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Institute of Veterinary, Animal  
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# **Olfactory environmental enrichment of felids and the potential uses of conspecific odours**

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A thesis presented .  
in  
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## Thesis Abstract

The potential of olfactory stimulation as a tool for the environmental enrichment of captive felids was investigated at Orana Wildlife Park in Christchurch. Six cheetah (*Acyninox jubatus*), two serval (*Felis serval*) and one tiger (*Panthera tigris*) were given various scents: male domestic cat urine; a synthetic analogue of domestic cat facial pheromone; mouse odour; peppermint and catnip, in order to determine whether scent as an environmental enrichment can effectively modify felid behaviour. All of the scents elicited a response that was significantly different to the control presentation. The synthetic feline facial pheromone elicited the greatest response, particularly from the females in the study. However, despite these results, the interest shown in the scents was limited, and due to the small sample size and other constrictions that arise from working with a zoo, the effectiveness of scent as a tool for environmental enrichment remains inconclusive and further research is needed.

The further possibilities of scent as an environmental technique were investigated at Massey University's Feline Nutrition Unit. Anoestrous and oestrous female domestic cats (*Felis catus*) were presented the urine collected from four entire male domestic cats. The social dominance ranking between the four males and the additive relationship between the males and the females in the study was established. Females were presented with different combinations of the male urine in an observation room and their behaviour recorded. The latency to approach each urine sample, the duration of sniffing, the number of flehmen responses and the number of visits to each sample were recorded as measures of female interest in the urine samples.

The overall level of responsiveness appears to be quite similar during anoestrous and oestrous. During anoestrous females will investigate urine samples, however they do not appear to discriminate between the urine of different males. In oestrous the female response appears to be much more selective. A strong effect of relatedness was found for oestrous females investigating the urine of a related male. The higher the degree of relatedness to the male the lower the interest shown by the oestrous female. The dominant male also appeared to be preferred overall, and the most subordinate male

preferred least overall. The dominance hierarchy could not be replicated in this study and any effect shown for dominance rank may potentially be the result of some other characteristic unique to that male. In terms of environmental enrichment potential, the time spent investigating the urine patches was limited, however the fact that oestrous females show different levels of interest in response to the urine of different males suggests that conspecific urine holds information of interest and may be useful as an enrichment tool.

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