

## Promiscuous behaviour disrupts pregnancy block in domestic horse (*Equus caballus*) mares:

### A counterstrategy against possible male infanticide

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Common practice that the domestic horse mare is removed from her home environment and transported elsewhere for mating. After conceiving she is returned back into her home environment and social group, containing often familiar stallions and geldings. If we presume that the behavioural adaptation for infanticide relevant for wild, or free-ranging horses has not been lost in domestication (and it is clear that it remains at least within feral populations), then we may expect that, unless prevented by fencing or other management measures, the dominant males in the home social group may subsequently attempt infanticide.

Foetal loss is a common phenomenon in domestic horses, being usually substantially higher than that in other domestic ungulates reaching up to 40%. One adaptive response to infanticide risk in polygynous populations is the Bruce effect. Pregnant females terminate their pregnancies when exposed to a dominant strange male. Our previous studies on plain zebra suggested the possibility of the Bruce effect also in equids. In this study we therefore tested the presumption that the Bruce effect could explain foetal loss in domestic horses.

Based on reproduction records from horse breeders, we have recently published that bringing a pregnant mare which had been mated away from home into a vicinity of a familiar male who was not the father of her foetus increased probability of pregnancy disruption (Behav Ecol Sociobiol DOI: 10.1007/s00265-011-1166-6). These mares aborted in 31% of cases, while none of those mated within the home stable aborted. Repeated sexual activity either by a stallion or dominant gelding from the normal home group was observed shortly after the mare came from away-mating. Pregnant mares isolated from home males by a fence were even seen soliciting them over the fence. Therefore, there is probably some other mechanism than the Bruce effect leading to pregnancy block in the mare.

We speculate that, once returned to the home "herd", and introduced to familiar males, mares were

more likely to terminate their pregnancy to save energy and avoid likely future infanticidal loss of their progeny by dominant male(s) of the home social group. Additional data has now shown that if a mare was mated away from home and was brought into an environment containing mares only, she was less likely to abort than a mare returning to an environment containing familiar male or males. This further supports our above hypothesis.

Supported by AWIN, EU FP7 project No. 266213.

Key words: foetal loss, domestic horse, Bruce effect, sexual behaviour

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