAH WITH EMPHASIS ON DEWORMING PROGRAM

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FPV 2015 41

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A project paper submitted to the

Faculty of Veterinary Medicine, Universiti Putra Malaysia

in partial fulfilment of the requirement for the

DEGREE OF DOCTOR OF VETERINARY MEDICINE

Universiti Putra Malaysia

Serdang, Selangor Darul Ehsan.

March 2015

It is hereby certified that we have read this project paper entitled "Management of Malayan Sun Bear (*Helarctos malayanus*) Bornean Sun Bear Conservation Centre in Sepilok Sandakan Sabah with emphasis on the Deworming Program" by Fatin Nabilah bte Aziz and in our opinion it is satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the course VPD 4999 – Project.

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ACKNOWLEDGMENTS

I wish to thank my supervisor, Professor Dato' Dr. Abdul Rani Bahaman for his most support and encouragement. He kindly read my paper and offered invaluable advice on the project, organization and the title of the paper.

My deepest gratitude to Professor Dr. Rehana for her unceasing patience to provide valuable advice on parasitology in my study. I would like to thank Associate Professor Dr. Shaik Mohamed Amin Babjee for his knowledge on wildlife and his guidance in this study.

I would like to thank Mr. Wong Siew Te to who provided me a long list of journals of sun bear that help me in understanding more about sun bear. His support and guidance is an inspiration for me. Words cannot express the appreciation and respect I have developed for my Supervisor, co-supervisors , a great scholar, progressive teacher , mentor and support my confidant.

I would like to thank all staff in Bornean Sun Bear Conservation Centre (BSBCC), especially Tee Thye Lim who provided me a lot of essential information that is needed in this study. To all staff and bear keepers for their unceasing patience helping me in collecting the sun bear feces sample. This is second time I have come to this place and the joyful environment of working is still there. Thank you for the experience. I would like to thank Dr. Laura Benedict for her unceasing patience and her knowledge as a field wildlife veterinarian. Her opinion is really much appreciated in this study.

I would like to thank Mr. Bernard and Mrs. Amirah for their kindness to allow me to use the laboratory in University Malaysia Sabah Kampus Sandakan.

I would like to thank all staff in parasitology laboratory especially Mrs. MaizatulAkmal Mokhtar and Mr. Abdul Rashid for their guidance in microscopy examination during identification of parasites.

I would like to thank my dad for his broad knowledge on wildlife and give tremendous support in my study. My deepest gratitude to my sister Nor Adilah Aziz for her knowledge in ecology and animal behavior in this study.

I would like to thank my husband Mohd Hasbollah for his support, love, and advice in this study. Finally, I sincerely thank to my family and besties (you know who you are) who provide an encouragement and support. This research paper would not be possible without all of them.

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PENGURUSAN BERUANG MATAHARI (*Helarctos malayanus*) DI PUSAT KONSERVASI BERUANG MATAHARI BORNEO DI SEPILOK SANDAKAN SABAH DENGAN MEMBERI PENEKANAN KEPADA PROGRAM KAWALAN CACING

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Endoparasit memainkan peranan penting dalam status kesihatan haiwan liar. Kajian ini bertujuan untuk menentukan keberkesanan program kawalan cacing yang berkaitan dengan amalan pengurusan yang dilakukan pada beruang matahari. Satu kajian telah dijalankan ke atas 18 daripada beruang matahari dalam pengurusan semi-kurungan dan di dalam kurungan di Pusat Pemuliharaan Beruang Borneo di Sepilok, Sandakan Sabah. Beruang tersebut telah

diberi anthelmintic Drontal® plus (Prazikuantel / pyrantelpamoate / febantel) tiga bulan sebelum kajian. Sampel tahi segar dikumpulkan dari lantai setiap sangkar beruang. Teknik standard parasitologi yang calitan tahi langsung, pengapungan mudah, kaedah pemendapan mudah dan satu lagi teknik yang efektif ialah eter pemendapan formal digunakan untuk mengesan kehadiran helmin ova dalam najis. Kajian ini memberikan bukti bahawa sekali setiap tiga bulan Drontal® plus ditambah dalam program rawatan cacing pakai di pusat ini telah berjaya mengawal infeksi cacing. Faktor pengurusan yang merangkumi pembersihan rutin, disinfektan yang digunakan, kepadatan stok dan kebersihan makanan dipercayai berkesan untuk mencegah endoparasitism dalam beruang ini. Kajian ini adalah dipercayai menjadi dokumentasi yang pertama dalam keberkesanan program rawatan cacing dalam pusat pemuliharaan beruang matahari.

