EFFECTS OF OLFACTORY ENRICHMENT ON DIURNAL ACTIVITY AND STEREOTYPIC BEHAVIOUR OF CAPTIVE MALAYAN TIGERS (*PANTHERA TIGRIS JACKSONI*)

Vishwanee Kolandaiveloo, [1,2]Reuben Sunil Kumar Sharma & [2,3]Sumita Sugnaseelan

[1]Department of Veterinary Pathology & Microbiology
[2]Wildlife Research & Conservation Centre
Faculty of Veterinary Medicine
[3]Department of Animal Science, Faculty of Agriculture
Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

Abstract

Environment enrichment using olfactory stimuli is an emerging facet of zoo animal management, and has been shown to be effective in increasing behavioural diversity and reducing stereotypies in captive animals. This study was undertaken to document the effects of olfactory enrichment on the diurnal activity patterns and stereotypic repertoire in captive Malayan Tigers (*Panthera tigris jacksoni*). The diurnal behaviour of three pairs of adult *P.t. jacksoni* was observed at a local zoo using instantaneous scan sampling. The experimental protocol comprised three temporal blocks (pre-enrichment, enrichment and post-enrichment) lasting for five days each. A synthetically derived product (perfume) and a natural product (lime) were used as olfactory stimuli, and were applied on the walls of the enclosure following a fixed alternating routine. The frequency of behaviours and stereotypies observed for each tiger were scored following a defined ethogram. The diurnal activity budgets of the tigers were dominated by locomotion and stance (47%) and resting (33%). Pacing and patrolling were the major stereotypies exhibited by the tigers accounting for 8% of the diurnal activity budget. Investigative behaviour and scent marking significantly increased during the enrichment period. A reduction in locomotor activity was noted and the tigers spent more time resting in the presence of the olfactory stimuli. The frequency of stereotypic pacing and patrolling did not differ significantly between the pre-enrichment, enrichment and post-enrichment phases. However, the tigers did exhibit a trend of decreasing stereotypic behaviour pattern when the olfactory enrichment items were introduced. The highest contact frequency of the olfactory items was during the morning and evening. Olfactory stimuli have the potential to be used as a form of enrichment in captive tigers to increase their behavioural diversity and encourage investigative activities. Experimenting with varieties of olfactory stimuli may reveal preferences in captive tigers, and may prove effective in alleviating stress and reducing stereotypies in captive populations.

Keywords: Malayan Tigers, *Panthera tigris jacksoni*, stereotypies, olfactory enrichment