

1 **Influence of a permanent stallion contact on estrus behavior and fertility in mares:**
2 **preliminary results**

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9 Fertility problems in horses with high genetical potential are quite frequent and have not
10 only genetic and emotional, but also economical consequences. Even after intense breeding
11 management in mares, foaling rate rarely exceeds 75% compared to up to 95% observed in
12 wild feral herds. Until now, interdisciplinary ethological and reproductive studies about
13 this observation are scarce.

14 The aim of the present study was therefore to investigate the influence of permanent
15 stallion contact on mares during estrus, especially on sexual behavior, changes in
16 reproductive function and fertility. Experiments were performed using 2 stallions from the
17 Swiss National Stud in Avenches and 200 private mares, aged between 3 and 25 years.
18 Mares were randomly assigned either to individual boxes with stallion contact (group 1) or
19 without stallion contact (group 2). Ovulation was induced with 3000 IU hCG when follicle
20 size reached 35 mm. During the following 96 hours, clinical and sonographic examination
21 of the genital tract of the mares was performed and estrus behavior monitored when teasing
22 with a stallion. In addition blood samples were collected for cortisol and estrogen
23 determination. Insemination with fresh, chilled or frozen semen was performed 24 and 40
24 hours after hCG treatment and pregnancy diagnosed 15 days later. Mares which did not
25 conceive were assigned to the other group in each subsequent cycle.

26 Our preliminary results demonstrate that permanent stallion contact affected sexual
27 behavior, cervical opening at insemination and conception rate of mares after insemination
28 with fresh, chilled and frozen semen.

29 From these results, we propose that the keeping of a stallion side-to-side to brood mares
30 could represent a promising management option to optimize fertility in mares.

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