

論文名稱: 台灣黑熊糞中性類固醇與其繁殖狀況之研究

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英文關鍵詞: *Ursus thibetanus formosanus* ; Enzyme-linked immunosorbent assay ; ELISA ; progesterone ; estradiol ; testosterone ; induced ovulation ; delayed implantation ; pseudopregnancy

資料來源 國家圖書館全國博碩士論文資訊網 <http://etds.ncl.edu.tw/theabs/index.jsp>

#### [ 摘要 ]

本研究應用非侵入型之方法，配合酵素免疫分析法 (Enzyme-linked immunosorbent assay, ELISA) 對台灣黑熊 (*Ursus thibetanus formosanus*) 糞便中孕酮 (progesterone, P4)、雌二醇 (estradiol, E2) 及睪固酮 (testosterone, T) 之濃度變化做長期的檢測，並配合行為觀察之記錄，藉以了解其繁殖生理狀態。結果顯示，糞便與血液中性類固醇具一致性，可反應出其生殖生理於內分泌上之狀態。台灣黑熊的總懷孕期，包括延遲埋植期 (delayed implantation) 約 7 個月半，並有刺激性排卵 (induced ovulation)、假懷孕 (pseudopregnancy) 的特殊生理現象。此外，母熊於分娩前後會出現不飲、不食亦不排泄等類似冬眠的習性。因延遲埋植與假懷孕之影響，故無法單獨以糞孕酮濃度變化作為診斷懷孕與否之依據，若配合雌二醇的檢測，可更明瞭其生理狀態，增加判斷之準確性。另外，由雄性睪固酮與光照時數的比較，初步顯示，台灣黑熊生殖內分泌的週期性可能受光照刺激所調節，惟資料仍薄弱，未來仍需多加研究以證實。

#### [ 英文摘要 ]

In this study, we use the method of non-invasive and Enzyme-linked immunosorbent assay (ELISA) to measure the steroid hormone (including progesterone, P4; estradiol, E2 and testosterone, T) concentration changes in the fecal of Formosa black bear (*Ursus thibetanus formosanus*). Besides, we keep the track of their behavior in order to catch the physiological condition of reproduction.

Our results reveal the consistence between fecal and blood in steroid hormone, and these results are correspondent with reproduction status in hormone changes. Including delayed implantation, the total gestation period of Formosa black bear is about seven and a half months. Besides, they have some special physiological phenomenon such as induced ovulation and pseudopregnancy. In addition, female bears can defend themselves without eating, drinking, urinating in the winter season while they are about parturient. For the

influence of induced ovulation and pseudopregnancy, we cannot diagnosis pregnancy only with the progesterone concentration changes. If we examine with estradiol, we can get better perspective about their physiological condition and increase the accuracy about the determination. Furthermore, it shows the season cycle of reproduction may probably adjust to illumination stimulation with the comparative between testosterone and illumination hours. For insufficient information, we need further study in the future.

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