台北市立動物園有蹄類動物的飼糧調整與寄生蟲防治

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摘要：台北市立動物園民國 90 年 9 月份飼養之有蹄類動物共 10 科 44 種 387 頭。本園自 86 年起開始調整有蹄類動物之飼糧配方，首先由新鮮牧草、樹枝葉及乾草之調整開始。目前僅使用 5 種新鮮草料：狼尾青牧草、桑葉、構樹葉、山麻黃、地瓜藤葉、做爲有蹄類動物之主食。自 89 年 3 月起停止使用進口牧草（梯牧草、小糠草、燕麥草、裸麥草及百慕達草等），全數改用本國產盤固拉乾草供有蹄類動物任食。因本園氣候潮濕，乾草容易發霉，故改善乾草儲存庫之溫溼度，中央空調溫度維持在 16-18 ℃。 88 年 10 份起增購除濕機全天運轉，使溼度維持在 75% 以下，乾草發霉情況完全改善。此外，調整粒狀飼料之原料組成，提高其中之維生素 E 含量由 100 IU/kg 至 400 IU/kg 。在日糧調整方面，以長鬃山羊與長頸鹿爲例，自 87 年開始於長鬃山羊飼料中增加精料並增加維生素 E 添加量，另外改善樹枝葉給飼方法之後下痢情況減少，使幼獸冬季存活率提高，長鬃山羊也由 87 年 5 頭增加至 90 年 12 頭。於 87 年 3 月至 89 年 6 月間，本園長頸鹿因消化道障礙及寄生蟲嚴重感染問題死亡多頭，因此， 88 年起逐步取消日糧中所有蔬果、麥片供應，增加樹木枝葉的種類與數量，並以低蛋白粒料中添加驅蟲藥方式，全面進行有蹄類動物寄生蟲防治作業，以方便現場驅蟲作業之施行與控管，有效達成本園有蹄類動物的飼糧調整與寄生蟲防治。

關鍵字：有蹄類動物、飼糧調整、寄生蟲防治

前言

在野外，有蹄類動物食用之植物多含有高量纖維，動物依所採食的植物種類，可分爲主要食草性如斑馬、野牛、羚羊等；主要食葉性如長頸鹿、長鬃山羊等；雜食植物性的野豬、馬來貘等。由於哺乳類動物缺乏可分解纖維之消化酵素，因此，所有草食性的有蹄類動物都必須藉由消化道內的微生物發酵作用以消化纖維。有蹄類動物的消化道因此有特定部位以容納微生物進行草料的消化，如牛的瘤胃（前消化道發酵 foregut fermenters）及馬的盲腸（後消化道發酵 hindgut fermenters)(Oftedal et al., 1996)；微生物消化纖維素所產生的揮發性脂肪酸，再由動物所吸收、代謝與利用 (Prins, 1977 ; Savage, 1977)。因此，爲了維持消化道中微生物的生態環境，有蹄類動物的食物相較於食肉動物及雜食動物，必須保持平衡與穩定，突然的改變食物往往造成微生物發酵系統障礙，而導致有蹄類動物的消化問題，如鼓脹、下痢，嚴重時可造成動物的疾病甚至死亡 (Stevens, 1988)。另外，在野外春季與雨季時，植物生長茂盛，新生植物的嫩芽中含有高量的維生素 E ，而有蹄類動物之繁殖季節亦與植物之生長期間相關，因此，圈養有蹄類動物飼料中維生素 E 的提供爲另一個飼糧配方中需要考慮的重點 (Dierenfeld and Traber, 1992)。所以，在圈養環境下，有蹄類動物日糧首要考慮新鮮草料及乾草（粗料）之供應，另外提供之精料，如配合飼料需著重於熱能、蛋白質與維生素 E 的含量。本園氣候潮濕、夏季高溫、

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The Diet, Feed Adjustment and Parasite Control for Ungulates at the Taipei Zoo

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Abstract

Currently the Taipei Zoo raises 387 types of ungulates, in 11 families, and 44 species. Since 1997, we adjusted the types of feed and formulations, which began with fresh forage and edible hay. Include were six kinds of fresh grass, branches, and leaves.These are used as the major food for our ungulates, which effectively reduces the undesirable condition of soft excrement, which was often seen with our giraffes before. We experimented with five kinds of imported hay between 1997 and 1999, eventually eliminating all but one type exclusively; the domesti-cally produced Pangola hay ad libitum since October 1999. In light of the damp weather at Taipei, especially in wintertime, the hay storehouse is air-condi-tioned and kept at the constant temperature of 16-18℃. Two dehumidifiers are kept on all day to control the relative humidity under 75%. We also increase the content of vitamin E in pellet feed from 100 IU/kg to 400 IU/kg. In the instance of our local Formosan serow, we stared to increase the supply of concen-trated and Vitamin E additive to their diet in 1998, and improved the feeding method of branches and leaves. Consequently, there are less episodes of diarrhea and higher survival rates of young animals in the winter. The serow at the zoo multiplied 5 in 1998 to 12 in 2001. From March 1998 to June 1999, we lost several giraffes due to the parasite infection and digestive disable. Since 1999, we decreased fruit and vegetable supply to giraffes and increase the tree leaves and branches. We also attempted in May 2000 to add anthelmintic (flubendazole 5mg/kg body weight) in the compound pellet for parasite control. Numerous Ascaris were purged from our Mongolian wild horses and zebras only one day after administration. The same method (invemetcin 0.2 mg/kg body weight) was used to purge nematode in October 2000, which also provided good effects. In the future as part of our parasite control efforts we will add suitable doses of anthelmintic in the feed pellets to address the specific need of certain species.

Key words: Ungulates, feed and parasite control.

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