Kata kunci: Beruang Matahari (*Helarctos Malayanus*), Program Rawatan Cacing, Pengurusan, Teknik Parasitologi Standard , Pemendapan Eter Formal

ABSTRACT

An abstract of the project paper presented to the Faculty of Veterinary Medicine in partial fulfilment of the Course VPD 4999 – Project.

MANAGEMENT OF THE MALAYAN SUN BEAR *(Helarctos malayauns)* IN BORNEAN SUN BEAR CONSERVATION CENTRE, SEPILOK ,SANDAKAN SABAH WITH EMPHASIS ON DEWORMING PROGRAM

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Endoparasites play an important role in the health status of captive wild animals. This study aims to determine the effectiveness of deworming program related to the management practices done on Malayan sun bear. A cross sectional study was done on 18 of the Malayan sun bear in semi-captive and captive management in the Bornean Sun Bear Conservation Centre in Sepilok, Sandakan Sabah. The sun bears were given anthelmintic Drontal® plus (praziquantel/pyrantel pamoate/febantel) three months before study. Fresh fecal samples were

collected from the floor of each bear cages. Standard parasitological techniques which are direct fecal smear, simple floatation, simple sedimentation method and another effective method which is formal ether sedimentation were used to detect the presence of ova in the faces. Results showed no helminth ova were present. The management factors which encompasses routine cleaning, disinfectant used, stocking density and food hygiene appeared effective to prevent endoparasitism in these bears. This study provides evidence that once every three month of Drontal® plus in deworming program adopted in this centre has successfully control helminth infestation. This study is belief to be the first documentation of the effectiveness of the deworming program in a Malayan sun bear conservation center.

Key Words: Malayan sun bear (*Helarctos malayanus)*, Deworming program, Management, Standard Parasitological Techniques, Formal Ether Sedimentation

1.0 INTRODUCTION

The sun bear *(Helarctos malayanus*) is the least studied bear species, and very little information exists on the threats to its survival (Meijaard, 1999).

The Malayan Sun Bear (*Helarctos malayanus*) is the smallest of the eight living bear species and differs from other ursids, particularly asiatic black bears *(Ursus thibetanus)* and sloth bears *(Melurus ursinus)* in that it is smaller in size, short sleek coat, modified rhinarium, more protrusible lips and tongue, and presence of whorls of hair on forehead and behind ears (Christopher *et al*., 2002). Sun bears in Borneo (*Helarctos malayanus euryspilus*) are different from those on the Asian mainland and Sumatra.

The Bornean Sun Bear Conservation Centre (BSBCC) Sepilok Sabah was establish with a mission to rescue the illegally captured sun bears, promoting sun bear conservation in Borneo through animal welfare, conservation, rehabilitation, research and education to stop the cruelty practices.

Parasites cause many problems for wildlife, although it often appears that wildlife have adapted to the presence of the parasites, they have not adapted to the adverse effect of parasitism which can lead to the effects of malnutrition and death in a immunsuppressed bears (Bliss, n.d.). There are some cases where the deworming program in captive wildlife is a failure, as reported by Nalubamba (2011), the anthelminthic treatment failure in captive wild impala antelope was due to anthelminthic resistance, improper administration of the drug and other management factor such as high stocking density.

The first objective of this study is to determine the efficacy of deworming program in Bornean Sun Bear Conservation Centre in Sepilok Sandakan Sabah. One of the problems occurring in the sun bear is parasitic infestation of gastrointestinal tract that can lead to death if the problem is not treated. The second objective is to relate the management practices that contribute to the effectiveness of the deworming program. Effective deworming program will help to reduce cost of anthelminthic drug, reduce anthelminthic frequency and prevent drug resistance. Gastrointestinal parasite infestation in the semi-captive sun bear is important to study because the environment and management of the cage and forest enclosure systems are predisposing factors that can lead to parasitic infestation. Therefore, the efficacy of deworming program needs to be done effectively. The spread of parasitic disease in the sun bear appears to have negative effects including development of secondary health problems and infectious disease can also impair the health of the sun bear in semi-captivity

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