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Title	Behavioral development of foals during the preweaning period in Thoroughbred (<i>Equus caballus</i>) : spatial and nearest neighbor relations, and day-time time-budgets
Author(s)	GUNJIMA, Masahiko
Citation	Japanese Journal of Veterinary Research, 45(2), 122-122
Issue Date	1997-08-29
Doc URL	https://hdl.handle.net/2115/4624
Type	departmental bulletin paper
File Information	KJ00002398538.pdf



might be possible to predict the time of parturition in does by detecting an increase in the fecal testosterone concentrations. It is suggested that the feces must be preserved with ethanol or

antibiotics to prevent an increase in the testosterone concentrations during the preservation period if feces are to be kept at room temperature for a prolonged period.

Behavioral development of foals during the preweaning period in
Thoroughbred (*Equus caballus*): spatial and nearest neighbor
relations, and day-time time-budgets

Masahiko Gunjima

*Laboratory of Theriogenology,
Department of Veterinary Clinical Sciences,
School of Veterinary Medicine,
Hokkaido University, Sapporo 060, Japan*

The aim of this study was to examine the developmental changes of the foal's behavior in Thoroughbreds. Nine colts, 13 fillies and their mares were observed from May to October in 1995. Foals were delivered between May 2 and June 6, and weaned by the end of October. Data on the distance between the foal and mare, the foal's nearest neighbor, and daytime time-budgets were recorded by scan sampling for 2 hours per week. The results are as follows:

(1) During the first 2 weeks: Foals remained very close to their mares and had little contact with other horses. The amount of time foals spent on nursing, recumbency rest and solitary-play peaked during this period.

(2) During the first 2 months of life: As foals matured, they spent more time at greater distances from their mares, and had contact with other horses, especially with other foals. Nursing time decreased sharply and feeding time increased. Mutual-grooming and social-play with other foals increased while solitary-play decreased. Recumbency rest decreased and upright rest increased, although recumbency rest was more popular than upright rest.

(3) During the third month of life: Developmental changes of foals were interrupted in spatial relation, feeding time and recumbency rest time. Foals engaged in upright rest longer than in earlier months, although recumbency rest was still more popular. Mutual-grooming peaked during this period.

(4) During the fourth and fifth months: Foals spent more time at greater distances from their mares. Feeding time increased and recumbency rest time further decreased. Mutual-grooming and upright rest time decreased.

(5) Colts spent more time in social-play than fillies. There were no prominent differences in other behavior between the sexes.

(6) Mares didn't exhibit the recumbency response. Namely, mares were closer to their foals when foals were upright than when they were recumbent during the first 2 months of foal life.

In summary, behavior of foals changed evidently during the first 2 months, and between the fourth and fifth month of life. During the third month of life (July-August), the behavioral change was interrupted.