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Factors affecting suckling behaviour in loose housed domestic horses

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Suckling, the main part of maternal investment in equids, is crucial for development and social success of the foal. As such it is of great importance in horse breeding. We examined effect of following factors mentioned in literature on behavioural parameters of suckling in loose housed domestic horses: age and sex of the suckling foal, age, parity (primiparous/multiparous), pregnancy (yes/no) and rank of the mother and sex of the foetus if the mother was pregnant. Four variables describing suckling behaviour were modelled: proportion of suckling attempts rejected by the mother, suckling duration, frequency of suckling and proportion of suckling terminated by the mother. Further, suckling terminated by another mare were analyzed. Behavioural observations were conducted at the National Stud Kladruby nad Labem (Czech Republic). Eight groups of loose housed Oldkladruby horse mares with foals were observed from 14 days (in average) after delivery to abrupt weaning (four to six months of age), each foal for 120 days at least. Within two seasons, 10 495 suckling bouts and suckling attempts were observed in 79 foals (32 males, 47 females, mothered by 59 individual mares). Horses were studied with ad libitum sampling for 6 hours per group each 14 days. Dominance status of the mother was assessed using the Clutton-Brock index (Clutton-Brock et al. 1982, Nature 350:178-180), adjusted to the number of mares in each group, and dyadic dominance-submission relationships between all group members (mares) were determined. No significant effect of pregnancy and sex of the foetus on suckling behaviour were found, except the tendency of mothers bearing female foetuses to terminate more suckling. These findings are opposite to literature, where male foetuses were connected with higher rejection rates (Duncan et al. 1984, Anim Behav 32:255-263). However, incidence of suckling attempts rejected by the mother was very low (2.24 %). No effect of pregnancy of the mother could be caused by the stud management; horses are well fed and do not suffer for nutrition stress as horses in the wild may. All variables were negatively affected by increasing foals age (as expected). Neither sex of the suckling foal, nor age of the mother did significantly affect any of the studied variables. The higher dominance rank a mare achieved the higher frequency of other group member suckling she terminated ($r_s = 0.49$, $P < 0.0001$; Spearman correlation coefficients, PROC CORR, SAS). From suckling terminated by another mare ($N = 190$), in 93 % ($N = 177$) it is a dominant mare who ends the suckling. Despite these significant results, suckling terminated by another mare were negligible (1.8 % from all observed suckling bouts) and agonistic interactions between dominant and submissive mares seemed not to compromise foal development. In conclusion, in loose housed mares of domestic horse with foals we have found no detrimental effect of any of literally cited factors on suckling behaviour.