

Reactivity of foals to an unknown environment: open round pen

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Abstract: The aim of the present study was to verify the reactivity and habituation of foals on the open round pen. Eleven foals, six males and five females, ranging in age from 8 to 11 months, were used. The foals were separated from the group and taken individually to the open round pen for four consecutive days, where they remained for two minutes. Behavioral observations of the animals were performed by the continuous visual method. There was no effect ($p>0.05$) on any of the variables according to score, gender or day. All the animals kept walking, explored or remained vigilant inside the round pen (score 2, 5 and 6, respectively, of Movement), kept their eyes attentive (score 2 of Position of the Eyes), and their ears moved frequently (score 3 of Position of the Ears), did not snort (score 2 for Snorting) and did not attempt to escape (score 2). The Vocalization variable had the most variation in the frequency of occurrence of the scores, with 60% of score 1 (absent) and 34,77% of score 2 (occasional). Foals, males and females, remain alert to the first section of contact with the open round pen. The use of the open pen can contribute to the reactivity of the horses, making them calmer when being able to visualize other animals, without taking away their attention to the new environment.

Keywords: behavior, habituation, horses

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Introduction

Horses are used in several activities that enable and require the interaction between man and animal, as a supporter of activities linked to production and equestrian sports. Due to this conviviality, the study of this relationship and the behavior of the animal is of great importance. The understanding of animal temperament is complex, since the concept is ample and complicated, involving several characteristics peculiar to each individual (Calviello, 2015).

The discernment of the foal's social relations and essentially its temperament can assist the animal to achieve success in the equestrian activity in which it will be designated as an adult (Calviello, 2015). Understanding reactivity helps the development of animal training programs and the selection of horses for appropriate tasks, as opposed to admitting that every horse is able to perform all kind of tasks.

Thus, while obtaining an animal, the buyer can analyze the reaction of the horse and choose the one that has a reactivity profile compatible with their interest (Hennessy et al., 2008). It is important that professionals know that there is a possibility of acting through management, promoting the training of animals through the process of habituation (Leiner and Fendt, 2011). The exposure of the horse to places of daily management, causes their reactivity to diminish, a beneficial situation to the horse's management. Several places are used to manage horses, among them the round pen stands out, since it is in this location that the animal is usually tamed and trained. Little is studied about the reactivity of the animals to different locations, especially the round pen. The aim of the present study was to verify the reactivity and habituation of foals to an open round pen.

Material and Methods

The present study was approved by the Committee on Ethics in the Use of Animals (CEUA) of the School of Animal Science and Food Engineering of the University of Sao Paulo: protocol number 2673240516.

The experiment was carried out in the Equine Sector of the USP Campus Fernando Costa, using eleven foals with undefined breed, six males and five females, ranging in age from 8 to 11 months.

The foals belonged to the same group, were housed in pasture and taken at 7:00 a.m. to be fed in the feeding stall. The animals were then separated from the group and taken individually to the open round pen for four consecutive days. The animals were positioned in the center of the pen and the lead line was removed. The open round pen was made of wood boards and spaced apart with a radius of 3 meters. (Figure 1 and 2).



Figure 1. Animal entering the open round pen.



Figure 2. Animal inside the open round pen.

The two-minute count for the behavioral observation of the animals began after closing the round pen door, performed by continuous visual method, using a methodology adapted from Calviello (2015), giving scores to six behavioral variables (Table 1). Data were analyzed with a variance test by gender, score and day of observation, with multiple comparison by PDIFF at 5%, analyzed with the statistical program SAS (2004).

Table 1. Scores assessed according to the behavior variables during the experimental period.

| Behavioral variables | Score | Description |
|----------------------|-------|--|
| Movement | 1 | Standing still |
| | 2 | Walking |
| | 3 | Trotting |
| | 4 | Cantering |
| | 5 | Exploring (walking slowly sniffing the ground) |
| | 6 | Vigilant (neck straightened and attentive eyes) |
| | 7 | Bucking |
| Position of the Eyes | 1 | Relaxed eyes |
| | 2 | Attentive eyes |
| | 3 | Wide eyes |
| Position of the Ears | 1 | Ears upright or relaxed |
| | 2 | Ears facing forwards or backwards |
| | 3 | Ears in constant movement (shifting position) or pinned back |
| Vocalization | 1 | Absent |
| | 2 | Occasional |
| | 3 | Frequent |
| Snorting | 1 | Yes |
| | 2 | No |
| Attempt of escape | 1 | Yes |
| | 2 | No |

Results and Discussion

The results were based on behavioral observations evaluated as frequency of the occurrence of the scores for each behavioral variable at the moment of entry of the foal in the box (Table 2).

