ABSTRACTS
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Ejaculation training and seminal alkaline phosphatase in domestic cats

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OBJECTIVES AND METHODS: The aims of this study were to describe two aspects of male reproduction that have not been reported in domestic cats (Felis catus) yet:

a) The artificial vagina (AV) ejaculation training process and 
b) Alkaline phosphatase (AP) concentrations in whole normal ejaculates obtained by AV. Furthermore, seminal AP was correlated with spermatozoa concentration.

a) Five postpubertal (4 to 11 months old), crossbred male cats were entered to our institutional cat colony, acclimatized and trained to ejaculate into an AV (1) in response to manual manipulation of the genital region 3 times a week during 20 minutes in the presence of a teaser queen. The proportion of trained cats, time to the first AV ejaculation and the final performance obtained, defined as libido at semen collection (excellent, good or poor) were recorded.

b) Forty ejaculates were collected by AV (1) from five, 1.5 to 3 years old cats of our institutional colony which were maintained under a 14L:10D photoperiod. Volume, color, motility (total and progressive), and vigor (0-5 scale; light microscopy x 200), concentration (Neubauer; 1:200 dilution), viability (Eosin-Nigrosin stain; x 1000), membrane integrity (HOS test), morphological abnormalities (contrast phase microscope x 1000), acrosomes (Pope staining method; 3), pH (pH-009 ATC, China), osmolality (Wescor, inc mod. 5520, USA), and alkaline phosphatase (AP; optimized colorimetric method (Weiner. Rosario, Argentina) were assessed and statistically analyzed (media ± SEM). Alkaline phosphatase was also correlated with spermatozoa concentration by the Spearman correlation test. P values > 0.05 were considered significant. This study was approved by the Faculty Institutional Care and Animal Use Committee.

RESULTS: a) All the animals (5/5) could be trained to ejaculate, although time to the first AV ejaculation varied from 1.5 to 5.5 months (mean 3.9 months). Final performance ranged from excellent (n=1) to poor (n=1) and was inversely related to the training period in all the cases.

b) Color appeared white opalescent, volume 102.6±13.9 µL; total motility 90.9±1.0 %, progressive motility 88.6±0.9 %; vigor 4.7±0.1, concentration 450.7±58.2x10⁶ sperm/mL, live sperm 88.6±1.3 %; HOS 90.56±1.5 %; morphoanomalies 10 % (head: 4, intermediate piece 2.2, tail: 3.5), acrosomal integrity 97.3±0.9 %, pH 7.9±0.1, osmolality 318.7±7.5 mOsm/L and AP 20,645.6 ±4,405.4 UI/L. No significant correlation could be found between AP and spermatozoa concentration.

CONCLUSIONS: a) Although the number of animals studied is low, it seems that all domestic cats could be trained to ejaculate into AV, with different final performance.

b) Alkaline phosphatase concentration in the whole ejaculate was within the values previously reported in cat seminal plasma, prostatic and bulbourethal fluids (2). Although, in this species, AP is originated at the level of testes and epididymides (2) it does not seem to be related to semen concentration.

(1) Sojka NJ, Jemings LL, Hammer CE. Artificial insemination in the cat (Felis catus L). Lab Anim Care1970; 20:198-204