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Correlation analysis of age and sexual behaviour parameters of Marwari stallions

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Abstract

For maximising the sexual efficacy, stallions need to have a strong libido and suitable sexual conduct. The sexual behaviour of stallions is significantly influenced by genetic, environmental, or learned factors. This study was performed on Marwari stallions to see the influence of age on their sexual behaviour parameters. The Sexual behaviour of Marwari stallions was observed at the time of semen collection, including erection time, reaction time, ejaculation time, number of mounts and number of thrusts. Only the number of thrusts was found to exhibit a significant positive correlation with age, while other sexual behaviour parameters were not influenced by age.

Keywords: Age, correlation, Marwari stallions, semen collection, sexual behaviour parameters

Introduction

The application of sexual behaviour information to domestic animal management is the main emphasis of applied animal behaviour science. Basic or applied ethology and animal behaviour research are extremely relevant to domestic animal breeding, yet they are rarely covered in great detail in animal husbandry (McDonnell, 2016) [8]. Stallion sexual behaviour evaluation is crucial since it affects the animal's ability to reproduce (Rua *et al.*, 2015) [13]. Stallions must be kept in good sexual behaviour and have a healthy libido in order to maximise sexual efficiency (Pickett *et al.*, 1975; Sieme *et al.*, 2004) [10, 14]. A variety of factors affect stallions' desire and capacity for mating. These factors, which the management of stallions greatly affects, can have inherited, environmental, or learned tendencies. The most common cases of these issues are with young or experienced stallions (Hurtgen, 2009) [5]. Furthermore, poor management, particularly excessive or persistently harsh punishment for expressing sexual interest, is a typical reason for decreased or stopped libido in stallions (Bugalia *et al.*, 2000; Blanchard *et al.*, 2011; Kumar *et al.*, 2011; Houssou *et al.*, 2018) [2, 1, 6, 4]. Assessing the stallions' sexual behaviour is a crucial component of determining whether they have breeding potential or other issues. Diagnosing conditions like low libido, erection problems, or unsuccessful ejaculation requires an awareness of the sequence of actions the horse exhibits prior to, during and after mating (Pycocock *et al.*, 2006) [11].

Materials and Methods

Animals

Six healthy adult Marwari stallions possessing an age between 50 and 140 months and being maintained at the Equine Production Campus, ICAR-National Research Centre on Equines, Bikaner, Rajasthan, India, under good conditions of feeding were used in this study (Table 1). Semen samples were collected from male horses during breeding season in the early morning prior to feeding, twice a week, using Colorado model artificial vagina (AV) with a female in oestrus as a dummy. Simultaneously, the sexual behaviour parameters were also recorded for each Marwari horse.

Table 1: Identification of horses with their age

S. No.	Marwari Stallion (identification)	Age (months)
1.	Mohit	140
2.	139	86
3.	Dogger	78
4.	167	52
5.	I. 70	51
6.	175	50

Data Collection

Different sexual behaviour parameters were recorded for each Marwari stallion during breeding season, including erection time, reaction time, ejaculation time, number of mounts and number of thrusts. Reaction time in this study was considered as the time between the stallion entered the breeding area and mounted on the dummy (Cavinder *et al.*, 2010) [3]. Erection time in this study was considered as the time between the stallion first saw the dummy female and the male's penis got

completely erected (Waheed *et al.*, 2015) [15]. Ejaculation time in this study was considered as the time between the penile intromission by males and the successful emission of semen. The number of mounts given by the Marwari stallion on the dummy mare was noted, as reported earlier (McDonnell, 1992) [7]. The number of thrusts given by the Marwari stallion to evoke the ejaculation was noted, as reported earlier (McDonnell, 1992) [7].

Analysis

Data on sexual behaviour parameters of Marwari stallions were collected, organised, summarized and analysed for mean, standard error (SE), analysis of variance (ANOVA) and Duncan's new multiple range test (DNMRT) and finally subjected to correlation analysis with the age of the horses using IBM-SPSS Statistics Version 26.

Results and Discussion

Table 2: Correlation of sexual behaviour parameters of horses with their age

	Age	Erection Time	Reaction Time	Ejaculation Time	No of Mounts	No. of Thrusts
Age	-	-0.244	-0.196	-0.084	-0.154	0.355*

Note: **Significant at the 0.01 level. *Significant at the 0.05 level.

Table 2 shows the correlation of Marwari stallions' age with erection time, reaction time, ejaculation time, number of mounts and number of thrusts. In the present study, a significant and positive correlation of age is found with the number of thrusts ($p < 0.05$), while a non-significant correlation of age was found with erection time, reaction time, ejaculation time and the number of mounts. A non-significant correlation between the age of stallions and erection time and the number of mounts was also observed earlier, similar to the present study (Noue *et al.*, 2001) [9]. There is a non-significant correlation between the age of stallions and reaction time, erection time and ejaculation time which is in accordance with the present study (Rua *et al.*, 2016) [14]. No traceable literature is available on correlation analysis of the age of Marwari horses and sexual behaviour parameters.

Conclusion

From the present study, it can be concluded that most of the sexual behaviour parameters of the Marwari stallion, including erection time, reaction time, ejaculation time and number of mounts, are not affected by the age of the horses. The age of the stallions only has an impact on the number of thrusts, which has a significant positive correlation with age.

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Conflicts of Interest

No conflicts of interest were declared by the authors.

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