

應用母長頸鹿糞中孕酮濃度變化 於其生殖狀況之探討

李素蘭* 張希賢* 陳玉燕* 趙明杰*
楊健仁* 陳寶忠* 林仁壽** 吳兩新**

李素蘭 張希賢 陳玉燕 趙明杰 楊健仁 陳寶忠 林仁壽 吳兩新 1994。應用母長頸鹿糞中孕酮濃度變化於其生殖狀況之探討。動物園學報6:53-60

摘要：本試驗應用糞便中孕酮濃度的測定，探討台北市立動物園雌性長頸鹿 (*Giraffa camelopardalis*) 的生殖狀況，以作為繁殖管理的參考。在15頭雌性長頸鹿中，包括7頭成熟母鹿及8頭未成熟雌鹿。自1991年9月起，3頭母鹿(#5~7)及8頭未成熟雌鹿，每2~3天採取糞樣1次，歷時2個月；另外4頭母鹿(#1~4)，除懷孕及泌乳時，每週採樣一次外，其他時間每2~3天採樣1次，母鹿#1及#3於1992年12月，而#2及4於1993年3月中旬停止採樣。糞樣經甲醇和石油醚萃取後，應用微滴盤酵素免疫分析法(EIA)測定其孕酮含量。試驗結果顯示：長頸鹿的動情週期為16天(n=2)，黃體期之糞孕酮濃度為1000~5000ng/g，而濾泡期為300ng/g以下。懷孕期長度為470天(n=1)，糞孕酮濃度為6062±2784ng/g(n=5)。分娩後，其泌乳乏情期為3~7個月，而未哺乳者約在1個月後即恢復動情週期。未發身的8頭雌鹿，有2頭之糞孕酮濃度顯著高於成熟母鹿之濾泡期濃度；而其餘6頭之糞孕酮濃度則很低。在台北市立動物園中的長頸鹿各項生殖資料，均與其他作者的報告相符合，顯示糞孕酮濃度的測定的確能清楚的反映其動情週期的變化以及懷孕等生殖狀態。

關鍵字：長頸鹿、糞孕酮、懷孕、動情週期、酵素免疫分析法

前言

長頸鹿(*Giraffa camelopardalis*)屬於偶蹄目長頸鹿科的反芻動物。據文獻記載，其動情週期約為2週(Lang, 1955a)，懷孕期約15個月(Savoy, 1966)，而且是全年皆可繁殖，根據Backhaus(1961)的觀察，發現圈養的53頭

母長頸鹿產仔日期，在一年當中的每個月份都有記錄，而Dagg and Foster(1982)在非洲 Nairobi Park連續3年以上對母長頸鹿產仔月份的觀察，亦有相同情形。

早期對長頸鹿生殖生理的研究，主要是利用行為觀察，並配合動物死後的剖檢(Kayanja and Blankenship, 1973; Gombe et al,

* 台北市立動物園

** 國立台灣大學畜產學系

REPRODUCTION FOR FEMALE GIRAFFES (*Giraffa camelopardalis*)
DETERMINED BY FECAL PROGESTERONE MONITORING

S.L. Lee, * S.S.Chang * Y.Y.Chen * M.C. Chao *
C.J.Yang * P.C.Chen * J.H.Lin * * L.S.Wu * *

ABSTRACT : The object of this study was to investigate the reproduction of the giraffe (*Giraffa camelopardalis*) by means of measuring fecal progesterone. Fifteen female giraffes (7 parous and 8 nulliparous) reared in Taipei Zoo were used. Their stools were collected periodically between 2-7 days for about 2 months to 2 years depending on the experimental designs and frozen at -20°C until assayed. The fecal progesterone were extracted and determined by an enzyme immunoassay. There was a 15-17 day estrous cycle (N=2 animals) with a 3-6 day follicular phase proven by the changes of progesterone patterns in which the fecal progesterone levels were below 300 ng/g in follicular phase and between 1000-5000 ng/g in mid-luteal phase. An intact gestation period with 470 days observed in one animal and her fecal progesterone concentrations with other 4 femals averaged 6062 ± 2784 ng/g during the pregnancy. After parturition, a marked decline in fecal progesterone excretion was evident. The estrus return around 1 month for the non-lactating giraffe and 3-7 months for the lactating ones after parturition was also confirmed by rapid raise in fecal progesterone excretion. Generally, the fecal progesterone levels of unpubertal giraffes were kept below 300 ng/g as those of mature ones at follicular phase. However, 2 out of 8 nulliparous females showed some higher fecal progesterone values kept around those of mature ones at the luteal phase. It was confirmed by a subsequent necropsy for the one case bearing with the luteal tissue in ovaries. The above data concurred with the othe reports indicated that giraffes adapt well in Taipei Zoo and the Fecal progesterone monitoring is a useful technique for examining the reproductive status of the giraffe.

KEY WORDS : giraffe, estrous cycle, pregnancy, enzyme immunoassay, fecal progesterone

* Taipei Zoo, Taipei, Taiwan, R. O. C.

* * Department of Animal Science, National Taiwan University,