

Pregnancy duration in mares

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Abstract: Accurate prediction of pregnancy duration is an important aspect in managing mares’ reproduction. Pregnancy duration was affected by the month of mating (P < 0.01) and the year of conception (P < 0.01). The age of mares at the time of mating did not influence pregnancy duration. Similarly, stillborn foals did not significantly affect pregnancy duration. In conclusion, pregnancy duration was influenced by the month of mating and the year of conception. The knowledge of these factors is very important for the most accurate determination of parturition date.

Key Words: mare, reproduction, foal, season

INTRODUCTION

In horse reproduction, there is still a wide range of unanswered questions about pregnancy and timing of birth (Cilek 2009). This research area is very important, for example, for sport horse breeders whose aim is often to get foaling at the beginning of the year because of a greater maturity of foals compared to those born later. Simultaneously, more accurate prediction of birth date is very important for the preparation of the mare on parturition and early detection of any problems during or after parturition (Rezac et al. 2013). The physiological duration of pregnancy is relatively broad, ranging from 320 to 365 days, and is affected by several different factors.

Pregnancy duration is affected by environmental, fetal and maternal factors (Satué et al. 2011). The key environmental factors are the breeding season, photoperiod, and treatment with artificial light. Within the fetal factors, the sex of the foal is cited. The most important maternal factors are age, breed, and number of births.

The objective of the study was to examine the variability of pregnancy duration in mares. Simultaneously, the influence of the year, month of mating, age of mare and occurrence of stillborn foals on pregnancy duration were assessed.

MATERIAL AND METHODS

Animal characteristics

The assessment of pregnancy duration in mares was carried out on a total of 86 Old Kladruber mares. Mares had an average age of 9 years, ranging from 4 to 18 years. A total of 190 completed pregnancies were evaluated. Pregnancy duration was determined as the interval from the date of the last mating to the date of delivery. Both primiparous and multiparous mares were included in the experiment. The number of foalings ranged from 1 to 7. Three months before delivery, mares were fed 12 kg hay/day, 1.5 kg oats/day and 0.5 kg barley/day.

Statistical analysis

Statistical analysis was conducted using SAS (SAS Institute Inc., Cary, NC, USA). The normality of distribution of pregnancy duration in mares was verified using the Kolmogorov-Smirnov test. The effects on pregnancy duration in mares were analyzed by the mixed model procedure.

RESULTS AND DISCUSSION

The effect of the year of mating on pregnancy duration in mares is shown in Figure 1. Pregnancy duration in mares mated in 2015 was shorter than other years (P < 0.05). The influence of the month of mating on pregnancy duration in mares is shown in Figure 2. Pregnancy duration was affected by the month of mating (P < 0.01) and the year of conception (P < 0.01).
mating on pregnancy duration in mares is shown in Figure 2. Pregnancy was longest in mares mated in March, thereafter pregnancy gradually shortened, and the shortest pregnancy was in mares mated in July (P < 0.01). The age of mares at the time of mating (Figure 3) and the occurrence of stillborn foals (Figure 4) did not significantly affect pregnancy duration.

Figure 1 Mean pregnancy duration ± SEM in mares mated in different years

Figure 2 Mean pregnancy duration ± SEM in mares mated in different months

Figure 3 Mean pregnancy duration ± SEM in mares of different ages

Figure 4 Mean pregnancy duration ± SEM in mares that delivered alive or dead foals

Although not all authors agree, some of them state that the year of mating affects pregnancy duration (Valera et al. 2006, Cilek 2009). The main cause could be the varying nutritional quality of feed in different years. The influence of the month of mating on pregnancy duration was described in several studies (Perez et al. 2003, Rezac et al. 2013). They documented the phenomenon that mares mated at the beginning of the year had significantly longer pregnancies than those mated at the end of breeding season. Winter et al. (2007) did not find any effect of mares’ age on pregnancy duration in mares. The incidence of stillborn foals did not influence pregnancy duration. Satué et al. 2011 report that neither fetal complications were observed in pregnancies exceeding 400 days.

CONCLUSION

Pregnancy duration was influenced by the month of mating and the year of conception. Further research will be necessary to better understand the causes of variability of pregnancy duration in horses.

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REFERENCES