There was no effect ($p>0.05$) on any of the variables according to score, gender or day. All the animals kept walking, explored or remained vigilant inside the round pen (score 2, 5 and 6, respectively, of Movement), kept their eyes attentive (score 2 of Position of the Eyes), and their ears moved frequently (score 3 of Position of the Ears), did not snort (score 2 for Snorting) and did not attempt to escape (score 2). The Vocalization variable had the most variation in the frequency of occurrence of the scores, with 60% of score 1 (absent) and 34,77% of score 2 (occasional).

Keeping their eyes attentive combined with the attitude of walking and exploring the environment reinforces the horse's curiosity. It is suggested that this behavior was stimulated by the use of an open pen,

where the animals were able to visualize the exterior, which made them calmer but did not take away their attention to the new environment.

As the animals lost visual contact with their group, it is believed that the observed vocalization occurred in their search of the location of their group. The animals used in this work were being managed for about 60 days, which favored the calm behavior in the round pen, reinforcing the importance of the early management of the horses to improve the man and horse relationship (Calviello, 2015).

Table 2. Mean values of the frequency of occurrence, in percentage, of the variables analyzed, by gender and day.

| Behavioral variables | Score | Mean | Females | Males | Day 1 | Day 2 | Day 3 | Day 4 |
|----------------------|-------|--------|---------|--------|--------|-------|--------|--------|
| Movement | 1 | 0,49 | 0,21 | 1,19 | 13,49 | 13,97 | 13,97 | 0,00 |
| | 2 | 99,65 | 99,62 | 99,69 | 100,00 | 90,87 | 90,87 | 81,56 |
| | 3 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| | 4 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| | 5 | 64,67 | 75,62 | 51,93 | 92,12 | 65,84 | 56,10 | 28,24 |
| | 6 | 98,80 | 99,33 | 97,87 | 36,55 | 75,28 | 75,27 | 100,00 |
| | 7 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| Position of the Eyes | 1 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| | 2 | 99,99 | 99,98 | 99,99 | 82,36 | 91,40 | 100,00 | 100,00 |
| | 3 | 0,13 | 0,22 | 0,82 | 17,64 | 8,60 | 0,00 | 0,00 |
| Position of the Ears | 1 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| | 2 | 0,00 | 0,00 | 0,64 | 0,02 | 0,02 | 0,00 | 0,01 |
| | 3 | 100,00 | 100,00 | 99,35 | 99,98 | 99,98 | 100,00 | 99,99 |
| Vocalization | 1 | 60,01 | 58,13 | 61,86 | 66,69 | 72,61 | 76,61 | 26,49 |
| | 2 | 34,77 | 34,13 | 35,41 | 27,22 | 27,22 | 27,22 | 60,67 |
| | 3 | 0,00 | 0,00 | 0,00 | 0,04 | 0,00 | 0,00 | 0,00 |
| Snorting | 1 | 0,16 | 2,87 | 0,96 | 23,58 | 26,91 | 26,91 | 0,00 |
| | 2 | 98,28 | 96,91 | 99,05 | 73,25 | 73,25 | 73,25 | 100,00 |
| Attempt of escape | 1 | 0,00 | 0,02 | 0,00 | 0,09 | 0,00 | 0,00 | 0,00 |
| | 2 | 100,00 | 99,96 | 100,00 | 99,95 | 99,95 | 100,00 | 100,00 |

Conclusions

Foals, males and females, remained alert to the first section of contact with the open round pen. The use of the open pen can contribute to the reactivity of the horses, making them calmer when being able to visualize other animals, without taking away their attention to the new environment.

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